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Parents' Refusal to Vaccinate Their Children: An Increasing Social Phenomenon Which Threatens Public Health

Carmen Liliana Barbacariu^{a,*}

^aPhD, Teaching Assistant, Faculty of Medicine, Grigore T. Popa University of Medicine and Pharmacy, Iasi, Romania,
General practitioner, Individual Practice, Pacurari no. 6 Str., Iasi, post code 700537, Romania

Abstract

Over the last few years, many controversies related to immunization safety have arisen, leading to an increasing number of parents who refuse to vaccinate their children. This study investigated the reasons behind child immunization safety concerns and the parent's sources of information. The anti-vaccination movement had a negative impact on parents' immunization behaviour. The numerous controversies and statements surrounding immunization side effects caused an erosion of public trust in the efficiency and safety of vaccination programs. Whether vaccination is voluntary or compulsory, each option faces complex ethical challenges because humans depend on each other in infectious diseases matter.

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1. Introduction

Vaccines play an important role in reducing infection in a population because they are the main weapon in the fight against the common diseases that we once feared. Thanks to vaccination programs, smallpox has been eradicated and we rarely see children suffering from polio palsy, diphtheria complications, or death and brain damage from measles. For example, 1 in 200 polio infections leads to irreversible paralysis, and among those paralyzed, 5% to 10% die when their breathing muscles become immobilized; there is no cure for polio, it can only

* Corresponding author. Tel.: +40722583612.
E-mail address: lilianabarbacariu@gmail.com,

be prevented (World Health Organization, 2013). Diphtheria vaccinations have proved important because even with treatment, about 1 out of 10 diphtheria patients dies due to airway blockage, myocarditis, or severe pneumonia with respiratory failure. Unfortunately, “measles is one of the leading causes of death among young children even though a safe and cost-effective vaccine is available. In 2012, there were 122,000 measles deaths globally—about 330 deaths every day” caused by complications associated with the disease (World Health Organization, 2014).

Vaccines are used to prevent the development of serious diseases in a host and are made of weakened or killed forms of bacteria or viruses, their toxins, or one of their surface proteins. These active components (the antigens) included in vaccines induce the immune response in the host's body without passing on the real diseases. Vaccines may also contain additional components, such as preservatives (phenoxylethanol, phenol and thiomersal used to prevent contamination with fungi or bacteria), additives (to maintain the vaccine's effectiveness by keeping the antigen stable during storage), adjuvants (various aluminium salts to enhance the immune response to a vaccine), and traces of other components (egg proteins, yeast, cell culture fluids, antibiotics, or inactivating agents left over from the process used to produce the vaccine) (Bumboiu and Bocsan, 2005, p.39).

The terms *immunization* and *vaccination* are often used interchangeably, but their meanings are not exactly the same. Vaccination represents the process through which a vaccine is deliberately administered to an individual so that his immune system can prepare to fight a future infection. Immunization refers to the process by which a person becomes immune to a disease, either through vaccination or by contracting and fighting the disease naturally (Bumboiu and Bocsan, 2005, p.32).

“Optimal response to a vaccine depends on multiple factors, including the type of vaccine, the age of the recipient, and immune status of the recipient. Recommendations for the age at which vaccines are administered are influenced by age-specific risks for disease, age-specific risks for complications, age-specific responses to vaccination, and potential interference with the immune response by passively transferred maternal antibodies” (Centers for Disease Control and Prevention, 2011, p. 4).

In Romania, The Ministry of Health, in collaboration with The National Institute of Health, The National Centre for Infectious Disease Control and Prevention, and the Romanian Society of Pediatrics (RSP), establish a recommended schedule, free of charge, to provide routine administration of vaccines to children within the National Immunization Program (NIP). The legal framework for the NIP is established by The Ministry of Health's law No. 422/2013, and the schedule is permanently upgraded according to the World Health Organization's (WHO) general recommendations on immunization (RSP, 2012). The number of immunizations recommended for children in the first two years of life has increased over time. In Romania, the recommended immunization schedules for 2014 included free vaccinations for 10 infectious diseases: HB (hepatitis B), BCG (Bacille de Calmette et Guérin—a vaccine against tuberculosis), DTaP/DT (diphtheria-tetanus-acellularpertussis/diphtheria-tetanus), IPV (inactivated polio vaccine), Hib (*Haemophilus influenzae* type b), and MMR (measles-mumps-rubella). Simplifying immunization schedules by combining multiple vaccines into a single syringe has numerous positive effects. Reducing the number of injections leads to a lower level of trauma for the infant and higher rates of compliance with complex vaccination schedules (Marshall et al., 2007).

When a critical percentage (90-95%) of a population is immunized against a contagious disease, spread of the disease is reduced and most members of the community are protected. Even those who are not eligible for certain vaccines (such as young infants, pregnant women, or immune-compromised individuals such as organ transplant recipients, cancer patients, AIDS patients) or whose immune systems do not respond sufficiently to vaccination, receive some protection. This phenomenon is known as *community immunity* or *herd immunity* and it provides protection to individuals who cannot develop immunity. This indirect measure of protection raises an important issue about individual and public values (Sheriff et al., 2012). When immunization rates fall below these thresholds (90-95%), the risk of infectious outbreaks increases (measles and pertussis outbreaks have been attributed to declining herd immunity) (Fine, Eames, and Heymann, 2011).

No vaccine offers complete protection, and like any medical procedure it comes with risks, even if serious side effects are mostly rare. Concerns regarding the safety of vaccines have existed in Romania since the first smallpox immunization campaigns in the eighteenth century, when only mandatory vaccination could stop the epidemic (Triscas, 2013). Over time, the public's specific concerns have changed as new vaccines have been developed and a lot of research regarding the safety of vaccines has been conducted (CDC, 2011; WHO, 2013).

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