

Public Education on Cervical Cancer in Poland

Subjects: Health Policy & Services

Contributor: Marcin Śniadecki, Patryk Poniewierza, Paulina Jaworek, Ada Szymańczyk, Gorm Andersson, Maria Stasiak, Michał Brzeziński, Małgorzata Bońkowska, Magdalena Krajewska, Joanna Konarzewska, Dagmara Klasa-Mazurkiewicz, Paweł Guzik, Dariusz Grzegorz Wydra

Proper targeted cancer prophylaxis reduces the incidence of cancer in all forms; this includes cancers with significant progression potential and poor prognosis. refinement of the public education on cervical cancer (CC) risk factors, popularization of CC screening incentives amongst the public, and improvement of networking strategies between CC screening facilities ("cervical screening clinical"), allowing screenings to be more efficient and rapid. To enhance the future quality of life of those with rapid CC progression by catching the disease preemptively and limiting the sequelae of the disease, it is important to improve education and access to medical services.

Keywords: cervical cancer ; screening program ; education

1. Introduction

Cervical cancer (CC) is the most prevalent gynecological malignancy worldwide ^[1]. Three thousand women are newly diagnosed with CC in Poland each year ^[2]. Despite the fact that the registered absolute number of CC cases in the country counting 38 million people is not very high, it should be noted that the five-year overall survival (OS) rate for CC is only about 54%, and each individual CC patient through her disease has a negative psychological and economic impact on her relatives and, thus, for the whole society ^[3]. It is obvious that this mainly happens when the disease has progressed to an incurable stage.

Moreover, according to the International Agency for Research on Cancer (IARC), the age-standardized mortality rate (deaths from CC per 100,000 women/year) for Poland is 4.9, and the European average is 3.1. This value is comparable to Eastern European countries, with their widely considered worse access to medical care. According to the report, Poland is the seventh country in Europe with the highest mortality rate for CC ^[4].

Initially, it seemed that the breakthrough moment in the fight against CC was the implementation of vaccinations against the high-risk human papilloma virus (hrHPV), which (as a group of viruses) is responsible for about 99.7% of CC cases ^[5]. The effectiveness of the vaccines against hrHPV is relatively high, especially if they are administered before sexual activity is initiated ^[6].

Unfortunately, hardly anyone predicted that this extremely effective tool in terms of preventing CC would meet with such a lot of reluctance among society to use it. In Poland, it is estimated that the vaccination coverage accounts only about 7.5–10% ^[7]. This value is one of the lowest among European countries—United Kingdom, Spain, Portugal, Norway, Sweden, Iceland, and the Belgian Flanders exceeded the threshold of 70% ^{[8][9]}.

2. State of Art

2.1. Primary Prevention

Primary prevention pertains to the successful HPV vaccination program directed via the government guidelines. In Poland, there are three types of vaccines against HPV available. The first is the bivalent vaccine Cervarix (HPV-2), which is targeted against 16 and 18 HPV variants. Next is the quadrivalent HPV vaccine Gardasil (HPV-4) targeted against 6, 11, 16, and 18 HPV variants, and the final nine-valent vaccine Gardasil 9 (HPV-9) is targeted against 6, 11, 16, 18, 31, 33, 45, 52, and 58 HPV variants.

These vaccines are promoted to both genders. The scheme of HPV vaccine dosing in Poland includes children between the ages of 9 and 14 years old to receive two doses of the HPV-2 vaccine, the second dose is to be given 5–13 months apart from the first dose. If the child receives the second dose earlier than 5 months, a third dose of the HPV-2 vaccine must be administered. The dosing scheme of the HPV-4 and HPV-9 vaccines for children between the ages of 9 and 14 years old is exactly the same as for the scheme of the HPV-2 vaccine.

Regarding individuals aged 15 years old or older, three doses of the HPV-2 vaccine are required. After the first dose, 1 month must pass for the injection of the second dose, and then 6 months must pass to receive the final third dose. Meanwhile, for individuals 15 years old or older receiving the HPV-4 or HPV-9 vaccines, the time spacing between the doses is different. After the first dose, the second dose is given after 2 months, then the third dose is administered after 6 months.

In Poland, the HPV-2 vaccine effectiveness is based on the results in women between the ages of 15 and 25 years old and has a proven immunogenicity in females ranging from 9 to 25 years old. The HPV-4 effectiveness is based on the results from women ranging between 16 and 26 years old and has a proven immunogenicity in females ranging between 9 and 15 years old.

The Polish government states that 50–80% of sexually active men and women will be infected with HPV, half of those individuals being between the ages of 15 and 25 years old. The HPV vaccines successfully lower the risk of developing cervical cancer by 70% and the risk of developing genital warts by 90%, a condition that can predispose the cervix to a precancerous state ^[10].

As of 1 January 2021, Cervarix, the HPV-2 vaccine, is refunded in Poland for 138.18 zloty (about 30 EUR) per dose for individuals who are 9 years old and older ^[11]. Gardasil, the HPV-4 vaccine, and Gardasil-9, the HPV-9 vaccine, are currently not refunded in Poland, though they are available. For the Gardasil-9 vaccine, one requires a doctor referral and needs to pay 340.00 zloty (about 73 EUR) per dose ^[12].

2.2. Secondary Prevention

The secondary prevention of CC involves screening tests detecting precancerous lesions with subsequent treatment using ablative or excisional methods ^[13]. Currently, there are three methods of cervical precancer screening: cytology-based screening, molecular HPV screening, and visual inspection with acetic acid. Cytology-based screening is taking a sample from the cervix and placing it either on a slide (Pap smear) or in a container of preservative solution (liquid-based cytology, LBC). If there are cell abnormalities discovered, they are classified by the Bethesda System. Molecular HPV testing requires collecting samples of cells with a small brush, placing them in preservative solution, and processing them in laboratory settings. A visual inspection with acetic acid (VIA) observes cell changes that become visible, mainly because they become faintly white after applying dilute (3–5%) acetic acid with a cotton swab. All of those tests require speculum and light sources.

Since abnormal results of screening of the CC methods are not always associated with cancer, a further diagnosis of the changed area is needed. There are three diagnostic methods currently used: colposcopy, biopsy, and endocervical curettage (ECC). Colposcopy involves examination of the cervix, vagina, and vulva under strong lights and magnification; a biopsy requires the removal of a sample of previously visible cells changed during VIA, and ECC is scraping of the cells from the endocervical canal, mainly when the transformation zone cannot be observed. The treatment methods for precancerous changes involve cryotherapy, the loop electrosurgical excision procedure (LEEP—removal of the lesion and entire transformation zone), and cold knife conization (CKC—removal of the cone shaped area including ectocervix and endocervix) ^[14].

In Poland, it is recommended to perform a Pap smear or LBC in women less than 30 years old every 1–3 years and LBC every 1–3 years in women older than 30 and younger than 70 years old. In the older age group, the Co-Test is recommended after 6–12 months in cases where either the LBC or hrHPV test was positive. In cases where both tests are positive or where the detected changes are associated with p16/Ki67, hrHPV 16, 18, non16, and 18, a LSIL colposcopy is recommended and the Co-Test every 1–3 years in the case of negative results of the colposcopy. In cases where AGC-NOS (atypical glandular cells, not otherwise specified) is detected, there is a recommendation for a colposcopy and endometrial biopsy and a Co-Test within 12 months, followed by regular screening after. In women younger than 30 years old, the recommendations are the same, except for the follow-up cytology 12 months after a negative colposcopy result ^[15].

2.3. Tertiary Prevention

The tertiary prevention has to do with CC patients and their access to, as well as quality and effectiveness of, care. For a tertiary prevention to be successful, the WHO has identified an effective referral system and good compliance with the treatment, as well as functioning palliative care, to be essential. Referral systems, as well as palliative care, are largely dependent on the resources and structure of the healthcare system in each region. Palliative care can be especially demanding of a system, as it requires a high degree of specialized personnel.

Compliance with treatment is both a good predicting factor for good patient outcomes, as well as a complex problem to tackle. Social factors, such as access to treatment and social relievers (housing during treatment, time off work, etc.),

along with consistency regarding treatment facilities, were all positively correlated with increased compliance ^{[16][17]}. The psychological factors that were associated with increased compliance were the patient's sense of benefit from the treatment, their sense of disease severity, and their willingness to avoid complications brought on by their condition. Patients who worry about the side effects of treatment or believe that the disease is uncontrollable, however, tend to show lower compliance with treatments. High health literacy and knowledge of the disease and treatments, as well as a positive patient–prescriber relationship, are also factors that increase compliance ^{[17][18]}.

Therapeutic vaccinations are a controversial yet promising treatment for recurrent HPV-related cancers. Currently, there are several clinical trials investigating the effect of vaccinations on disease progression. The theoretical background suggests that vaccinations can prevent recurrent cancer manifestations by increasing the cell-mediated immunity in an already infected patient, as opposed to preventing the initial infection. The ideal target for this type of therapy is those HPV-infected and those with preinvasive lesions, as progression to cancer proper can take several decades. It is worth noting that this use of HPV vaccinations is not, approved by the US Food and Drug Administration or the European Medicines Agency, although several clinical trials are currently in progress ^[19].

3. Analysis of the Current Situation in Poland with Focus on Never Been Screened Persons

Apart from the systemic ideal situation described above, a significant reason for the ongoing high occurrence of CC is the avoidance of regular CC screening. The indicated psychosocial barriers, which prevent patients from participating in prophylaxis, can be classified into three categories: barriers related to facilities/environment, e.g., difficulties in making an appointment, long distance from home to the facility, and problem with transport; barriers related to the personal characteristics of patients, e.g., problems with the organization of time, additional costs, other priorities, lack of awareness of the significance of prophylaxis, and emotional barriers related to the results of the examination itself; and social barriers, e.g., negative experiences with healthcare professionals in the past and lack of support among family and friends ^[20].

Access to a gynecologist in Poland is actually difficult. According to the NIK report (based on data from the GUS/Central Statistical Office and NFZ/ National Health Fund, NHF) of 2016 ^[21], there were no gynecology and obstetrics clinics in many rural communes. The highest percentage of communes with this type of clinic was found in the Silesian Voivodeship, and yet, 28.7% were communes without gynecological clinics in the total number of communes, while, in Podlaskie Voivodeship, where accessibility was at the lowest level, the percentage of the communes without gynecology and obstetrics clinics was 78.8%. The data shows that the lack of availability of a gynecologist is most common in rural communes, despite the fact that 40% of women and newborns live there. As a result, in the voivodeships with the highest percentage of communes without clinics—Podlaskie and Lubelskie—there are 27,000 patients per one gynecological clinic in the countryside, and some women have to travel up to 50 km to the nearest one. With the simultaneous problem of communication exclusion, which affects up to 13.8 million Poles ^[22], CC prevention becomes an interdisciplinary problem, and apart from medical issues, an important action to improve the situation of high CC incidence is increasing the availability of healthcare services.

However, the most common reported barriers ^[20] were those from the category of the personal characteristics of patients. Simple psychosocial interventions focused on these barriers, such as leaflets and automatic messages discussing barriers and coping with them and automatic messages ^{[23][24]}, have been shown to influence participation in screening. The positive impact of GPs (general practitioners) trained in communication skills, including discussing psychosocial barriers to changing health habits in patients, was also indicated ^[25].

It has been shown that personal invitations are an ineffective way of increasing participation in the CC prevention program; in Poland, in 2009, only 5.5% responded to personal invitation to an examination. Women living in rural areas and with lower education resigned more often than women living in cities with higher education; therefore, the information campaign should cover the first group in particular ^[26].

References

1. Sung, H.; Ferlay, J.; Siegel, R.L.; Laversanne, M.; Soerjomataram, I.; Jemal, A.; Bray, F. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA Cancer J. Clin.* 2021, 71, 209–249.
2. Wojciechowska, U.; Didkowska, J. Zachorowania i Zgony na Nowotwory Złośliwe w Polsce. Krajowy Rejestr Nowotworów, Narodowy Instytut Onkologii im. Marii Skłodowskiej-Curie—Państwowy Instytut Badawczy. Available online: http://onkologia.org.pl/raporty/#tabela_rok (accessed on 12 June 2022).

3. Wojciechowska, U.; Didkowska, J. Changes in five-year relative survival rates in Poland in patients diagnosed in the years 1999–2010. *Nowotwory. J. Oncol.* 2017, 67, 349–358.
4. Arbyn, M.; Gultekin, M.; Morice, P.; Nieminen, P.; Cruickshank, M.; Poortmans, P.; Kelly, D.; Poljak, M.; Bergeron, C.; Ritchie, D.; et al. The European response to the WHO call to eliminate cervical cancer as a public health problem. *Int. J. Cancer* 2021, 148, 277–284.
5. Walboomers, J.M.M.; Jacobs, M.V.; Manos, M.M.; Bosch, F.X.; Kummer, J.A.; Shah, K.V.; Snijders, P.J.F.; Peto, J.; Meijer, C.J.L.M.; Muñoz, N. Human papillomavirus is a necessary cause of invasive cervical cancer worldwide. *J. Pathol.* 1999, 189, 12–19.
6. Kjaer, S.K.; Dehlendorff, C.; Belmonte, F.; Baandrup, L. Real-World Effectiveness of Human Papillomavirus Vaccination Against Cervical Cancer. *J. Natl. Cancer Inst.* 2021, 113, 1329–1335.
7. Owsianka, B.; Gańczak, M. Evaluation of human papilloma virus (HPV) vaccination strategies and vaccination coverage in adolescent girls worldwide. *Przegl. Epidemiol.* 2015, 69, 53–155.
8. Nguyen-Huu, N.; Thilly, N.; Derrough, T.; Sdona, E.; Claudot, F.; Pulcini, C.; Agrinier, N. HPV Policy working group. Human papillomavirus vaccination coverage, policies, and practical implementation across Europe. *Vaccine* 2020, 38, 1315–1331.
9. Polman, N.J.; Snijders, P.J.F.; Kenter, G.G.; Berkhof, J.; Meijer, C.J.L.M. HPV-based cervical screening: Rationale, expectations and future perspectives of the new Dutch screening programme. *Prev. Med.* 2019, 119, 108–117.
10. Narodowy Instytut Zdrowia Publicznego. Szczepionka Przeciw HPV. Available online: <https://szczepienia.pzh.gov.pl/szczepionki/hpv/?strona=4#jakie-rodzaje-szczepionek-sa-dostepne-w-polsce> (accessed on 12 June 2022).
11. Ministerstwo Zdrowia. Informacja Ministra Zdrowia w Sprawie Włączenia do Wykazu Refundowanych Leków Szczepionki Przeciw Wirusowi Brodawczaka Ludzkiego (HPV) Oraz Zmian w e-Karcie Szczepień. Available online: <https://www.gov.pl/web/zdrowie/informacja-ministra-zdrowia-w-sprawie-wlaczania-do-wykazu-refundowanych-lekow-szczepionki-przeciw-wirusowi-brodawczaka-ludzkiego-hpv-oraz-zmian-w-e-karcie-szczepien?fbclid=IwAR0YW7pPTQztiqzfrCc9yrAX7KBY0IVoGTGxFGEmOt90iBbPJ> (accessed on 7 June 2022).
12. Wojtyła, C.; Ciebiera, M.; Kowalczyk, D.; Panek, G. Cervical Cancer Mortality in East-Central European Countries. *Int. J. Environ. Res. Public Health* 2020, 17, 4639.
13. Ogilvie, G.; Nakisige, C.; Huh, W.K.; Mehrotra, R.; Franco, E.L.; Jeronimo, J. Optimizing secondary prevention of cervical cancer: Recent advances and future challenges. *Int. J. Gynecol. Obstet.* 2017, 138, 15–19.
14. World Health Organization. Comprehensive Cervical Cancer Control: A Guide to Essential Practice. Available online: https://apps.who.int/iris/bitstream/handle/10665/144785/9789241548953_eng.pdf (accessed on 19 June 2022).
15. Zimmer, M.; Bidziński, M.; Czajkowski, K.; Wielgoś, M.; Sawicki, W.; Sieroszewski, P.; Oszukowski, P.; Stojko, R.; Pityński, K.; Paszkowski, T.; et al. Schemat postępowania w skryningu raka szyjki macicy Polskiego Towarzystwa Ginekologów i Położników (PTGiP)—Wersja grudzień 2021 r. *Ginekol. I Perinatol. Prakt.* 2021, 6, 135–138.
16. World Health Organization. Comprehensive Cervical Cancer Prevention and Control: A Healthier Future for Girls and Women. Available online: https://apps.who.int/iris/bitstream/handle/10665/78128/9789241505147_eng.pdf;jsessionid=00AD6628CB0BCBF08B022A9E8097BBFsequence=3 (accessed on 12 June 2022).
17. Jin, J.; Sklar, G.E.; Oh, V.N.S.; Li, S.C. Factors affecting therapeutic compliance: A review from the patient's perspective. *Ther. Clin. Risk Manag.* 2008, 4, 269–286.
18. Lu, X.; Zhang, R. Impact of physician-patient communication in online health communities on patient compliance: Cross-sectional questionnaire study. *J. Med. Internet Res.* 2019, 21, e12891.
19. Khairkhah, N.; Bolhassani, A.; Najafipour, R. Current and future direction in treatment of HPV-related cervical disease. *J. Mol. Med.* 2022, 100, 829–845.
20. Bukowska-Durawa, A.; Luszczynska, A. Badania przesiewowe w kierunku raka szyjki macicy a bariery psychospołeczne postrzegane przez pacjentki. *Przegląd systematyczny. Contemp. Oncol.* 2014, 18, 153–159.
21. Najwyższa Izba Kontroli. Wiejska Droga do Ginekologa. Available online: <https://www.nik.gov.pl/aktualnosci/wiejska-droga-do-ginekologa.html> (accessed on 19 June 2022).
22. Dulak, M.; Jakubowski, B. Publiczny Transport Zbiorowy w Polsce. Studium Upadku. Available online: <https://klubjagiellonski.pl/2018/04/17/publiczny-transport-zbiorowy-w-polsce-studium-upadku/> (accessed on 19 June 2022).
23. Valanis, B.G.; Glasgow, R.E.; Mullooly, J.; Vogt, T.M.; Whitlock, E.P.; Boles, S.M.; Smith, K.S.; Kimes, T.M. Screening HMO women overdue for both mammograms and Pap tests. *Prev. Med.* 2002, 34, 40–50.
24. Luszczynska, A.; Goc, G.; Scholz, U.; Kowalska, M.; Knoll, N. Enhancing intentions to attend cervical cancer screening with a stage-matched intervention. *Br. J. Health Psychol.* 2011, 16, 33–46.

25. Politi, M.C.; Clark, M.A.; Rogers, M.L.; McGarry, K.; Sciamanna, C.N. Patient-Provider Communication and Cancer Screening among Unmarried Women. *Patient Educ. Couns.* 2008, 73, 251–255.
26. Spaczyński, M.; Nowak-Markwitz, E.; Januszek-Michalecka, L.; Karowicz-Bilińska, A. Profil socjalny kobiet a ich udział w Programie Profilaktyki i Wczesnego Wykrywania Raka Szyjki Macicy w Polsce. *Ginekol. Pol.* 2009, 80, 833–838.

Retrieved from <https://encyclopedia.pub/entry/history/show/64197>