

New discoveries in prevention sexually transmitted diseases and their consequences and transformation of a sexual mores in Poland – moral dimension of vaccination (for example of HPV infection)

Bogumiła Kempieńska-Mirosławska¹, Agnieszka Woźniak-Kosek²

¹Department History of Medicine, Pharmacy and Military Medicine Medical University of Łódź, Poland

²Department of Influenza Research, National Influenza Centre. National Institute of Public Health-National Institute of Hygiene. Warsaw, Poland

Author's address:

Agnieszka Woźniak-Kosek, Department of Influenza Research, National Influenza Centre. National Institute of Public Health-National Institute of Hygiene, Chocimska 24 Str, 00-791 Warsaw, Poland e-mail: kaj12@poczta.fm

Received: 2013.04.18 • Accepted: 2013.06.24 • Published: 2013.06.28

Summary

Since sexually transmitted diseases (STD), which include, among others, syphilis, gonorrhea (i.e. traditional venereal diseases) as well as infections caused by HIV and HPV are associated with sexuality, they represent a specific type of disorders. Some of them - HPV infection - are suspected of causing cancer, and more specifically cervical cancer, as well as oral and throat cancer. The history of these diseases embraces epidemiology, views on etiology and pathogenesis and risk factors. Additionally, it becomes apparent in search for biological methods of prevention, e.g. vaccination, an aspect referring to sexual customs, which have been considered in the context of morality for centuries, cannot be overlooked. The paper presents an analysis of this problem drawing on the example of HPV infections and their consequences (cervical cancer) in population of Poland. It was established in 1973 in Mainz under the auspices of the United Nations. This paper attempts to systematize the degrees and types of disasters and their effects as an important part of a disaster medicine.

Key words: Since sexually transmitted diseases (STD), HPV infections, traditional venereal diseases.

Up until 1980s sexually transmitted diseases included mainly syphilis, gonorrhea and chancroid, traditionally called venereal diseases. Even though their etiology differs, their common denominator is the transmission, namely through sexual contact. The link between sexual contacts and the emergence of these diseases was noticed quite early, i.e. in the late 15th century when an epidemic spread of syphilis took place. It was then, when an advance of syphilis began. It was tragic in its consequences as far as incidence

and mortality rates are concerned. According to some sources, syphilis reached Poland in 1495, and was called *franca*. It was predominantly the upper class (nobility, gentry or magnates) which was afflicted. Members of these circles tended to abuse alcohol as well as engage in extramarital practices. The following connections: alcohol abuse - venereal disease, and debauchery - venereal disease became associated with one another, yielding results in subsequent centuries in the form of scope and kind of preventive measures,

which were enforced until mid 20th century (1939). These measures relied mainly on actions undertaken by representatives of security and administrative services.

In the history of venereal diseases there were periods of their increased occurrence, which were related to socio-economical changes. The spread of venereal diseases was facilitated by, e.g. wars, migration, economic crises, development of large urban areas. Those phenomena paved the way for social pathologies, such as alcoholism, prostitution or extreme poverty to arise [1]. A number of authors who tackled the problem of socio-economic reasons for the spread of venereal diseases, classified them as social diseases. What caused the increase of risky sexual conduct was the intensification of social pathologies, which manifested themselves in poverty, unemployment, and progressing social stratification in both economic and educational respect. In 1930s E. Rosset referred to the problem of venereal diseases in Łódź in the following manner: “Social and physiological conditions create demand for prostitution. At the same time economic conditions necessitate the supply. A significant indication of how economy influences prostitution to develop, is the increased number of prostitutes in times of economic upheavals when unemployment builds up and vast number of people is condemned to destitution (...) venereal diseases are most common in larger environments, where demand and supply for prostitution is at its highest” [2]. In 1950s Z. Capiński also referred to this phenomenon in such a way “Among many other causes of venereal diseases, there is one which plays an especially important role, namely difficult living conditions, which on a larger scale result from social structure. What makes venereal diseases social diseases is their dependency on lifestyle and experiences of members of the society, organizational forms and changes, as well as the social structure which lead to certain layers of society being underprivileged with regard to the others.” [3]. The close relationship between the occurrence of venereal diseases and negative social phenomena, together with the lack of efficient therapeutic methods determined forms of preventive methods, which comprised both a fight against poverty, alcoholism and debauchery, and activities which focused on improvement of education. The major breakthrough in therapeutic medicine was the introduction of penicillin in

the 1940s. In Poland, the use of penicillin began in 1948. Even though it was effective in fighting syphilis and gonorrhoea (they were cured in a much shorter period of time), it was not sufficient for the complete elimination of the diseases. Social conditioning of their occurrence appeared to be particularly strong.

In Poland, after War World II, venereal diseases (mainly syphilis) assumed “enormous proportions, which were unheard of since the 19th century” [4]. The spread of diseases reached epidemic dimension, particularly on so called Recovered Territories, where 20-30% suffered from gonorrhoea, and 2% to 3% from newly-acquired syphilis [5]. The conducive factors included the war, troops passing by, migration, coupled with “the poverty of migrating communities, and the state of affairs left behind by the invader” [6]. A vivid representation of the situation was provided by the post-war Health Care Minister, Franciszek Litwin, who claimed that venereal diseases “spread in a horrifying manner, and the afflicted need to be counted in hundreds of thousands. The number of the sick is like an enormous snowball that comes rolling down from the west and covering different parts of the land” [5]. In order to contain the problem, an action on a large scale, called “W”, was launched. The undertaking, enforced in 1948, embraced organizational, legislative, preventive-therapeutic, and propagandistic maneuvers, which were realized on different levels of public administration, as well as health care distribution system. The action was based on epidemiological assumptions whose goal was to break the epidemiological chain through the identification of contraction points, in tandem with compulsory, but free, treatment. At the beginning, the success, which was expressed through almost twenty times lower clinical attack rate achieved during only 3 years (1948-1950), seemed quite obvious. Further, the even more pronounced drop in attack rate, especially in case of syphilis, in years 1951-1954 could easily consolidate the belief that problem had been contained. In 1954 the lowest attack rate was noted. However, as of 1955, the number of new syphilis started to increase again, particularly within large urban areas, like Warsaw or Cracow, as well as in industrial and seaside regions. Years 1955-1958 brought more than a doubling of syphilis’ incidences [4]. It was believed that the decline in epidemiological cri-

teria was caused by, among others, the fact that “W” action, which was a rather costly enterprise, was granted less funding due to the arising economic problems. In addition, social pathologies, such as alcoholism and prostitution, were still not resolved, despite them being characterized by the authorities of the time as common traits of bourgeois society. Others, as the reasons why the situation deteriorated considered the rapid changes, i.e. the rise of city agglomerations, migrations caused by job hunting, gradual shift in the way women were regarded. They ceased to be viewed as wives and mothers alone, and began to emerge as working women. This alternation gave rise in turn to deviation from traditional model of a big family, to the small family paradigm. The majority of people afflicted by syphilis were the inhabitants of the cities. The sudden population growth in the cities was induced by migration from the countryside, and was particularly intensified in 1952-1956. The newcomers set out not only to improve their material status, but also they sought entertainment, frequently in the form of alcohol and random sexual encounters. As it was described then “60-70% of incidences stem from acquaintanceships started by drinking vodka. Pioneer enrollments for State Agricultural Farm on the countryside are being penetrated by degenerated elements, passionately fond of vodka and nighttime entertainment”[7]. As the family bonds became looser, spending time in large groups of people, allowed for more free sexual behaviors. Even more so because “a part of those individuals ridded themselves of moral values before they could get accustomed to new rules of conduct in the extraordinary life situations.”[8]. An important cause for the attack rate of venereal diseases to rise in the second half of 1950s was, as claimed by some, “A complete lack of education for the youth in primary, secondary and trade schools, as well as on the higher education level, in respect of information about health and threat that venereal diseases pose”[9]. An increase in attack rate for the age range of 15-19 served as a proof of that. Particularly affected was the working, and not studying, part of the group. Another bout of the disease came in the second half of 1960s. It was then that the attack rate started to be on the rise in order to reach the greatest value in 20 years. On hand a number of random encounters was higher, and on the other, because venereal diseases were considered embarrassing, seeking a doctor’s ad-

vice was delayed and subsequent treatment were much delayed.” [10]. Despite the progressing industrialization of the countryside, conspicuous and steady discrepancies between incidence rates in the cities and on the countryside could be noticed. In that respect, urban areas such as Warsaw, Łódź, Wrocław, and harbor cities such as Gdańsk or Gdynia were disadvantaged. One of the reasons why this was the case, could be the fact that metropolitan standards were being absorbed “in almost every respect save for the sex life sphere, where the old morals hold the rein.”[11] In response to the progressing incidence rate in the 1960s, in the early 1970 a new project aimed at battling syphilis and gonorrhea was initiated. Its implementation yielded positive outcome, in the sense that the incidence rates for both diseases were indeed lower by the end of 1970s. Such state of affairs was retained until late 1980s. In 1990s another outbreak of the diseases occurred. At this point the world’s medicine was faced with AIDS threat, together with sexually transmitted HIV virus which causes AIDS. A list of venereal diseases, also characterized as sexually transmitted diseases, or sexually transmitted infections, was extended to include human papillomavirus infection (HPV) which attacks not only reproductive organs, but also skin, respiratory system and digestive tract, both in the case of men and women. As it appeared, HPV is one of the most common infections of female anogenital region. It is estimated that ca. 10% of female population around the world is infected with the virus, while ca. 75% before reaching age 50 will be infected at least once [12]. The greatest number of HPV infections is developed in case of women below 30 years of age. The majority of these infections are transient, and they disappear on their own, often not causing any symptoms. Therefore, women may be unaware of the infection. In the light of this rather mildly looking image of the infection, what made HPV famous was a suspicion that it may be related to cervical cancer which currently ranks third as most frequently occurring malignant tumor in women worldwide. It is worth mentioning that the biggest number of incidences (80% of them) takes place in developing countries [13]. In Poland, cervical cancer ranks fifth as the most frequently occurring malignant tumor in women.

The connection between HPV and cervical cancer sparked much interest inasmuch it had

been attempted to find a link between gonorrhea and syphilis, and female genital organs cancer. In 2008, The Nobel Prize in Medicine was awarded for the discovery of oncogenic human papilloma viruses causing cervical cancer. The Prize was granted to the German researcher, professor Harald zur Hausen, who started his research in the 1970s. Research on the role of HPV in pathogenesis of papillary skin lesions, as well as oncogenic characteristics of the virus was also conducted in Poland. It was, among other representatives, Stefania Jabłońska, professor of dermatology from Clinical Department of Dermatology in Warsaw, together with professor Gerard Orthem of Pasteur Institute in Paris, who engaged in similar investigations [14]. Contemporary studies are based on tracking viral DNA in the biopsied cells substantiated the connection between the virus (its highly oncogenic strain) and cervical cancer. This discovery led to a firm establishment of the thesis that HPV infection a necessary, but not sufficient, condition for the tumor to develop [15]. The cause-and-result relationship between HPV infection and cervical cancer laid foundation for commencement of research focusing on finding a vaccination against HPV. This method was supposed to be of key significance for preventive treatment in case of this tumor. In June 2006, first vaccination was FDA approved for clinical application in USA. A few months later EMEA issued a permission for the vaccine to be used in 25 countries in the European Union. In Poland, the vaccine against HPV was registered in November 2006. In 2007, Polish Society for HPV Prevention published its Recommendations regarding the application of quadrivalent preventive vaccine against HPV [16]. Girls between 11 and 12 years of age, who were not yet sexually active, were indicated as a main target group. According to Recommendations: “The longest observation period of individuals subjected to the quadrivalent vaccine against HPV amounts to 5 years. In this time, the vaccine proved completely effective”.[16]. Effectiveness of the vaccine in preventing cervical cancer is dependent on the duration of post-vaccinal immunity. In a paper published in 2009 it was demonstrated that in case of one vaccine the duration of immunity was a somewhat more than 6 years, while in case of another it was only 5 years [17]. The studies bear out that in order to achieve a tangible decrease in cervical cancer morbidity it is vital for the immunity to be main-

tained for at least 15 years. At present, it is not possible, to verify whether the registered vaccinations fulfill this requirement. Long-term findings are still incomplete. Hence, it is not feasible to predict how long the post-vaccinal immunity is retained. The newest research shows that the vaccine protects from the disease for at least 9 years [18]. In a number of statements on HPV vaccines, it is emphasized that there is little data determining whether it is safe to apply them after a longer period of time has passed since the inoculation.

In spite of it being clearly stated in Recommendations that “the most crucial elements of HPV preventions is relatively late sexual initiation as well as monogamous partnerships”, in Poland the vaccines are being promoted as a part of preventive medicine projects, which are funded by local governments. Such are being undertaken by more and more municipalities and districts which advertise the initiative, contrary to what Agency for Health Technology Assessment (AOTM) advises, as a vaccination against cervical cancer. Due to expression of this kind, a peculiar type atmosphere has been created. Taking into account inherent to human nature fear of cancer, advocates of vaccinations instill a sense of confidence in possibility of preventing the disease whatsoever through this simple procedure. Such an approach constitutes not only a semantic abuse. Firstly, vaccinations do not guarantee protection from all of oncogenic types of HPV virus. What is more, it is still uncertain how long the post-vaccinal immunity lasts. According to WHO, an evaluation of vaccine’s influence on premalignant lesions and cervical cancer is expected to take at least 10 years. Currently, it is not possible to observe the actual impact on cervical cancer’s morbidity and mortality on the grounds that the period of time in which tests have been conducted is too limited [19].

If within social consciousness appeared a concept which equals vaccine against HPV virus with immediate elimination of cervical cancer, that could lead to consolidation of detrimental attitudes and behaviors, e.g. avoiding pap tests which amounts to the genuine obstacle in preventive medicine projects. Additionally, it is likely that yet another shift in sexual conduct will take place, as it happened before, in the 1960s, with an introduction of effective oral hormonal contraceptives onto the market [20]. Since the use of

contraceptives substantially diminished the risk of unwanted pregnancy, it also enhanced a sense of security, thereby causing people to engage in sexual contact with a greater number of partners which was a part of sexual revolution of the 1960s. Discontinuation in use of condoms that were deemed redundant in terms of contraception, caused quicker and easier spread of venereal diseases, against which condoms would have offered protection.

Sexual behaviors constitute a vital factor both in venereal diseases incidence rate, and HPV infection rate, and in turn in cervical cancer morbidity. Studies show that risk factors in case of HPV infection and incidence of cervical cancer include not only early sexual initiation, but also the number of sexual partners. These factors intertwined together, i.e. the sooner one goes through initiation, the more partners they are likely to have. Early initiation, especially before age 16, adds to the chances of developing cancer even before reaching age 30. In Poland, as of late 1980s, the age of sexual initiation has diminished by almost one year. For those who born between 1977-1978 it is between 18 and 24 years of age[21]. Nowadays, the average age of sexual initiation in Poland ranges between 17 and 18, and it is still dropping. The risk of developing cervical cancer show negative correlation with the age of sexual initiation. It is probable that biological aspects are responsible for this correspondence: cervical ectropion in young women or not fully developed mechanisms which are supposed to protect the cervix from infections[15]. It is indeed the case that women who have more sexual partners or engage in intercourse with those who've had many previous partner run a greater risk of having cervical cancer. The risk is also bigger for women who have sexual contacts with men whose other companions suffered from cervical cancer. Further, it has been also pinpointed that women who take oral contraceptives for a period longer than 5 five years are at the greater risk of developing the cancer[22]. Further drop in the age of sexual initiation among Polish youth has been observed. Not it resembles the numbers characteristic for western countries, that is below the age 16. Simultaneously, the age when women decide to start families and have children increases (in 2009 women had their first child at 27.5 on average). The situation at hand forces girls and young women to extend the use hormonal

means of contraception before the first pregnancy for more than 10 years.

As mentioned above, for a few years now, the vaccine against HPV virus has been eagerly promoted as an antidote for cervical cancer. In Poland, vaccinations against HPV are inscribed into Polish Immunization Programme by Chief Sanitary Inspectorate as recommended vaccines, which means that they are not funded from the budget of the Ministry of Health. However, more and more often, claims coming from different backgrounds propose that these vaccines not only be subsidized from the central public budget but also inscribed into the National Program Against Cancer Diseases for the time span 2006-2015 [18]. Others go even further in that they suggest HPV vaccination should be included in the list of compulsory vaccinations. Numerous municipalities and districts embarked on projects whose goal was to battle cancer diseases. Similar programmes which are being enforced in many countries around the world inspire discussion on an ethical dimension of vaccinations against HPV.

Medical literature of 2011 offers the first published report on the effects of vaccinations against HPV which took place in 2007-2009 in Australia. [23]. The results appear to be optimistic. During the time span of 3 years since the vaccination system was introduced, the number of new cases of dysplasia diagnosed in women younger than 18 dwindled [24]. That outcome is often regarded as an argument in favor of implementing such programmes on a wider scale. More cautious approach is presented by Agency for Health Technology Assessment (AOTM). Consultative Council by AOTM in its justification for an assessment of preventive projects submitted by local authorities states: "It has not been unambiguously proved that vaccinations lower the risk of cervical, vulvar or vaginal cancer morbidity. Nevertheless, concurrence of HPV with those tumor has been confirmed.

Although a widespread campaign supporting vaccinations against HPV has been launched, it may be thy case that a fair amount of reluctance with regard to application of the substance is met, due to insufficient proof that the vaccines are actually efficient, and safe after longer a use, in the fight against cervical cancer. Moreover, an issue

of promoting negative sexual behaviors has been addressed. It is maintained that advocating vaccination at a very early age (11-12 or even 9 years of age) may be viewed as endorsing early sexual initiation and multiplicity of partners, which in turn might lead to infections and cervical cancer. What follows is the idea that vaccinations are supposed to replace customary values referring to sexuality seen from an ethical and moral angle. In this context, vaccinations' promotion may come across as progressing medicalization of society, as some sociologists call it. Ivan Illich, who championed this idea already in the 1970s, in his *Limites of medicine. Medical nemesis* put forward a notion that contemporary medicine, coupled with its technical and technological advancements, becomes a means of social control. As he claims, medicine can be exploited for not health-related purposes such as fulfilling one's political or business agenda. It could be said that people are no longer in control of their own health [25]. Other scholars, such as M. Foucault, who coined a term "biopolitics", have also concentrated on the issue of the state control through medical treatment. Currently, the way in which state controls public health assumed the name of health policy. One of the means to exercise the influence is an implementation of preventive medicine projects

which are designed to minimize the frequency of diseases' incidence through controlling the risk factors. In principle, partaking in these programmes is voluntary.

Nonetheless, there is a growing tendency, still on the level of proposals, for a "transition" from voluntariness to compulsion, which is particularly pronounced in the case of having recourse to public funding of health care. The reason behind that may stem from psychological obligation anchored in fear of disease. The next stage relies on legal obligation which is realized through inclusion of particular vaccination into the list of obligatory procedures. In a similar vein, a discussion in reference to vaccines against HPV ensued. The procedure represents a dilemma how to reconcile what is effective with what is good. Unanimity of a medical standpoint (considered in terms of effectiveness) and moral one (considered in terms of right and wrong) is hardly achievable. Even more so because the treatment in question touches upon ethical principles which constitute the value system of a given time, thereby becoming a tool in a cultural (r)evolution. With that in mind, increasingly more distinct objections pertaining to medical interventions should not be passed over in silence.

References:

- Berner W., Zwalczenie chorób wenerycznych w Łodzi na przełomie XIX i XX wieku, „Archiwum Historii i Filozofii Medycyny”, 2000, t. 63, nr 3-4.
- Rosset E., Prostytucja i choroby weneryczne w Łodzi, Łódź 1931.
- Capiński Z., Zwalczenie chorób wenerycznych (metodyka pracy), Warszawa 1954.
- Banaszkiewicz H., Epidemiologia kiły, Warszawa 1962.
- AAN, Ministerstwo Zdrowia w Warszawie 1944-1960, Gabinet Ministra – Wydział Prawny, sygn. 644/3, k. 81-83.
- AAN, Ministerstwo Zdrowia w Warszawie 1944-1960, Gabinet Ministra – Wydział Prawny, sygn. 644/3, k. 84-86.
- Rost W., Pijaństwo i choroby weneryczne pod obstrzałem dzielnicowej służby zdrowia, „Służba Zdrowia”, 1957, Nr 40.
- Miedziński F., Dlaczego wzrost chorób wenerycznych, „Służba Zdrowia”, 1956, Nr 13.
- Stępniewski T., Wzmocnij czujność na froncie kiły! „Służba Zdrowia”, 1956, Nr 3.
- Marcinkiewicz A., Regulacje dotyczące chorób wenerycznych – dobro publiczne ponad prawami jednostki, „Zdrowie Publiczne”, 1999, nr 2.
- Kolankowski J., Miasto a wieś w szerzeniu się chorób wenerycznych, „Przegląd Dermatologiczny”, 1967, nr 12.
- <http://www.eurocytology.eu/static/eurocytology/pol/cervical/LP1ContentMcontA1.html>.
- Nowakowski A. M., Kotarski J., Rak szyjki macicy w Polsce i na świecie w świetle danych o zapadalności i umieralności, „Przegląd Epidemiologiczny”, 2011, nr 65.
- Błaszczak M., Dziewięćdziesiąt lat Polskiego Towarzystwa Dermatologicznego, „Przegląd dermatologiczny”, 2011, 98.
- Nowakowski A. M., Kotarski J., Czynniki ryzyka raka szyjki macicy i możliwości pierwotnej profilaktyki, „Przegląd Epidemiologiczny”, 2011, nr 65.
- Rekomendacje Polskiego Towarzystwa Profilaktyki Zakażeń HPV dotyczące stosowania czterowalentnej szczepionki profilaktycznej przeciw HPV typów 6, 11, 16, 18, „Przewodnik Lekarski”, 2007, nr 2.
- Harper D. M., Currently approved prophylactic HPV vaccines, *Expert Rev Vaccines*, 2009 Dec;8(12).
- „Czas na zmianę strategii w prewencji raka szyjki macicy – wywiad z prof. Alicją Chybicką, „Puls Medycyny”, 2012, nr 12 (251), 5 września 2012.

19. Opinia Prezesa Agencji Oceny Technologii Medycznych nr 46/2012 z dnia 16 kwietnia 2012 o projekcie programu zdrowotnego „Program zdrowotny przeciwdziałania rakowi szyjki macicy, rakowi sromu, rakowi pochwy oraz brodawkom płciowym wywołanym przez wirusy HPV w Kozienicach na lata 2012–2015 (wirus HPV typ 6,11, 16, 18)”, realizowanym przez Miasto Kozienice).
20. Jarząbek G., Pawlaczyk M., Friebe Z., Z historii metod planowania rodziny i antykoncepcji, „Ginekologia Praktyczna”, 2006, nr 3.
21. Jarczewska D. Ł., Wczesna inicjacja seksualną – grupy ryzyka i konsekwencje, „Życie i Płodność”, 2010, nr 2 w: <http://www.zycieiplodnosc.pl/kwartalnik/arttykul/49>.
22. Cervical cancer and hormonal contraceptives: collaborative reanalysis of individual data for 16 573 women with cervical cancer and 35 509 women without cervical cancer from 24 epidemiological studies, International Collaboration of Epidemiological Studies of Cervical Cancer. *The Lancet* 370. 9599 (Nov 10–Nov 16, 2007).
23. Brotherton J. M. L. i wsp.: Early effect of the HPV vaccination programme on cervical abnormalities in Victoria, Australia: an ecological study. *Lancet*, 2011; 377.
24. Mrukowicz J., Szklanka do połowy pełna czy do połowy pusta, w: <http://www.badaniaklinicznepolsce.pl/o-badaniach-klinicznych/nowe-horyzonty-farmakoterapii/szklanka-do-polowy-pelna-czy-do-polowy-pusta/>.
25. Illich I., Limits of medicine. Medical nemesis: the expropriation of health, Marion Boyars Publishers, London 1976.

