



Dropout of Vaccination Among Iraqi Children

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ABSTRACT

Immunization has been a successful method of preventing and controlling life-threatening infectious diseases since the 20th century. About 2-3 million child deaths are avoided annually through vaccination. Despite increasing vaccination rates worldwide, many children in developing nations still miss their vaccinations. Therefore, many children are still vulnerable to the Expanded Program on Immunization (EPI) targeted diseases. Missed opportunities for vaccination (MOVs) occur when people who are eligible for vaccination visit a medical facility but do not receive the necessary vaccinations. Therefore, vaccination has the opportunity to achieve more if missed vaccination opportunities (MOVs) are removed and global immunization coverage increases. A narrative review was conducted to summarize vaccination missing among Iraqi children, and factors affecting the vaccine coverage rate.

Keywords: vaccination, dropout, Iraqi, children

IMMUNIZATION DROPOUT

Everyone benefits from disease prevention through immunization, which has good effects on health, the economy, and society on a global, national, and community level. (Hobani & Alhalal, 2022). Immunization is a process that is initiated artificially in which a person's immune system gets protected from disease as a result of the production of protective factors for the exclusion of a specific antigen following the introduction of the immunogenic. The immune response occurs when the immune system acts outside of the molecule for the microbe. Because of immunological memory, the immune system acquires the ability to respond promptly to a re-encounter with the new substance after this procedure. This is the main function of acquired immunity. The macro-organism obtains the capacity for self-defense independently under the regulated delivery of the immunogenic; this process is known as active immunization. Active immunization develops a highly specific temporary duration of varying duration or permanent immunity, depending on the type of antigen. T-lymphocytes, B-lymphocytes, and antibodies made by B-lymphocytes are the most significant immune system components that develop as a result of immunization. The T- and B-lymphocyte memory cells support the immune system's quick response to an antigen exposure. The delivery of serums or immunoglobulin containing pre-made antibodies is known as passive immunization. Immunization is achieved by a variety of methods, the most common is vaccination (WHO/UNICEF, 2005), (Hassan, 2020), (Mohamud et al., 2020). Vaccination is regarded as one of the most successful, safe and cost-effective public health intervention for reducing child morbidity and mortality from infectious illnesses. (Rahman, 2013), Annually, vaccination is thought to avert more than three million deaths (Jaca et al., 2018). As well, Nearly 20% of mortality in children under five years old are caused by diseases that can be avoided by vaccination globally (World Health Organization, 2019) (Asiegbu et al., 2020). Despite this, not all developing countries have maintained their global commitment to vaccination (Rahman, 2013). In certain countries, less than one out of every three children is immunized during their first year of life, (WHO, 2018), (Asiegbu et al., 2020). However, every year around three million people worldwide die from diseases that can be averted with immunizations; half of those who died were infants and children. (Abd-alabass & Faraj, 2021), (Vora et al., 2009). There are currently estimates that 3 million children under the age of five are saved from death each year because to immunization. However, vaccination rates have stabilized, leaving 19.5 million child unvaccinated or with insufficient immunizations, putting them at risk for the mortality and morbidity associated with diseases that can be averted by vaccination (Harrison et al., 2020).

The Expanded Programme on Immunization (EPI), which was started in 1974, has improved child survival and health around the world. It sought to provide at least 95% of infants with the basic immunization series (Muslim et al., 2017), (Ogbuanu et al., 2019). Since 1983, the WHO Expanded Program on Immunization (EPI) by Global Advisory Group (GAG) has advised program managers to investigate ways to reduce missed immunization opportunities. A direct strategy to increasing vaccination coverage is to immunize all eligible individuals at every opportunity (Muslim et al., 2017), (Hutchins et al., 1993). In order to attain and maintain high immunization coverage throughout the ensuing ten years, the World Health Organization (WHO) actively encourages member nations to adhere to the Missed Opportunities for Vaccination (MOV) Strategy (Kaboré et al., 2020). When people who are eligible for vaccination visit a health institution but do not receive the necessary vaccinations, this is known as a missed opportunity for vaccination (MOV) (Genetu et al., 2021; Suleman et al., 2021; Etana & Deressa, 2012). According to recommendations from the World Health Organization (WHO), children are deemed completely vaccinated when they have had the following vaccinations: BCG for TB, three doses of the pentavalent vaccine (DPT-Hep B-Hib), PCV for polio, two doses of Rota virus, and a measles shot. Before the age of 12 months, children who missed at least one dose of these immunizations are thought to have had an incomplete immunization (Etana & Deressa, 2012) (Genetu et al., 2021).

Despite global improvements in vaccination coverage over the last ten years, advancements in the management of vaccine-preventable diseases, and the execution of the Global Vaccine Action Plan 2011-2020 (GVAP); regional and local disparities in coverage continue (Crocker-Buque et al., 2017). Low coverage continues to be a problem due to a variety of circumstances, including lost vaccination chances. Additionally, despite an improvement in immunization coverage, a significant number of children in impoverished countries continue to skip their immunizations (Ogbuanu et al., 2019; Genetu et al., 2021).

According to (Crocker-Buque et al., 2017), a number of variables, such as a lack of resources, conflicting health goals, subpar management of health systems, and insufficient monitoring and control, contribute to regional and local disparities in vaccine coverage. Thus, community awareness-building initiatives, health education, mother feedback gathering, and including community members in the administration of care could all lead to an increase in service consumption (Mutua et al., 2016; Fite & Hailu, 2019).

It is also likely that missed chances do not occur primarily for financial reasons in lower-income countries since the majority of people receive vaccines for free through national

immunization programs, even when there are additional financial hurdles to attending an immunization clinic (Sridhar et al., 2014). Additionally, studies have indicated that mothers' attitudes and knowledge, their access to immunization services, and the density of health professionals all have a role in how well mothers perceive immunization services (Asiegbu et al., 2020). The role of religion, inadequate cold chain equipment, resistance to routine immunization, political and health worker factors, stakeholder and community attitudes, poor communication, funding limitations, and a shortage of vaccines and immunization supplies are additional factors affecting the better uptake of routine immunization in Nigeria (Ophori et al., 2014; Asiegbu et al., 2020). Additionally, the WHO stated that negative health worker attitudes, such as a lack of immunization screening, were the primary causes of lost opportunities in their global evaluation of MOI (missing opportunity immunization) studies (Hutchins et al., 1993; Muslim et al., 2017).

Review by the WHO of 79 Missed Opportunities immunization research (59 from developing countries) found that 32% of people had MOI (Martinez et al., 2014) (Li, 2020) and 12% in Saudi Arabia's capital, Riyadh (Bahari et al., 2012).

Iraq is one of the nations that implemented a regular vaccination schedule years ago, but despite this, children are still frequently affected by infectious diseases like whooping cough and tuberculosis, which were supposed to be eliminated or reduced significantly by such a vaccination program, as has been the case in many developed nations for decades (Mahmood, 2012). However, there is a large disparity in vaccination coverage and a sizable number of unvaccinated children under the age of one in Iraq, which poses a risk for the spread and maintenance of infectious illnesses despite the country's significant decline in vaccine-preventable diseases (Hassan, 2020). Lack of knowledge about immune-preventable diseases, lack of health insurance, living in rural areas, extremes of maternal age, having more children, having them in a higher birth order, having fewer mothers who have completed high school, working outside the home, having more people living in the household, and only having lived there for a short time (less than a year) are some of the factors that have been identified in the literature as vaccination barriers. The pace of displacement over the past three years is almost without precedent (Hassan, 2020), (Etana & Deressa, 2012). Such a review, which was conducted in Baghdad, Iraq, on the prevalence of missed opportunities for immunization among children under the age of five who attended PHCCs, found that the following factors were most frequently associated with missed opportunities: lack of child immunization screening, false contraindications, child immunization in another PHCC, forgotten immunization cards, crowding, and vaccine unavailability, mother ignorance and ineffective

communication between health professionals in PHCCs and child health care providers, mother forgetfulness accounted for 30% of the causes for only receiving a partial vaccine (Muslim et al., 2017). In addition, social issues and child health problems were the main causes of incomplete immunization and immunization delays in Basra (Samad et al., 2006).

Nearly 50% of the reasons for vaccination failure or low coverage rates in the Duhok governorate were due to a lack of knowledge and desire (MOH, 2007). Studies carried out over the world have shown how important health education is in increasing immunization rates. People can determine their risk status, the requirement for specific vaccines, and the potential benefits of immunization with the use of educational initiatives (Shefer et al., 1999). (Rahman, 2013).Parent education enhances the likelihood that their children will receive vaccinations and decreases missed opportunities (Altinkaynak et al., 2017). Explained by the fact that educated parents were more aware about importance of vaccination status of their children (Maroof, 2018), (Muslim et al., 2017).

In 2020 - Only two-thirds of children in Iraq between the ages of 12 and 23 months are fully immunized against avoidable diseases, and less than half of those have measles protection. The United Nations Children's Fund (UNICEF) warned that routine vaccinations in Iraq had been missed (UNICEF and WHO, 2020)(Alhaddad et al., 2022), due to the COVID-19 pandemic disrupting regular health services or causing vaccine disinformation (UNICEF and WHO, 2020). During the COVID-19 pandemic, all vaccination coverage rates (VCRs), with the exception of BCG, have dramatically decreased in Iraq. Iraq's recent low vaccination rates are a result of a long-running conflict and underinvestment of healthcare facilities. As well, the ongoing COVID19 pandemic's impact on immunization programs is anticipated to significantly lower measles coverage by 20%, putting the most vulnerable children at danger of disease outbreak (Alhaddad et al., 2022).

Interventions such as educational sessions, performance feedback, outreach via postcards, phone calls, and home visits, creating printouts of each child's vaccination record, changing practice guidelines (i.e., vaccination without legal guardian's signature), communicating with patients about the significance and availability of vaccines, communicating with parents about the importance and accessibility of vaccines, parent education, and case management were all assessed (Jaca et al., 2018).When looking at the information provided on missed opportunities, it is evident from the data provided by (Lin et al., 2016) that those who did not receive the intervention, i.e. communication on the importance and availability of vaccines, had a higher likelihood of missing opportunities for vaccination.

Moreover, the results from the study reported by the authors (Rodewald et al., 2014) show that those who were exposed to the intervention were less likely to miss out on immunizations. Lost opportunities can be reduced by implementing interventions (such as patient surveillance, outreach, and physician urging) in tandem rather than individually. In addition, because delayed vaccines may create health problems later on, it's important to remind parents to use every available opportunity to catch up. The government of Iraq should also consider scheduling regular public immunization drives. Although there are a number of factors that affect the vaccine coverage rate (VCR), we recommend more research be done to explore additional possible determinants, such as socioeconomic status and birth rank (e.g., baseline parameters like maternal literacy).

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