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Public knowledge on influenza and influenza vaccines

Adrianna Gorecka¹, <https://orcid.org/0000-0003-1977-712X>, gorecka.adrianna@wp.pl

Dagmara Gorecka², <https://orcid.org/0000-0003-0139-6580>, dagmara.gor@wp.pl

Bartłomiej Zaremba³, <https://orcid.org/0000-0002-3255-2745>,
zaremba.bartek28@gmail.com

Małgorzata Wieteska¹, <https://orcid.org/0000-0002-1566-7559>, malgosia.wieteska@onet.eu

Katarzyna Urbańska³, <https://orcid.org/0000-0003-3301-0179>, kaasiaurbanska@gmail.com

¹Students' Research Group at the Department of Epidemiology and Clinical Research Methodology, Medical University of Lublin, Radziwiłłowska Street 11, 20-080 Lublin

²University of Live Sciences, student, Akademicka Street 13, 20-950 Lublin

³Medical University of Lublin, student, Raławickie Avenue 1, 20-059 Lublin

Abstract

Introduction and purpose. Influenza is the most common infectious disease reported in Poland. It is caused by a virus, which is transmitted through respiratory droplets. Vaccines are prime and most effective way to prevent the disease and its complications, but only 4,15 Polish people are vaccinated against influenza, which ranks Poland on one of the last places in Europe.

Material and method. The aim of the study was evaluation of public knowledge about influenza and influenza vaccines.

Results. The majority of respondents have basic knowledge about influenza, still most of them (almost 70%) have never been vaccinated against the flu. The main reason of that situation is their confidence about their good health and lack of necessity to get a vaccine. 92% of people points fever as the main symptom of influenza. Some people confuse symptoms of the flu

with those of a cold of Covid-19 infection. More than 23% of people does not believe in the efficiency of the vaccine. Lack of sufficient knowledge about that issue is mentioned by 15% of the respondents. Polish people describe their knowledge in the middle of the 5-point scale, while most of them never learned about it.

Conclusions. Still too few people in Poland decide to take a vaccine against influenza especially in age group below 65 years old. Reliable education should be of great importance for everyone, especially teachers and healthcare workers. Covid-19 had an impact on the number of people who decided to get the vaccine in 2020.

Key words: influenza; flu; vaccination; influenza vaccine; Covid-19

1. Introduction

Influenza, commonly called a flu, is the most common infectious disease reported in Poland. It is caused by a virus. There are four types of influenza viruses: A, B, C, D. Only the first three attack people. Type A, mainly AH1N1 subtype, is responsible for 20% of infection cases. Type C induces asymptomatic influenza. Since season 2010/2011 in Poland coinfections can be observed, which mean that one person is infected with two different types of influenza virus. The disease is generally transmitted through respiratory droplets while coughing, sneezing or speaking. Influenza is usually transmissible from one day before first symptoms, which means an infected person can spread the virus before realizing they are ill. According to the estimated, one person spreads the disease to four other people.

Epidemic season for influenza occurs from October to September the following year, but the most cases are observed between October and April, with the peak of incidence in January, February and March.

According to the government estimates, in the last - 2019/2020 - epidemic season, influenza virus infected 3 873 136 polish citizens. Hospitalization was necessary in 17 317 cases. Sixty-five people died, most of which were above 65 years old. There is a 13,2% decline in the number of cases comparing to the previous season (2018/2019), when 4 491 879 people got infected. That noticeable decrease was associate with the outbreak of Covid-19 pandemic in Poland in March 2020. Between March and May 2020 five times less influenza cases were reported. It is due to social isolation and social distance. Moreover, children, who can easily transmit the virus, stayed at home instead of attending kindergartens and schools.

Primary and most effective way to prevent influenza and influenza-associated complications is annual vaccination. In Poland there are mainly quadrivalent inactivated vaccines containing two A-type and two type-B viruses and administrated via intramuscular injection. Since 2019 also a live attenuated influenza vaccine, administrated nasally. Vaccines are admissible for the whole population from 6 months and especially recommended for high-risk groups that are: people with reduced immunity ex. after transplantations, for people with haematological and cardiological disorders, children with congenital heart defects, people above 55 years old and all those working or residing with large number of other people (health workers, resident of nursing homes). When it comes to percentage of population vaccinated, Poland ranks in one of last places in Europe. For season 2019/2020 only 4,15% of Polish people are vaccinated.

Majority of them are people above 65 years old, 15,1% of them are vaccinated, while the percentage in other age groups oscillates below 2%.

2. Purpose

The aim of this study was to assess public knowledge on the issue of influenza and influenza vaccines. We tried to find out what can be the reason of such a low percentage of Polish population vaccinated against the disease.

3. Material and method

A survey questionnaire consisting of 16 questions was prepared. The first part of the survey referred to general information about the respondent, while the second one was directly related to the topic of the study, describing people's knowledge, attitude and experience with influenza and influenza vaccines. The survey was created using tools provided by Google (Google forms) and eventually shared online via Polish internet groups between June 16th to 28th 2021.

The aim of the two initial questions was collecting general data about the respondent. First question was to define the gender (male or female). The second one was an open question and was about the age of the respondent.

Starting from the third to fifth question, next part of the questionnaire was designed to gather more specific information about respondents' knowledge regarding the topic of the study. Question number three determined whether a person knows the microorganism responsible for causing influenza. Question number four was to evaluate if a person is able to properly indicate the most common way of transmitting the illness. Fifth question was a multiple-choice one. It contained several symptoms and the respondent was asked to choose those typical for influenza.

The following part, from question six to eleven, was to explore one's experience with influenza and vaccines against the disease. Question number six identified whether a person had ever been vaccinated against influenza. Seventh question was directed only to those who answered 'yes' for the previous inquiry and checked if the vaccine was taken regularly, once a year. The aim of question eight was to evaluate the reasons behind the decision of not taking the vaccine. It was a multiple-choice question with possible reasons, though it also contained additional place to write somebody's own, additional options. It was directed to respondents who had never been vaccinated. On the contrary, question number nine was directed to another part of respondents. It asked what had been the reason of do taking the vaccine and was constructed comparatively to question eight. Question ten was to check if the person is going to take the vaccine in the future (yes, no, maybe).

We decided to add a question eleven to this part of the survey due to the recent global situation with Covid-19 pandemic. We asked whether that situation had any influence on person's attitude towards the issue of influenza vaccines.

The last but not least part of the questionnaire contained of two questions. The twelfth one asked if the person would get vaccinated were the cost of the vaccine covered by the

employed. Question thirteen evaluated the attitude of the respondents towards obligatory vaccinations against influenza among health care workers.

The last part of the survey was created in aim of estimating the level of society's knowledge about infectious diseases. Question fourteen checked if there had been at least one lesson regarding this issue during the education process, while in question fifteen respondents were asked to measure their own knowledge in five-point scale.

There was also a place for additional remarks, though it was not obligatory.

4. Results

Ninety adult Polish people took part and properly filled in the survey. Majority of them were woman (75,6%), men being the rest of the study group. The age of the respondents ranged from 18 to 81 years old, the average was 27,7 years old and median age was 24 years. The vast majority (91,1%) of respondents correctly selected virus as the microorganism causing flu; the second most common option was bacteria (6,7%). No other variants were selected by the respondents. Two people (2,2%) chose the answer 'I do not know'. Answers to the next questions were also mostly proper; 96,7% people indicated droplet way as the most common for influenza transmission.

The most frequently indicated symptoms were, in sequence: high fever (92,2%), muscle pain (88,9%), shivers (80%), joint pain (67,8%), headache (54,4%). Moreover, some people also mentioned sneezing, watery runny nose, blocked sinuses, wet cough, diarrhoea, vomiting or chose an answer "I do not know".

Almost seven out of ten respondents (68,9%) were never vaccinated against influenza. Only 7% from the group of people who took such vaccine at least once in a lifetime (2/28) do it regularly. What is more, 40% of all respondents are not going to get vaccinated in the future, while almost quite as many (36,7%) have not yet made the decision.

The most frequent reason to get vaccinated against influenza that the respondents mentioned was a fear about getting ill. On the second place there was family and friends encouragement. Other reasons mentioned in the survey were, respectively, caring for the health of the loved ones, past post-influenza complications or severe course of the disease and the presence of chronic diseases.

On the other hand, the most common motive against influenza vaccination turned out to be a respondents' belief that they rarely get ill, so they do not need the vaccine. Among other reasons respondents mention their lack of attention towards regular vaccination. Almost one of four respondents (22,7%) do not believe in the effectiveness of the vaccinations. 21,2% of them are afraid of possible side effects that may occur after the procedure. What is more, 15,2% of people claim that they do not have sufficient knowledge about influenza and the vaccines. Too high price of the vaccine is a reason why 6,7% of the respondents restrain from vaccination. More than 1/3 of all the respondents declare that they would get vaccinated against influenza were the cost covered by the workplace, 33,3% of them voted against such option.

We decided to check what may be the reason of such a low percentage of vaccine-followers and asked a question “Have you ever had classes about infectious diseases during your education? Twenty two point three percent of the respondents did not recall such classes, 37,8% denied it and 38,9% learned about that issue during their education process. In a five-point scale, where one is minimal and five is very good knowledge about infectious diseases, respondents assess their own knowledge on 3,00.

Twenty-five people (27,8%) is of the opinion that vaccination should be obligatory for health-care workers, more (34,4%) respondents say the opposite. The rest has no opinion on this matter.

The last question was placed in the questionnaire according to the current epidemic situation related to Covid-19 pandemic. It was observed that it had an impact on some people’s decision regarding influenza vaccination. On the one hand, 10,00% of people who had not got a vaccine before the pandemic decided to do so in 2020, while on another, 4,44% of people who had got a vaccine before pandemic were not eager or able to get it the previous year.

5. Discussion

The knowledge of Polish people seems to be on quite a good level. Majority of respondents knew the right answers when it came to the way of transmission and the microorganism responsible for causing influenza. The results were comparable with other Polish survey study [1], where 93% of the people believed that flu is transmitted through air. As symptoms characteristic for influenza respondents in our study mentioned high fever, muscle pain and shivers. High temperature and muscle pain were also mentioned in [1], together with runny nose. The last symptom was sometimes present in our survey too, which indicate that people often do not differentiate influenza from cold. The knowledge about the symptoms was much better than in other Polish study [2], where 87% of students declared the lack of the knowledge about the flu symptoms. Reasons for not taking influenza vaccine were also comparable between those two studies with the main explanation being good health.

A lot of people did not believe in the effectiveness of the vaccine [1,2], which may be result of poor education about the issue of infectious diseases and their prevention at schools. Our study showed, that low coverage of influenza vaccination in Poland may be a result of patients’ insufficient knowledge and false believes about the vaccine.

It is worth mentioning, that the cost of vaccine, which is recently about 40PLN, is still too high for some of Polish citizens. However, many age and health groups can get a refund for the vaccine.

More than 30% of respondents have taken a vaccine at least once in a lifetime which is more than the population data provided by National Institute of Public Health-National Institute of Hygiene [4]. It can be the reason that our survey included only 90 people. In Poland, only 6% of healthcare workers are vaccinated against influenza [4], while 28% of our respondents think that those vaccinations should be mandatory for this group versus 38% opponents. Some representatives of healthcare system [5] also support the idea of mandatory influenza vaccination.

6. Conclusions

In Poland, comparing to European data, still too few people are vaccinated and are going to get vaccinated against influenza. Regular vaccination should be a part of good medical practice. More effort should be put to provide reliable knowledge to the society from the earliest level of education. Covid-19 pandemic made some people change their decision and take the vaccine.

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