

Influencing factors on vaccination uptake in Pakistan

Christian Lorenz, Muhammad Khalid

Gesellschaft fuer Internationale Zusammenarbeit (GIZ), German Development Cooperation, Islamabad, Pakistan.

Abstract

This article describes immunisation of children under 5 years among different regional and socio-economic population groups in Pakistan. It also gives insights on the health facilities used for immunisation and the reasons for not vaccinating the children. Furthermore, it discusses other factors that influence vaccination rates.

The analyses are based on household economic survey data for 1998-89, 2001-02 and 2005-06. In these years, Pakistan Standard of Living Measurement (PSLM) survey has been carried out along with the Household Integrated Economic Survey (HIES) which included social as well as economic indicators related to households. The HIES was conducted as sub-sample of PSLM and provided data on household income, consumption expenditure and consumption pattern at national and provincial level with urban/rural breakdown. The empirical findings showed that mobile immunisation teams (MIT) are of major importance for the vaccination rate in three aspects; Firstly, MIT increase the awareness of diseases and the need and ability to protect against them. Secondly, MIT inform parents about possibilities and positive impacts of vaccination and reduce the fear of negative impacts through detailed information. Thirdly, MIT establish the lack of availability of health care providers especially in rural areas.

Keywords: Immunisation, Socio-economic population groups, Economic survey data, Mobile immunisation teams, Pakistan.

Introduction

Vaccination is the administration of antigenic material (the vaccine) to produce immunity against a disease. Vaccines can prevent or ameliorate the effects of infection by many pathogens. In Pakistan, the majority of immunisation is given to children up to five years protecting them against tuberculosis, poliomyelitis, diphtheria, pertussis, measles and tetanus. The vaccination is also given to their mothers against tetanus. For this purpose, the Expanded Programme on Immunisation was launched in 1978. The Federal Ministry of Health supported the programme for the period 2004-2005 to 2008-2009 with a total cost of 11.5 billion PKR. The Federal Government also ensured the provision of vaccines, syringes, cold chain equipment, transport, printed material and launching of health education/motivation campaigns.¹

Influencing factors:

Besides socio-economic reasons, other influencing factors for vaccination take-up rates were awareness, parental attitude and impacts of vaccine controversies in the public.

The knowledge and information regarding importance of vaccines plays an important role for the decision to vaccinate family members. The primary care professionals involved in vaccination process have a pivotal role in educating parents on the safety and effectiveness of the vaccine,² therefore health professionals need to have besides the knowledge about diseases and the vaccines, the ability to build awareness in a trustful relationship to the patients.³

The attitude of the parents can strongly influence vaccination rate. This parental attitude is not only influenced by the perceptions of infectivity and severity of the disease, but also by the parental perception of vaccine safety and its effectiveness. The parental perception of severity of the disease is also influenced by the prevalence of the disease itself. If the prevalence of a particular vaccine preventable disease is low, the fear of the disease and its severity is also low as the disease is not physically seen in the communities.⁴ In the UK, pertussis was perceived to be associated with whooping cough and MMR vaccine with autism that affected the perception of the parents about the safety of vaccine which had a serious negative impact on the vaccine rate.⁵ Therefore it is important that parents are informed about safety and effectiveness of vaccines, about the severity of the disease and the risks involved in case their child is not vaccinated.⁶

Vaccine controversies do have an impact on vaccination rates. The vaccine controversies may have roots in religious and cultural factors such as the polio vaccine controversy in Nigeria in 2003 and in India in 2006.⁷ A solution in similar situations might be the engagement of local religious leaders to clarify the concerns as well as having a well planned dissemination strategy of the scientific evidence of safety of the vaccine. Health education as a tool to disseminate the information should be used, keeping in view the cultural context and the local communities. For example, in 2007 some of the conservative religious clerics in Khyber Pakhtunkhwa (KP) and Federally Administered Tribal Areas (FATA), claimed that the polio vaccine is an "Infidel Vaccine" and the main purpose is to sterilize Muslims and blamed it to be a Western plot against Muslims.⁸ Some of the religious

clerics even claimed that it is un-Islamic to vaccinate their children and those who die of Polio are martyrs.⁹ Unfortunately, due to lack of information and awareness of the local people, 24,000 children were deprived of polio vaccination just because of this controversy and became difficult to run polio awareness campaign in this area. The awareness campaign was halted after health professionals were targeted during polio awareness campaign.¹⁰

The international health community was counteracted by involving prominent religious clerics signing a fatwa, a religious order endorsing the vaccinations.¹¹ Health workers in the province were given copies of this fatwa to convince people to get their children vaccinated. However, this factor of counteracting by a religious scholar was missing during the polio vaccine controversy in Nigeria that led to drastic spread of polio virus from Nigeria to 12 neighbouring countries in Sub-Saharan Africa.¹²

Immunisation disparities:

The results for different regions as well as for different consumption groups is summarized in this section. The percentages of children, who have been vaccinated differ between consumption quintiles from 86 to 97%. Although, vaccination rates increased from 1998-99 to 2005-06 from 79% to 91%, in years 2005-06 the immunisation level of the poorest quintile is about 10% lower compared to highest quintile for the total and the rural figures. In urban areas the differences between the consumption quintiles are smaller.

For the validation of these figures the existence of immunisation cards also has been requested in PSLM. The

answers range from about 40% availability of the poorest quintile to about 70% of the richest.

Table-1 shows the most frequented facilities for immunisation purpose for the year 2005-06 and the importance of vaccination teams for the same reason.

Almost 64% of the households stated that immunisations were done by vaccination teams, which have been established to support vaccination campaigns. This figure is even higher for low expenditure households (74% compared to households from highest consumption quintile with 51%). About one quarter of households stated immunisation was done in government health facilities like dispensaries, public-sector hospitals or by doctors. It is also important to note that only 3% of the households got their immunisations from private health facilities which is very low compared to immunisations done by vaccination teams and the Government health care facilities. A look at the regional distribution indicates that more than 85% of all expenditure groups were able to use health facilities within a distance of 2 kilometres. Regarding the regional availability of health facilities data from the Mouza Census can be applied, which shows that most types of facilities are available for about 50% of the rural population within a range of 10 kilometres.¹³

The former results as well as the following demonstrates the importance of immunisation campaigns and the use of vaccination teams as special health facility for this purpose. For all three years where data is available, vaccination teams are the most important in providing health facility. The higher the quintile the lower is the share. In

Table-1: Facilities used for vaccination in percentage.

Facility	Year	Consumption quintile					Total
		1	2	3	4	5	
Vaccination team used for immunisation in %	1998-99	78.2	71.9	67.0	66.6	59.0	69.7
	2001-02	83.9	75.9	68.3	67.6	56.4	72.9
	2005-06	73.5	67.3	64.0	58.5	51.0	63.9
Government dispensary / hospital / doctor	2005-06	19.7	24.8	26.8	30.7	32.8	26.3
Private dispensary / hospital / doctor	2005-06	1.0	0.9	2.1	2.8	8.8	2.7
Other	2005-06	5.8	7.0	7.2	8.1	7.4	7.0

Source: Author's calculations based on HIES microdata.

Table-2: Reasons for not vaccinating the children in percent 2005-06.

Reason	Consumption quintile					Total
	1	2	3	4	5	
Team not visited	23.2	28.5	31.0	28.0	31.3	27.0
No knowledge about immunisation	34.8	13.2	13.7	4.2	6.1	20.2
Unnecessary to immunise	14.4	15.5	14.3	11.0	19.6	14.5
Facility too far away	9.4	12.1	14.2	15.2	12.3	11.8
Others	18.1	30.7	26.8	41.6	30.7	26.5

Source: Author's calculations based on HIES microdata.

2005-06 only 51% used vaccination teams in the fifth quintile compared to 74% in the first consumption quintile. Evidence for the importance of vaccination teams for the immunisation of the poor can also be found in Table-2.

About 27% stated that the absence of a vaccination team is the reason for not immunising the child. 20% had no knowledge about immunisation and 15% assumed immunisation as unnecessary. For 12% the facilities were too far away.

If one sums up the reasons for not vaccinating the children who are related to the visits of mobile vaccination teams, about 75% of them could be healed by the increased usage of vaccination teams. The Mobile Immunisation Teams (MIT) are of major importance for three reasons: First, MIT increase the awareness of diseases and the need and ability to protect against them. Second, MIT inform parents about possibilities and positive impacts of vaccination and reduce the fear of negative impacts due to detailed information. Third, MIT heal the lack of availabilities of health care providers especially in rural areas and for poorer households.

Conclusion

From the already published literature and experiences in the past especially in an Islamic environment, religious beliefs, lack of awareness on importance of vaccination, lack of confidence in the international health community and conflict situations in some of the regions can negatively affect vaccine campaigns. Therefore medical education and awareness building is one important issue to keep vaccination intake into account. Furthermore, the study showed that mobile immunisation teams (MIT) are of major importance for the vaccination rate.

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