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THE ROLE OF COMMUNITY PHARMACISTS IN PROMOTING IMMUNIZATION: INSIGHTS FROM A SURVEY-BASED SURVEY

Durriya Hashmat[*1], Mahnoor Jamil[2], Sundus Tariq[3]

[*1]*Assistant Professor Faculty of Pharmacy Jinnah University for Women*
[2,3]*Lecturer Faculty of Pharmacy Jinnah University for Women*

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Corresponding Author: *
Durriya Hashmat

Abstract

Background: *Immunization is a cost-effective public health strategy for preventing infectious diseases and reducing healthcare costs. Community pharmacists, as highly accessible healthcare providers, can play a pivotal role in expanding immunization coverage. However, in developing countries like Pakistan, their role in vaccination services remains underutilized.*

Objective: *This study aimed to evaluate the awareness and perceptions of the general population regarding immunization and to assess public opinions about the role of community pharmacists in immunization services in Karachi, Pakistan.*

Method: *A cross-sectional survey was conducted between June 2024 and December 2024 among 88 individuals in Karachi. Data were collected using a structured questionnaire distributed both online and via local visits. Questions focused on immunization awareness, experience with vaccine side effects, and perceptions regarding the pharmacist's role in immunization. The results obtained are shown as tables, graphs and frequencies.*

Result: *The majority of participants (95.5%) recognized the importance of immunization for disease prevention and economic benefit. A high percentage (90.9%) reported being vaccinated, although 13.6% experienced side effects post-immunization. Notably, 81.8% had limited knowledge about community pharmacies, and many were unaware of their availability in their areas. However, 95.5% believed that community pharmacists could significantly contribute to immunization through education, facilitation, and vaccine administration.*

Conclusion: *The study highlights a strong awareness of immunization among the general public and a favorable perception of community pharmacists as potential immunization providers. Expanding pharmacist-led vaccination programs could enhance healthcare access, especially in underserved areas. However, greater public education and health policy support are required to fully utilize pharmacists in this role.*

INTRODUCTION

Immunization is considered one of the most cost-effective strategies for disease prevention [1]. Despite its known benefits, adult immunization rates worldwide fall below desired targets [2]. Since the focus of healthcare has shifted toward prevention, pharmacists have been encouraged to expand their practice to include preventive measures such as immunization [3,4].

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Pharmacists have overcome many hurdles to improve immunization rates in various countries. They are arguably the most accessible healthcare professionals. Approximately 250 million people visit pharmacies weekly, often without an appointment [5,6]. Community pharmacies are accessible for extended hours and are often located in department stores, grocery shops, and malls. They are also equipped to store vaccines safely [6].

In recent years, pharmacists have gained recognition for their role in delivering vaccines. In 1994, an immunization training program was conducted for 50 pharmacists in Washington [7]. Subsequently, in 1996, the American Pharmacists Association launched the first nationally recognized pharmacist training program for vaccine administration. By 2009, pharmacists were formally authorized to vaccinate in the U.S. [8].

Vaccines significantly reduce disease burden and mortality, including the global eradication of smallpox. Currently, 21 vaccines are available for infectious diseases, of which 11 are routinely used in children [9].Several studies have identified barriers to immunization, including patient-related barriers (lack of knowledge, cost, and transportation) and provider-related issues (missed opportunities and limited service hours) [10–13]. In response, many countries have empowered non-traditional immunization providers, including pharmacists, to enhance vaccination coverage. Pharmacists are encouraged to educate patients about immunization and keep detailed vaccination histories [13].

Studies show that implementing vaccination programs in community pharmacies leads to increased accessibility, faster immunization, improved education, higher vaccination rates, disease prevention, and healthcare cost savings [9,13].

The aim of this study is to evaluate awareness of immunization among the general population in Karachi, Pakistan and to assess public perceptions of the pharmacist's role in immunization.

Methodology:

This study was carried out from June 2024 to December 2024 in Karachi, Pakistan. A cross-sectional survey was conducted among the normal population (n=88) to investigate their knowledge and perception about immunization and also to evaluate the awareness about role of pharmacist in immunization. A structured questionnaire was generated in order to gather the data online as well as by local visits to different areas of the city. The participants were inquired about immunization, side effects observed after immunization and also about the contribution of the pharmacist in immunization as community pharmacist.

Data Analysis:

The data collected from the survey was analyzed using descriptive statistics to identify trends and patterns in the responses. The results were presented in the form of frequencies, percentages, and graphs to facilitate easy interpretation.

Ethical Considerations

The study was conducted according to ethical standards. Participants provided informed consent, and all responses were anonymized and kept confidential.

Inclusion and Exclusion Criteria :

The criteria for the inclusion of the survey are quite flexible, as it was distributed to the general population of Karachi, with the age range being restricted to older adults and teenagers (**20-75 years**). Additionally, the survey was not restricted based on gender, working status, caste, health factors, or residential area. Despite the survey's flexibility, as it was already indicated, children were excluded in the study.

Study Limitations:

The sample was limited to educated individuals from a specific urban area, which may not be representative of Pakistan's broader population. Future studies should target a more diverse demographic, including rural and less literate populations, to provide a more comprehensive perspective.

RESULTS:

A total of 88 individuals participated in this cross-sectional survey. The findings reflect public awareness regarding community pharmacists, immunization, and perceptions of pharmacists' roles in vaccine delivery. Table 1 shows the questions asked from the participants. to know their views about the role of community pharmacists in immunization.

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Table 1: Questions included in the survey to know the awareness and perception about immunization and community pharmacy

QUESTIONS	YES	NO
Awareness about community pharmacy	81.8%	18.2%
Community pharmacy in a locality	0%	100%
Awareness about immunization	95.5%	4.5%
Significance of immunization for health	95.5%	4.5%
People taken Vaccination	90.9%	9.1%
Side effects observed after vaccination	13.6%	86.4%
Role of community pharmacist in vaccination/immunization	95.5%	4.5%
Preference of a pharmacist for immunization	90.5%	9.5%
Awareness campaign on immunization by community pharmacists can improve the health in your locality	95.5%	4.5%

According to **Figure 1**, a vast majority of participants (95.5%) demonstrated awareness of immunization and recognized its importance for disease prevention. Only 4.5% of individuals reported having no awareness of immunization.

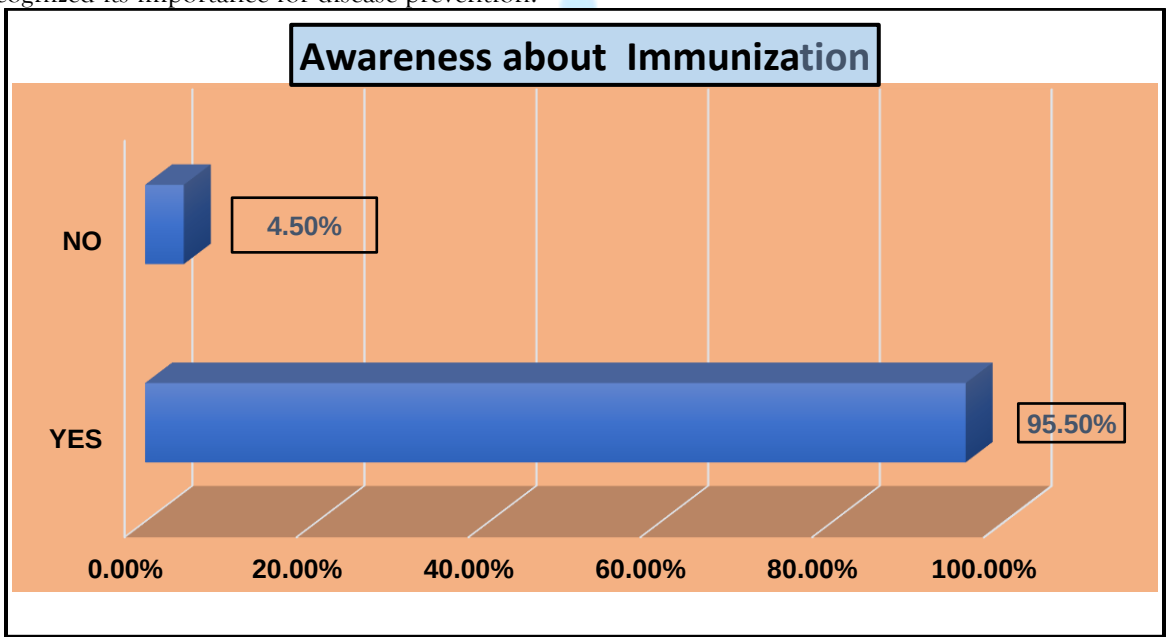

Figure 1: Awareness about immunization among the participants.

As shown in **Figure 2**, 81.8% of respondents reported that they were aware of the concept and role of community pharmacists, while 18.2% indicated they were unaware of community pharmacy services in their area.

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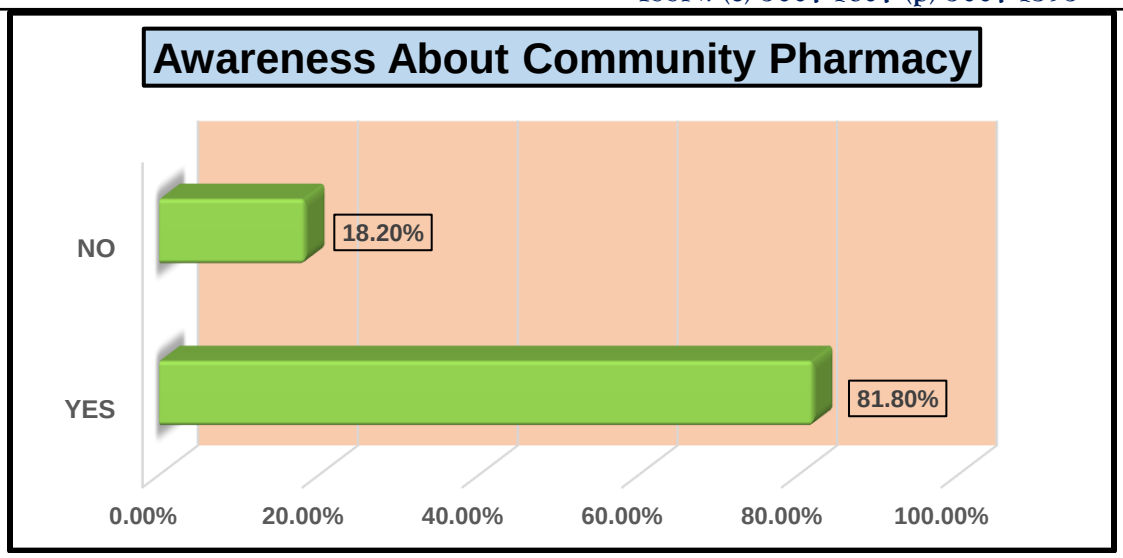

Figure 2: Awareness about community pharmacist among the people, 81.8% people are aware while 18.20% people are unaware about community pharmacy

As illustrated in **Figure 3**, 95% of respondents agreed that community pharmacists can play an important role in immunization services through vaccine administration, education, and facilitation. Meanwhile, 5% did not consider pharmacists important in this regard.

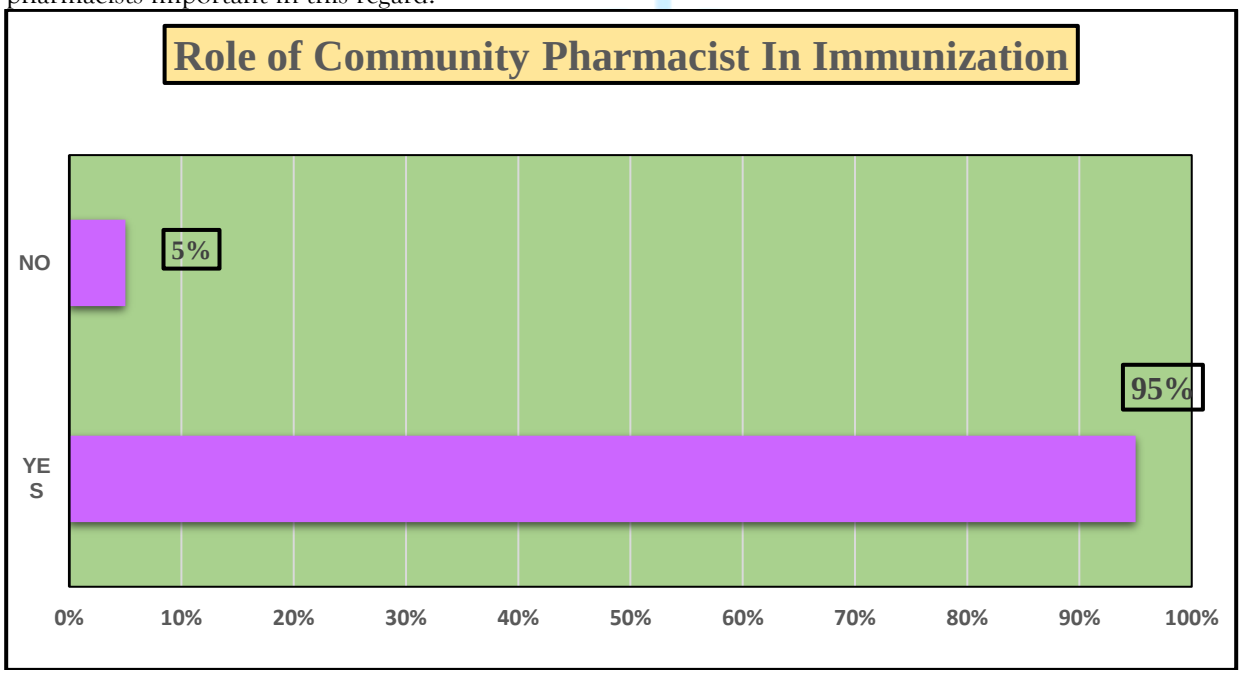

Figure 3 : Perception of Pharmacist's Role in immuniztion

Side effects can also occur after vaccination. As shown in **figure 4,** 13.6% participants has reported side effects after vaccination while 86.4% did not experience any side effects .

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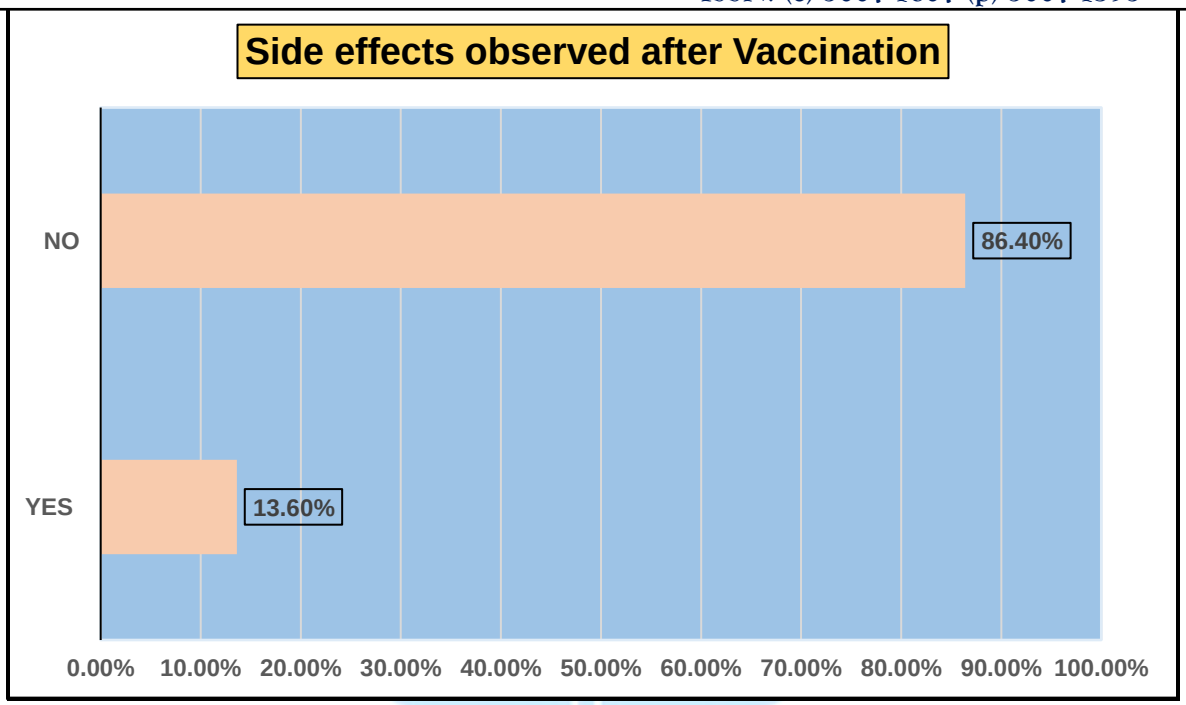

Figure 4 highlights that 95% of participants supported the idea that awareness campaigns led by community pharmacists could help improve public health outcomes. A small proportion (5%) disagreed with this statement.

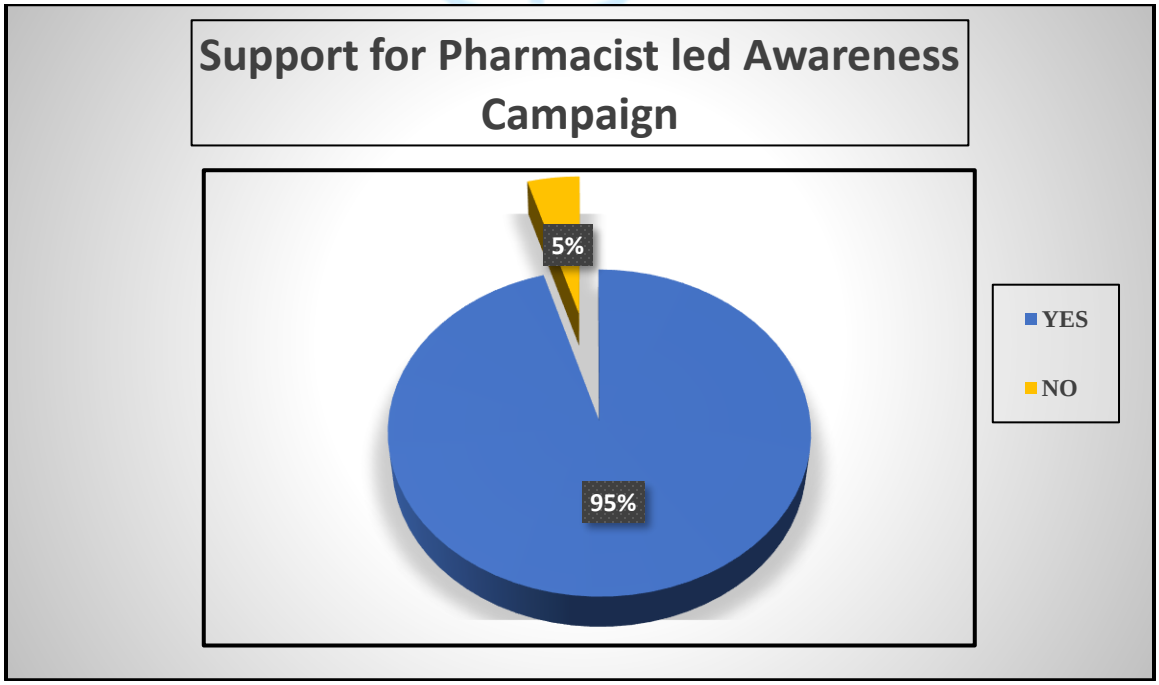

Figure 4: Perception about pharmacist led awareness Campaign

DISCUSSION:

This study reveals both strengths and gaps in the public's awareness of immunization and the role of pharmacists in Pakistan. While 95.5% of participants were aware of the importance of immunization, 81.8% had limited knowledge about community pharmacies. This lack of awareness may be attributed

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to the absence of community pharmacies in several areas, thereby limiting healthcare access.

The high awareness rate of immunization aligns with previous reports emphasizing the public's recognition of vaccines as a preventive measure with economic and societal benefits [1,2]. Immunization reduces disease burden and prevents avoidable deaths, particularly in low- and middle-income countries. For instance, approximately 15% of deaths in Pakistani children under five years are due to vaccine-preventable diseases, despite improvements in coverage [14].

In this study, 90.9% of participants reported being vaccinated, while 13.6% experienced side effects. However, most individuals were unaware of possible vaccine-related adverse effects. This indicates the need for pharmacists to educate patients comprehensively about vaccine safety and expected reactions—an area where community pharmacists are uniquely positioned to intervene [15].

Encouragingly, 95.5% of respondents believed that pharmacists can play an effective role in immunization by educating the public, administering vaccines, and facilitating the immunization process. Globally, community pharmacists have been instrumental in increasing access to immunization services due to their extended working hours, walk-in availability, and widespread presence in the community [6,12].

Countries such as Canada, the U.S., and the U.K. have successfully integrated pharmacists into national immunization programs, with evidence showing improved coverage and reduced disease incidence [16,17]. Pharmacies also offer logistical advantages, including proper vaccine storage and convenient access for individuals with time constraints.

Additionally, pharmacists are ranked among the most ethical and trustworthy healthcare professionals, which enhances their capacity to build patient confidence in immunization programs [18]. Their ability to administer vaccines and maintain proper immunization schedules further enhances their potential role in public health.

Conclusion:

This study highlights strong public awareness of immunization and growing recognition of the pharmacist's role in vaccine delivery in Pakistan. Expanding the scope of community pharmacies and empowering pharmacists to provide immunization services may improve public health outcomes. However, further efforts are needed to increase awareness in underserved regions and to support pharmacist-led vaccination through policy and educational reforms.

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