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The Role of Nurses and Carers' Attitudes towards Childhood Vaccination: Human Rights Perspective

Introduction

The obtained research results make it possible to determine the approach of carers of young children to preventive vaccinations concerning the occurrence of childhood infectious diseases.¹

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¹ Deborah A. Gust, Natalie Darling, Allison Kennedy, and Ben Schwartz et al., „Parents with Doubts About Vaccines: Which Vaccines and Rea-

They point to the vital need to educate young carers about preventing infectious diseases and effective opposition to vaccination movements.² Nurses can and should play an essential role in this respect.³

The last 200 years have seen the most significant development of preventive vaccinations.⁴ Their introduction influenced the control or absolute elimination (in several regions of the world) of the nine most dangerous infectious diseases: smallpox, diphtheria, tetanus, polio, yellow fever, rubella, mumps and measles.⁵ In the nineteenth century, epidemics and pandemics of various infectious diseases caused half of the deaths and permanent disabilities in children and young people.⁶ The prevalence of these diseases in Europe and the USA has been reduced significantly by 95–99% after mandatory vaccinations.⁷

The protective vaccination procedure is carried out with the help of vaccines, preparations administered to induce protective immunity against infections.⁸ Under medical standards, protective vaccination (immunization) involves administering antigens to elicit an immune response in the form of antibodies: oral vac-

sons Why," *Pediatrics* 122, no. 4 (2008): 718–25, doi:10.1542/peds.2007-0538 2008;122:718–725.

² Simon J. Hambidge, "The Challenge of Reaching Adolescents to Promote Health Care," *Academic Pediatrics* 13 (2013): 184–185.

³ Ulrich Heininge, "An Internet-based Survey on Parental Attitudes towards Immunization," *Vaccine* 24 (2006): 6351–6355.

⁴ Francis E André, "Vaccinology: Past Achievements, Present Roadblocks and Future Promises," *Vaccine* 21 (2003): 593–5.

⁵ Doren D. Fredrickson, Terry C. Davis, Connie L. Arnould et al., "Childhood Immunization Refusal: Provider and Parent Perceptions," *Family Medicine* 36 (2004): 431–439.

⁶ Eugene J Garganosa et al., "Impact of Anti-vaccine Movements on Pertussis Control: The Untold Story," *Lancet* 351 (1998): 356–6.

⁷ Anna Jarząb, Michał Skowicki, and Danuta Witkowska, "Subunit Vaccines-antigens, Carriers, Conjugation Methods and the Role of Adjuvants," *Advances in Hygiene and Experimental Medicine* 67 (2013): 1128–43.

⁸ Eva Borràs, Àngela Domínguez, and Miriam Fuentes et al., "Parental Knowledge of Pediatric Vaccination," *BMC Public Health* 9 (2009): 154.

cines, injected vaccines and immunization of the body. In this way, defense mechanisms are created that are ready to fight live microorganisms.⁹

The diagnostic survey method, which is most often used in quantitative research, was used in this work. The study was performed on a specially selected representative group from a specific general population group. In this work, a questionnaire was used as a research tool. The survey was carried out among the carers of vaccinated children who were also patients of the Clinic of Occupational Medicine and Family Medicine 'Medical' in Sandomierz. The survey was conducted in February 2019 with the help of the questionnaire entitled "The educational role of nurses and carers' attitudes towards preventive vaccinations." Ninety-eight questionnaires were distributed to conduct the survey. Participation in the survey was voluntary and the respondents were selected at random. Carers of vaccinated children were informed about the purpose of the study and its anonymity.

The questionnaire prepared for the needs of this study contained 50 questions whose purpose was to indicate all the structural and functional features of the examined issue. It was divided into four parts, marked with the alphabet letters from A to D. Each part concerned a different aspect (Table I).

The number of questions in each part of the questionnaire ranged from 7 to 22, depending on the content. This division of the questionnaire into parts and questions allowed for a thorough analysis of the main topic addressed in the diagnostic survey.

Human rights and childhood vaccination

In the light of United Nations regulations, vaccinations serve the implementation of the human right to health. The World Health

⁹ Teresa Widomska-Czekajska, and Jolanta Górajek-Jóźwik (ed.), *Encyklopedia dla pielęgniarek i położnych* (Warszawa: PZWL, 2010): 902-903; Teresa Kuziara, "Szczepienia chronią zdrowie i życie," *MPiP* 4(2013): 48.

Organization (WHO)¹⁰ stresses in many documents that the educational role of nurses in the implementation of vaccinations, especially in children, is invaluable.¹¹ The nurses' task is to remedy child carers' fears and uncertainties and provide knowledge about vaccinating children.¹² The process of educating carers about preventive vaccinations should start as early as the first days of a child's life.¹³ The nurses' responsibility is to inform carers about new vaccines, procedures, and strategies for their introduction.¹⁴ Preventing infectious diseases through preventive vaccination is a critical aspect of health policy for every country. In the light of Art. 12 of the International Covenant on Economic, Social and Cultural Rights, national authorities are obliged to prevent, treat and combat epidemic, endemic, occupational and other diseases to achieve the whole exercise of everyone's right to enjoy the highest achievable level of health protection.¹⁵ Most healthcare systems include

¹⁰ Robert Tabaszewski, "Rola ius cogens i soft law Światowej Organizacji zdrowia w kształtowaniu praw i wolności człowieka," in *Ius cogens – soft law, dwa bieguny Prawa Międzynarodowego Publicznego*. Księga dedykowana profesorowi Uniwersytetu Jagiellońskiego Kazimierzowi Lankoszowi, ed. Milena Ingelevič-Citak, Brygida Kuźniak (Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego, 2017), 390–401.

¹¹ Robert Tabaszewski, "Health as a Value in the Integration Policy of European and East Asian Countries. Historical and Legal Perspective," *JoEIH* 1 (2019): 99–110.

¹² Gail Wade, "Nurses as Primary Advocates for Immunization Adherence," *MCN The American Journal of Maternal/Child Nursing* 39, no. 6 (2014): 351–6.

¹³ Douglas J. Opel, James A. Taylor, Chuan Zhou et al., "The Relationship Between Parent Attitudes about Childhood Vaccines Survey Scores and Future Child Immunization Status: a Validation Study," *JAMAPediatr.* 167 (2013): 1065–1071.

¹⁴ Agata Salwa, "Health Education of Parents in the Field of Immunization," *Journal of Education, Health and Sport* 7 (2017): 240; Andrzej Bednarek, "Prophylaxis of Pneumococcal Infections In Children – Significance Of Vaccinology Education Of Nurses," *Nursing in the 21st Century* 48 (2014): 46–47.

¹⁵ International Covenant on Economic, Social and Cultural Rights, U.N.Doc. A/6316(1966); Robert Tabaszewski, *Prawo do zdrowia w systemach ochrony praw człowieka* (Lublin: Wydawnictwo KUL, 2020), 94.

the Alma-Ata Declaration recommending universal vaccination of children against major infectious diseases.¹⁶ Also, the provisions of European law for the full implementation of the right to health require the provision of protective vaccination to ensure the complete implementation of Art. 25 of the Universal Declaration of Human Rights.¹⁷

The WHO regulations regarding the role of nurses in immunizing children are taken into account by the vast majority of European countries, including Poland.¹⁸ The system of preventive vaccinations in Poland introduced in the 1930s is subject to constant change related to medical progress and the current epidemiological situation.¹⁹ The most important part of the system is creating and implementing the Protective Vaccination Schedule (containing a list of mandatory and recommended vaccinations, with an indication for vaccines).²⁰ The Protective Vaccination Schedule is announced by the Chief Sanitary Inspectorate once a year in the Official Journal of the Minister of Health.²¹

Polish provisions regarding preventive vaccinations, including compulsory vaccinations for children, consider the WHO recommendations incredibly complicated. Art. 68(4) of the Polish Constitution obliges public authorities to combat epidemic diseases, including infections and infectious diseases in humans.²² The Act on combating infections and infectious diseases in humans²³ provides

¹⁶ International Conference on Primary Health Care: Declaration of Alma-Ata, 1978.

¹⁷ U.N.Doc A/810 at 71. Paris, 1948.

¹⁸ WHO, *Global Vaccine Action Plan 2011-2020* (Geneva, 2013).

¹⁹ Stanley Plotkin, "History of Vaccination," *Proc Natl Acad Sci USA* 11, no. 34 (2014): 12283-12287.

²⁰ Jolanta Kraśnicka, Elżbieta Krajewska-Kulak, Krystyna Klimaszewska et al., "Mandatory and Recommended Vaccinations in Poland in the Views of Parents," *Human Vaccines and Immunotherapeutics* 14, no. 8 (2018).

²¹ Dorota Cianciara, and Wojciech Zgliczyński, "Immunization System of Children and Youth in Poland: Selected Issues," *Studia BAS* 122, no. 2 (2015): 1-5.

²² The Constitution of the Republic of Poland, Journal of Laws 1997, No. 78, item 483, as amended.

²³ Act on combating infections and infectious diseases in humans of De-

that preventive vaccination may be carried out by a doctor, nurse, full-time specialist, midwife and school hygienist with appropriate qualifications. The Regulation on obligatory vaccinations sets out persons or a group of persons who should undergo protective vaccinations against the above-mentioned infectious diseases and the age of persons and other circumstances which require that they undergo protective vaccination.²⁴

Control over safety in the Polish preventive vaccination system belongs to the National Institute of Public Health, the National Institute of Hygiene and the National Institute of Medicines. Vaccination in Poland is supervised by the Minister of Health, who issues relevant legal acts.²⁵ The Office must register vaccines used in Poland for Registration of Medicinal Products, Medical Devices and Biocidal Products, and the European Medicines Agency. The law prohibits administering vaccine preparations that do not have the confirmed safety and efficacy demonstrated by a series of clinical trials.²⁶ Vaccines are biological preparations very sensitive to transport and storage conditions. They should be stored and transported at a temperature between +2 °C and +8 °C from production to use, which determines its effectiveness.²⁷

In Poland, there is an obligation to undergo vaccination against 13 infectious diseases. These include: diphtheria, tetanus, whooping cough, tuberculosis, *Haemophilus influenzae* type b (Hib), *Streptococcus pneumoniae*, measles, mumps, rubella, chickenpox, poliomyelitis (acute anterior spinal cord inflammation), poliomyelitis, hepatitis B virus (HBV) and rabies.²⁸

²⁴ cember 5, 2008, Journal of Laws 12008, No. 234, item 1570, as amended.
 Regulation on preventive vaccinations of August 18, 2011, Journal of Laws No. 182, item 1086, as amended.

²⁵ Monika Bigos, "Szczepienia ochronne, preparaty immunostymulujące," in *Zagrożenia Zdrowia Publicznego*. ed. Andrzej Denys (Warszawa: Wolters Kluwer Business, 2014): 240.

²⁶ *Ibidem*.

²⁷ Hambidge, "The Challenge of Reaching Adolescents," 184-185.

²⁸ Act on infectious diseases and infections of September 6, 2001, Journal of Laws No. 126, item 1384, as amended.

There is a group of people who evade their obligation to preventive vaccination²⁹. These include: persons who have been notified of the obligation to carry out preventive vaccination but have not applied for it; persons who have not previously presented a vaccination certificate; persons who have not provided any contraindications to their implementation or for temporary deferral.³⁰ There is also an organized movement against compulsory vaccinations in Poland, asking the Polish Parliament to ban compulsory vaccinations for children.

The results of the conducted research

The survey involved 196 carers of vaccinated children. They included 178 women (90.8%) and 18 men (9.2%). The average age of the surveyed carers ranged from 31 to 40 years, which accounted for 52% of respondents. They declared secondary education (51% of respondents) and higher education (35.8%). Respondents most often lived in rural areas, small villages of up to 1,000 inhabitants (53% of respondents). Most carers (77.6% of respondents) made a living from gainful employment and were married (77.6% of respondents). Carers of vaccinated children lived with their spouses and the children. The respondents became carers for the first time at the age of 21 to 25 years (41.8% of respondents), and the number of children in their families ranged from one to six. In the study on the vaccination of children, 93% of the surveyed carers declared that a vaccination nurse had talked to them about this topic. Moreover, 79.6% of carers also declared that a vaccination nurse had explained what vaccination was. When asked about the knowledge of legal acts regulating preventive vaccinations in Poland, 52% of carers claimed that they knew such legal provisions, and 54.1% of respondents had good knowledge of the vaccination schedule.

²⁹ Regulation on Good Distribution Practices of March 13, 2015.

³⁰ Wioletta Rostkowska, "Nieszczepione dzieci w placówkach POZ," *Magazyn Pielęgniarki i Położnej* 12 (2016): 37.

When asked about the difference between recommended and obligatory vaccinations, 89.8% of carers said they knew what that meant. When asked about the source of their knowledge about vaccinations, 89.8% of respondents indicated a nurse at the vaccination point, and 49% indicated a primary care physician or pediatrician. Carers were also asked about a nurse's willingness to provide information about vaccinations. In 99% of cases, they answered that nurses had eagerly answered these questions. The nurses' knowledge about preventive vaccinations was good because 75.5% of the surveyed carers declared that there had been no situation where a vaccination nurse had not known the answers to their questions. Carers found that the educational role of nurses regarding vaccinations lasted from the birth of the child up to 18 years of age (92.9% of respondents).

When asked about the availability of leaflets about vaccines, 70.4% of carers of vaccinated children said that they could always obtain and read these. Moreover, 98% of the surveyed carers had received information from a nurse about a change in the vaccine composition. Vaccination complications were known to 67.3% of the carers surveyed. It was shown that 80.6% of carers observed no vaccine adverse reactions.³¹ Skin redness was the most common adverse vaccine reaction in vaccinated children.³² Moreover, 96% of respondents assessed that a nurse provided information about adverse vaccine reactions in an accessible and transparent way. The surveyed carers were most often afraid of complications/ side effects after vaccine administration (89.2% of respondents).

Information on new, additional Preventive Schedules organized by District Sanitary-Epidemiological Stations had been provided to carers by phone in 67.3% of cases. Respondents declared that they had taken part in such a schedule (43.5% of respondents)

³¹ Monika Pieszka, Wioletta Waksmańska, and Halina Woś, "Knowledge of Immunization Among Parents of Children Under Two Years of Age," *General Medicine and Health Science* 22, no. 3 (2016): 221.

³² Agnieszka Mamoń, *Szczepienia ochronne dzieci i dorosłych* (Kraków: MOIPI, 2009), 74-75.

and it had been a Pneumococcal Vaccination Schedule organized by the City Hall in Sandomierz.

Moreover, 100% of respondents perceived vaccination nurses as good educators in the field of vaccinations.

The attitudes of carers subjected to the study towards the current vaccination schedule were divided in half. Namely, 51% of respondents claimed that the mandatory vaccination schedule should vaccinate children, and 49% claimed that recommended vaccinations should be included in such a schedule (Figure 1).

When asked about the choice of mandatory vaccinations, 28.6% of carers did not answer this question, and 19.4% saw no need for other additional vaccinations. Furthermore, 33.8% of respondents considered a smaller number of punctures to be an essential factor in choosing recommended vaccinations, followed by a child's safety (29.1% of respondents).

When asked about the possibility of using recommended vaccinations, 80.6% of respondents declared such a willingness.

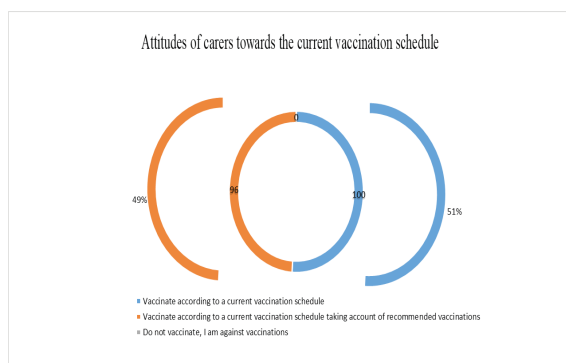
All the surveyed carers had their children vaccinated (100% of respondents). When asked about resisting vaccinations, 96% declared that they had never evaded vaccinations. According to carers, vaccines do not weaken the natural immune system (68.4% of respondents). Carers considered the reduced risk of infectious diseases the main advantage of preventive vaccinations (88.1% of respondents).

The evaluation of vaccination nurses' work was very positive. Namely, 91.8% of respondents considered it reliable and conscientious and 8.2% assessed it as positive. Most carers of vaccinated children rated the work of vaccination nurses as excellent (90.8%) and good (9.2%). Moreover, 89.8% of them evaluated their cooperation with them as very good.

Furthermore, 89.8% of respondents assessed vaccinations performed on their children by nurses as very good. The comfort of carers in the vaccination room was considered high by 92.9% of respondents. Hygienic and sanitary conditions in the vaccination room were found to be suitable by 25.7% of respondents, and 73.3% of respondents found medical equipment to be good.

Table I Division of the questionnaire

of the questionnaire		
	What is this part of the questionnaire about?	Number of questions
PART A	Respondent's particulars and social and living conditions	7
PART B	Questions about the educational role of nurses	22
PART C	Questions regarding the attitudes of carers towards preventive vaccinations	8
PART D	Questions regarding the assessment of the role of a nurse by carers of vaccinated children	13
Total		50

**Figure 1**

Attitudes of carers towards the current vaccination schedule. The complete circle indicates respondents' answers expressed in numbers and the open circle shows their answers expressed in percentage points

When asked about a medical examination before vaccination, 100% of carers replied that their children had always been examined. During vaccination, carers had never been asked to leave the vaccination room, which 100% of respondents answered. The date of a child's vaccination had been set in advance for the carers, which 94.9% of respondents confirmed. Vaccination nurses' work-

ing hours were considered to be convenient by 99% of respondents. Moreover, 81.6% of carers declared that they had signed consent before a medical examination. An entry in the child's health book was declared by 98% of respondents. The obligation to carry out preventive vaccinations was assessed positively (47.9% of respondents) and very positively (44% of respondents). Forty-two respondents decided to comment on the Schedule of Compulsory Protective Vaccinations, only 43% of the entire group.

Carers primarily pointed out that: 1) the Preventive Vaccination Schedule makes it possible to reduce the occurrence of infectious diseases in children; 2) protective vaccinations are needed for safety and children's health; 3) all recommended vaccinations should be financed by law.

Discussion

Protective vaccinations belong to the system of protecting human health and life. They allow the elimination of dangerous infectious diseases. The history of preventive vaccinations goes back to the tenth century and hard work on the development of new vaccines continues today. The primary task of vaccinations is to eliminate the existence and spread of infectious diseases and the emergence of new disease strains.

The subject of preventive vaccinations, both obligatory and recommended, is often discussed and analyzed in Polish specialist literature. Most publications relate to research on vaccinations in several scientific contexts. Knowledge about preventive vaccinations had changed from the time when the first vaccinations began to be performed. Only the leading prophylactic role of vaccination, which protects against dangerous infectious diseases, remains unchanged.

Our survey has shown that carers consider vaccination nurses as good educators and the first and primary source of knowledge about vaccinations: 100% of the surveyed carers declared so. Salwa confirms the conclusions arising from this study. Medical staff,

particularly nurses and primary care physicians, are the essential educators in preventive vaccinations, and their actions and professional experience influence the decisions taken by carers regarding preventive vaccinations.³³ In their study, Bednarek and Zarzycka emphasize that medical personnel, particularly nurses, should undergo continuous training in preventive vaccinations because they are the most influential educators in the prophylactic use of preventive vaccinations against dangerous infectious diseases.³⁴

Falenczyk et al. make similar conclusions in their work, stressing that vaccination nurses and doctors are the most reliable source of knowledge about preventive vaccinations.³⁵ The conducted survey concerning preventive vaccinations suggests that carers of vaccinated children have a large amount of knowledge regarding vaccinations.

However, Orzel-Nowak et al. do not confirm the results of this study. According to their research, carers have a mediocre amount of knowledge about preventive vaccinations.³⁶ However, Pieszka et al. claim that the level of knowledge of carers of vaccinated children is mainly satisfactory.³⁷ A vaccine nurse's knowledge was assessed as high. Carers of vaccinated children confirmed that a vaccination nurse had known 75.5% of answers to the questions they had asked. Carers had had their first conversations with a nurse about preventive vaccinations for their children immediately after the birth of their children.

When assessing nurses' knowledge about preventive vaccinations, Rozalska et al. concluded that the knowledge of the nurses

³³ Salwa, "Health Education," 240.

³⁴ Anna Bednarek, and Danuta Zarzycka, "Need and Assumptions of Modern Education on the Example of Immunization," *Probl Hig Epidemiol.* 96, no. 1 (2015): 2-6.

³⁵ Kamila Fałenczyk, Małgorzata Piekarska, Agnieszka Pluta et al., "Factors Influencing the Attitudes of Parents towards Children's Immunization," *Progress in Medicine* 39, no. 6 (2016): 381-383.

³⁶ Anita Orzel-Nowak, Natalia Bińkiewicz-Śmiałek, Lucyna Ściśło et al., "Attitudes and Knowledge of Preschool Children's Parents about Preventive Vaccinations," *Nursing in the 21st Century* 53, no. 4 (2015): 98.

³⁷ Mamoń, *Szczepienia ochronne*, 74-75.

examined was varied and insufficient, stating that nurses should train and update their knowledge.³⁸ In our study, carers of vaccinated children were optimistic about the obligation of preventive vaccination. All the carers surveyed had their children vaccinated.

Orzel-Nowak et al. show that carers have their children vaccinated by the Protective Vaccination Schedule.³⁹ However, Faleńczyk et al.⁴⁰ indicate that carers firmly (98%) accept the obligation to have their children vaccinated. In our study, parents of vaccinated children follow the vaccination schedule, but only half know their legal basis due to unclear regulations and the lack of access to legal information about vaccinations. Unfortunately, no reference to the results obtained has been found in the literature because studies on the correlation between access to legal information on vaccinations and the satisfaction of children and carers have not yet been conducted.

Conclusions

Carers of vaccinated children considered vaccination nurses at the Clinic of Occupational Medicine and Family Medicine 'Medical' in Sandomierz as good educators with high knowledge of preventive vaccinations. Thanks to their actions, carers' attitudes towards preventive vaccinations were very positive and they were happy to have their children vaccinated by the current vaccination schedule. They did not fully know the legal grounds for vaccinating, but they knew what compulsory and recommended vaccinations were. Carers also believed that public funds should cover all recommended vaccinations.

³⁸ Elżbieta Różalska, Anna Kaczyńska, Jarosława Belowska et al., "Measuring Nurses' Knowledge of Preventive Vaccination," *Nursing in the 21st Century* 51, no. 2 (2015): 16.

³⁹ Orzel-Nowak, Bińkiewicz-Śmiałek, Ścisło et al., "Attitudes," 98.

⁴⁰ Faleńczyk, Piekarska, Pluta et al., "Factors," 381-383.

ABSTRACT

The article's objective is to demonstrate the educational role of nurses as entities obliged by national and international law to shape careers' attitudes towards childhood vaccination. The article considers the specificity of provisions regarding vaccinations carried out in Poland and the context of the work of medical personnel from Poland. The study shows that parents have general knowledge about the compulsory and recommended vaccinations for children, but only half know the applicable provisions underlying their implementation. Nurses have comprehensive knowledge about vaccinations regarding WHO standards.

Keywords: role of a nurse, medical law, vaccinations, childhood, parents, attitudes towards vaccination, WHO