

Original Article

Chapter One: Level of Nurses Knowledge Regarding Adverse Events Post Immunization at the Health Care Centers in the Northwest of Jerusalem District

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Abstract

Background: Childhood immunization against common childhood diseases is the most powerful public health strategy to keep children healthy. It has been the most cost-effective public health intervention, saving an estimated 2–3 million lives around the world each year. However, because no vaccine is 100% safe and effective, so adverse events post-immunization may occur. These adverse events are any untoward medical occurrences that occur following immunization and do not necessarily have a causal relationship with the use of the vaccine. Moreover, if not rapidly and effectively dealt with it, it can undermine confidence in a vaccine and ultimately have dramatic consequences for immunization coverage and disease incidence.

Purpose: The purpose of this study was to determine the level of nurse's knowledge regarding adverse events post immunization at the health care centers in the northwest of Jerusalem district.

Methodology: Study designs: A descriptive cross-sectional study design was used. Study population: The study population consists of all of community health nurses who are working at health care centers in the northwest of Jerusalem district. Study sample: The study sample was consisted of community health nurses that working in this area and who did not administer the vaccination. A convenience sampling method was used to collect data, so, the number of nurses who enrolled in our study was 40 nurses. Setting: This study was conduct at health care centers in the northwest of Jerusalem district

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from 1st of December to the end of December of 2022. Study tools: The study tool that used in our study was the questionnaire tool. Study strategies for analysis: The collected data was analyzed by the Statistical Package for Social Sciences (SPSS) Version (28).

Results: The results of the research show that more than two-thirds of nurses were female and held Bachelor's Degree, and more than half of nurses aged 21-30 years old and have 1-4 years old experience. Almost two-thirds of nurses 62.5% have good knowledge, while 37.5% of nurses have poor knowledge, also it found that the nurses who work in governmental clinics have more knowledge score than others nurses ($p < 0.001$).

Recommendations: This study recommended to establish an educational program in health care centers to improve the nurse's knowledge regarding adverse events post-immunization and also for nursing students in universities and colleges. Furthermore, routinely validate staff's knowledge and competencies regarding vaccine administration and its adverse events were suggested.

Keywords: Adverse events post immunizations; Immunization; knowledge; Community health nurses; Vaccination; AEFI

Introduction

Childhood immunization against common childhood diseases is most powerful public health strategy to keep children healthy [1]. It has been the most cost-effective public health intervention, saving an estimated 2-3 million lives around the world each year and is critical for reducing the global child morbidity and mortality [2]. Despite the positive results of the immunization program, a rising percentage of people appear to believe it is hazardous and unneeded. These people may avoid specific vaccines, postpone vaccinations, or take vaccines but are unsure about it [3]. Vaccine hesitancy has been identified by the World Health Organization as one of the major global health issues for 2019. Also, WHO, confirm that global coverage has dropped from 86% in 2019 to 83% in 2020, an estimated 23 million children < 1 years of age not receiving basic vaccines in 2020, the highest number since 2009 and the number of completely unimmunized children has increased by 3.4 million [4]. At the same time, several studies have found that accepting, postponing, or refusing vaccination is associated with a number of environmental, social, individual, and vaccine-specific factors [4].

One of these factors is unfriendly vaccination attitudes that represent a serious risk for public health [5]. This phenomenon, known as "hesitancy," has impacted the public views of vaccination as a safe and efficient method of disease prevention, resulting in reduced rates of vaccine coverage and increased rates of preventable epidemics and outbreaks [6]. Despite a vast range of safe and efficient vaccinations in use worldwide, this rising tendency indicates that the public wants greater assurances about vaccination or immunization. Vaccination confidence, which refers to attitudes and beliefs about the advantages and safety of vaccines, as well as trust in vaccine providers, such as healthcare workers (HCWs), health authorities, and policymakers, is an important psychological correlate of vaccination behavior [7].

However, health care workers represent a trustful source of health-related information. Previous studies have shown that nurses' attitudes toward vaccines directly affect patients' decisions about the acceptance of vaccines [8]. Furthermore, studies have shown that parents perceive health care providers especially nurses as the most reliable and important factor affecting their decisions to uptake vaccines for their children or themselves [9]. Considering these findings, nurses must be well-prepared to communicate evidence-based information with patients and their relatives and improve knowledge and attitudes toward vaccination [6]. In Saudi Arabia, pediatricians and nurses who usually recommend vaccination; thus, they have a key role in immunization promotion. Therefore, educating future doctors early in their career is an essential component of delivering knowledgeable medical graduates, who improve vaccine acceptance among the public [10]. So, the community health nurses should have good knowledge of adverse events post immunization and how it can be managed in a successful way.

So, according to World Health Organization, the adverse event that happen post immunization is any untoward medical occurrence which follows immunization and which does not necessarily have a causal relationship with the usage of the vaccine. If not rapidly and effectively dealt with, it can undermine confidence in a vaccine and ultimately have dramatic consequences for immunization coverage and disease incidence.

Moreover, a serious adverse event post immunization that meets one or more of the following criteria is a fatal outcome: life-threatening, results in hospitalization, prolongation of an existing hospitalization, persistent or significant disability/incapacity, a congenital anomaly/birth defect. So, any medical event which requires intervention to prevent one of the outcomes listed above may also be considered serious [11].

On other hand, a non-serious adverse events don't cause death, life-threatening illness, hospitalization or prolongation of hospitalization, permanent disability, congenital anomaly, or birth defect (Vaccine Adverse Event Reporting System [12,13].

Problem statement

From the field of training courses, the research team noticed that there is a lack of nurses' knowledge regarding adverse events post immunization at the health care centers in the northwest of Jerusalem district.

The research team was understood that immunization, like any medicine, requires special attention because no vaccine is (100%) safe and effective [14] and according to World Health Organization, "there is no such thing as a perfect vaccine which protects everyone who receives it", so harmful effects might occur, and it might range from mild to severe effects that may be fatal."

As a result, the researchers team considered adverse events following immunization to be a critical issue that must be successfully managed because the problem of lack of knowledge affects all people, particularly children, because most vaccinations are given during childhood and everyone is required to take them due to Palestine's mandatory vaccination process (Vaccination Schedule for Occupied Palestinian Territory, Including East Jerusalem 2019 thus, if the community health nurses don't know about the adverse events post immunization, it will be a big problem because this can affect the child's health because the community health nurses might not know how to

deal with the child. Furthermore, the child may be hospitalized after his treatment was very simple at first, and this will be a factor that might increase the fear of parents because they don't know what to expect for their child. Also, the parents may think that the vaccine has expired or that the route of administration was wrong, which will exacerbate the problem for the community health nurses and also for the health institutions where the nurses are working.

Moreover, as a consequence of this lack of knowledge regarding adverse events post immunization, people might lose faith in vaccination programs and attempt to defraud the health laws to prevent their children from being vaccinated.

From this study, the researchers' team believes that this study will help them to determine the level of knowledge of community health nurses about the adverse events post immunization. Moreover, through this study the research's team will make some recommendations that will be useful for the community health at all which will create a strong and organized healthy community.

Significance of the Problem

The safety of the vaccination process remains one of the biggest concerns for people, especially for parents, and the fear of the adverse events of it. Furthermore, the body's reaction to immunization varies from person to person due to the differences in the immune system, so some people will have serious adverse events, while other people will have non-serious adverse events [15].

Furthermore, the researchers team chose the community health nurses who are not administrating vaccine because immunization centers close at 02:00 pm at this rejoin, so if the person who gets immunized becomes tired, he will seek any available health care center. As a result, all community health nurses should have good knowledge regarding adverse events post immunization and should know how to manage it in a professional way.

The findings of this study will be significant in deducing the current knowledge of nurses regarding adverse events post immunization at the health care centers in the Northwest of Jerusalem district. In addition, determining the current knowledge of nurses regarding adverse events post immunization might enable immunization managers to strengthen the immunization programs, build public confidence and increase immunization coverage.

Practically, this study is considered a new study; almost no one has studied this problem in Palestine, and our research will provide a future reference for other researchers.

Purpose of this Study

The purpose of this study was to determine the level of nurse's knowledge regarding adverse events post immunization at the health care centers in the northwest of Jerusalem district.

The Objectives of the Study were

1. What is the level of knowledge about adverse events post-immunization among community health nurses at the health care centers in the northwest Jerusalem district?
2. Is there any significant difference between level of knowledge regarding adverse events post-immunization score among community health nurses according to socio-demographic characteristics?

Hypothesis

Main Hypothesis

Null hypothesis: There is no significant difference at ($\alpha \leq 0.05$) in the level of knowledge about adverse events post-immunization among community health nurses based on socio-demographic characteristics.

Sub-Hypothesis

- There are no statistically significant differences at ($\alpha \leq 0.05$) in the level of nurse's knowledge about the adverse events post immunization based on the gender of nurses.
- There are no statistically significant differences at ($\alpha \leq 0.05$) in the level of nurse's knowledge about the adverse events post immunization based on the age of nurses.
- There are no statistically significant differences at ($\alpha \leq 0.05$) in the level of nurse's knowledge about the adverse events post immunization based on the educational level.
- There are no statistically significant differences at ($\alpha \leq 0.05$) in the level of nurse's knowledge about the adverse events post immunization based on the years of experience.
- There are no statistically significant differences at ($\alpha \leq 0.05$) in the level of nurse's knowledge about the adverse events post immunization based on the type of health care center.
- There are no statistically significant differences at ($\alpha \leq 0.05$) in the level of nurse's knowledge about the adverse events post immunization based on hearing about the adverse events post immunization.
- There are no statistically significant differences at ($\alpha \leq 0.05$) in the level of nurse's knowledge about the adverse events post immunization based on previous training courses about vaccination programs.

Assumptions

Considering the fact that community health nurses are responsible for improvement of public health, in addition, determining the current knowledge of community health nurses regarding adverse event post immunization might enable immunization managers strengthen the immunization programs, build public confidence and increase immunization coverage.

This could eventually help to consolidate the gains made in immunization programs. Eventually, the levels of vaccine coverage and control of vaccine preventable diseases may increase.

Limitation of the Study

In this study, the researchers team suffered from lack of time, also, this study was not funded to cover all clinics in all Palestinian nurses.

Moreover, this study was challenges to a small sample size from health care centers in Palestine, so this doesn't allow the generalization of the study results to all Palestinian nurses.

Also, a lack of previous research studies in Palestine about this topic, and limited access to data.

Conceptual definition of the variables

Knowledge

Awareness, understanding, or information that has been obtained by experience or study, and that is either in a person's mind or possessed by people generally [16].

Nurse

An individual who, in their daily duties, conducts nursing care and other related services to patients [17].

Adverse event

Is an adverse outcome that is more likely due to the processes of medical care rather than to the mere progression of disease [18].

Immunization

Is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine [19].

Summary

The selection of this study was related to lack knowledge among community health nurses regarding to adverse events post-immunization.

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