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ORIGINAL RESEARCH

DETERMINACIES OF VACCINE HESITANCY: A QUALITATIVE ANALYSIS

[1]Dr. Preeti Padda, [2]Dr. Urvashi Grover, [3]Dr. Shalini Devgan, [4]Dr. Vishal Gupta, [5]Dr. Sanjay Gupta

[1]Associate Professor, Department of Community Medicine, Government Medical College, Amritsar, Punjab, India

[2]Assistant Professor, [3,4]Associate Professor, [5]Professor & Head, Department of Community Medicine, Guru Gobind Singh Medical College, Faridkot, Punjab, India

Correspondence

Dr. Urvashi Grover

Assistant Professor**,** Department of Community Medicine, Guru Gobind Singh Medical College, Faridkot, Punjab, India

Email: urvashi9kataria9@gmail.com

Abstract:

Background: Vaccination is heralded as one of the most important achievements of public health; however, this success has always been accompanied by opposition to its practice. Vaccine-hesitant individuals have been defined as a heterogeneous group in the middle of a continuum ranging from total acceptance to complete refusal.

Material and Methods: It is a qualitative cross-sectional study conducted in the field practice area of Urban Primary Health Centre, Department of Community Medicine, Guru Gobind Singh Medical College,Faridkot, Punjab from June 2019 to September 2019.

Results: Several factors which acted as promoters or inhibitorsof vaccination were identified. Among promoters, main factors identified were availability of vaccines free of cost (79%), availability at door step (67%) and continuous sensitisation from ANM/ASHA (55%). Among inhibitors, main factors identified were negative impact of social media (93%), lack of information (55%) and customs and beliefs (50%).

Conclusion: Vaccine related health communication should be a two-way process, where listening to the perceptions and opinions of the community should be as important as providing information.

Key words: Vaccination, promoters, inhibitors, free of cost, social media.

Introduction

Vaccination is often heralded as one of the most important achievements of public health; however, this success has always been accompanied by opposition to its practice.[1] Historical reasons for objection have never been singular nor straight forward, drawing motivation from several frames of reference including religious, scientific and political.[2,3] Present day issues around vaccination share the same diversity but are arguably, more complex, as more

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vaccines are available, and the world takes on a more global profile.[4] One observed impact of this growing complexity is an increase in the expression of public concerns and sense of uncertainty around vaccines; both have been linked in developed countries to an increase in the number of people seeking alternative vaccination schedules [5,6] and decisions to delay or even refuse vaccination. [7] In recent years, this phenomenon has been labelled and investigated as 'vaccine hesitancy'.[8-10]The World Health Organization (WHO) Strategic Advisory Group of Experts (SAGE) on immunization has defined vaccine hesitancy as "delay in acceptance or refusal of vaccination despite the availability of vaccination services." Vaccine hesitancy is complex and context specific, varying across time, place, and vaccines. Vaccine hesitancy occurs along a continuum between full acceptance and outright refusal of all vaccines, i.e., when there is acceptance of some and delay or refusal of some of the recommended vaccines. It is influenced by factors such as complacency, convenience, and confidence. [11]

Vaccine-hesitant individuals have been defined as a heterogeneous group in the middle of a continuum ranging from total acceptance to complete refusal; these individuals may refuse some vaccines, but agree to others; delay vaccines or accept vaccines but are unsure of doing so.[12,13]

Such parents trust their family paediatricians, suggesting that they could benefit from appropriate communication interventions. Training health professionals and providing homogenous information about vaccinations, in line with national recommendations, are crucial for responding to their concerns. [14]

Parental confidence in vaccine programs can be a key factor influencing vaccine uptake. Although vaccine safety scares and their impacts are well known and caninclude prolonged drops in vaccination rates, often years after the safety issue has been resolved, little research has investigated how parents themselves respond to these scares in their own words. Few if any have done so in real time during the evolution of the scare. Therefore, this research was conducted to get deep insight of parental inhibitions and promotions towards vaccination decision making. This additionally will help us in understanding various public health barriers in implementation of the Universal immunization programme.

Material and methods

Study area

The study was conducted in the field practice area of Urban Primary Health Centre, Department of Community Medicine, Guru Gobind Singh Medical College, District Faridkot, Punjabwhich caters to a population of approximately 18,500. The majority of the population residing here belong to low socio-economic strata and all health needs are catered to by Urban Primary health Centre being run by the department.

Study period

The study was conducted from June 2019 to September 2019.

Study population

The study population comprised of mothers of children aged 12-23 months whowere fully vaccinated, partially vaccinated or not vaccinated along with the formal health care providers

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i.e. Medical Officers (MOs) of nearest health centres/private practitioners, Auxillary Nurse Midwives (ANMs) and Accredited Social Health Activists (ASHAs) and Informal health care Providers i.e. RMPs serving the study area.

Operational Definitions

Fully vaccinated: Children aged 12-23 months who had received all the vaccines recommended as per their age.

Partially vaccinated: Children aged 12-23 months who had refused or missed any dose of vaccine after taking earlier doses.

Not vaccinated: Children aged 12-23 months who had not taken a single vaccine since birth till the time of study.

Vaccine Hesitancy: Any refusal or delay in taking vaccines as per the recommendation of National Immunization Schedule (NIS) as per the age of the child was labelled as vaccine hesitancy.

Study design

It is a qualitative cross-sectional study which included Key Informant Interviews (KIIs) with formal and informal health care providers and In Depth Interviews (IDIs) with mothers of 12-23 months old children from the community.

Sampling and Sample size

Sample size of qualitative studies is based on the concept of saturation. Under this concept the researcher gets similar results during the interviews/ discussions consistently which addresses the research question substantially. Four to five semi-structured in-depth interviews with mothers of children aged 12-23 months were considered to be adequate to reach data saturation. Different categories of study participants were included. A list of all the mothers of children aged 12-23 months was obtained from ANMs of the respective areas.

In depth semi-structured interviews were conducted using interview schedules where 6 IDIs were conducted with mothers of unvaccinated children and 2 each of partially and fully vaccinated children. Relatively higher no. of IDIs were conducted with mothers of unvaccinated children. This was deliberately done to fulfill the aim of the study.

Development of Data Collection tools

Based on the previous literature available on vaccine hesitancy, interview guides were prepared separately for each type of the study participant (Table 1). These included outlines of semi-structured interviews to be conducted with participants where open-ended questions were listed systematically. Guide also allowed the interviewer with the option of probing further by asking supplementary questions related to the themes emerging during the interview. These developed tools were translated to local language (Punjabi) and were validated. After translation and validation these were pilot tested for consistency and lucidity.

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Table 1: Data collection tools used for the study

S. No.	Questionnaire	Respondents	Number
1.	Children vaccination questionnaire	Mothers of fully vaccinated children (aged 12-23 years)	4
2.		Mothers of partially vaccinated children (aged 12-23 years)	4
3.		Mothers of not vaccinated at all children (aged 12-23 years)	4
4.	Health care provider questionnaire (formal)	Medical Officer	1
5.		ANM	3
6.		ASHA	3
7.	Health care provider (informal)	Registered Medical Practitioner (RMP)	2
8.	Focus group discussions questionnaire	Mothers of children aged 12-23 months (fully/partially/ not vaccinated at all)	21 (7 per FGD)

Methodology for Data Collection

Before the conduction of IDIs/FGD with the study participants a house to house survey was conducted for identification of study participants. During this survey a line of all the children aged between 12-23 months was prepared and the immunization details of each were recorded. Based on the immunization records they were classified into fully vaccinated, partially vaccinated and not vaccinated (as per operational definitions stated above). From the line list, mothers of these children were randomly selected and after taking informed consent were included in the study.Data was collected over a period of two months by trained and experienced researchers in qualitative research methods. The interview guides developed were used to conduct IDIs, KIIs and FGDs. IDIs were conducted with mothers the interviews at home of the participants to make them feel comfortable. IDIs were conducted with 4 mothers each of all the 3 categories/ types of participants (total of 12 IDIs). Later on, 3 FGDs were conducted with 6-7 mothers each whose children are fully immunized, partially immunized or not immunized at all. KIIs were conducted with formal and informal health care providers (as per table 1) at their place of work using the developed set of guidelines for data collection. Each FGD, IDI and KII were audio-recorded and few important points were written during the interviews. Each interview/discussion lasted for atleast 30 mins.

At the end of interview and FGD, a summary was presented to the mother for validation of the data collected. The audio recordings were transcribed using verbatim format within 24 hours of the interview to avoid any loss of information.

Data Analysis

"Thematic Analysis" technique was used to identify various themes which were then classified into promoters and inhibitors in the present study. Later sub-themes using deductive iterative coding. Consolidated criteria for separating qualitative research checklist

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(coREQ checklist) [15] was used as a guideline for separating the various promoters and inhibitors of vaccination identified during the study as well as presentation of the results.

Ethical considerations

Before starting the interview, the objectives of the study were thoroughly explained and informed consent was taken for participating in the study. Further, they were convinced about their anonymity and confidentiality. All the interviewees were allotted identity numbers to maintain the privacy and no personal identifiers were used. They were also told about their right to participate in the study and were further informed that they can stop the interview at any time they want.

Results

Out of the total population surveyed (18,364), 371 children aged 12-23 months were identified. Among these 78% were fully vaccinated and 22% were found to be vaccine hesitant (partially vaccinated were 19% & not vaccinated were 3%). A total of 12 mothers 4 each of fully vaccinated, partially vaccinated and unvaccinated children were interviewed along with 1 formal Health care provider and 2 informal Health care provider. Most of the mothers were between the age group of 20-30 with mean age of 24 ± 2.6 years. Out of all the respondents 42.8% were illiterate and 57.2% had education upto primary level. All belonged to lower socio-economic class (according to Modified BG Prasad scale). All were housewives by occupation.

After interviewing the mothers and conducting FGDs with mothers of all 3 groups, various facts regarding beliefs about vaccination and behavior of mothers regarding the same were found out. Several factors which acted as promoters or inhibitors (main themes) of vaccination were identified.Following this the subthemes were identified which were vaccine related, Health care provider related, family & community related and others (table 2).

Table 2: List of promotors and inhibitors identified (N=42)

S. No.	Themes	Sub themes	Codes	N (%)
1.	Promoters	Vaccine related	Free of cost	33 (79)
2.			Available at door step	28 (67)
3.			Availability of free medicines for side effects	14 (33)
4.		Health care provider related	Continuous sensitization from ANM/ ASHA	23 (55)
5.			Faith in health care providers & their support	16 (38)
6.		Family & community related	Learning from examples	19 (45)

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	INHIBTORS			
7.		Family & Community related	Customs & Beliefs	21 (50)
8.			Faith in spiritual leaders	14 (33)
9.			Taking care of household & other children	10 (24)
10.			Being away from home	07 (17)
11.		Vaccine related	Multiple pricks at one time	13 (31)
12.			Concern regarding side effects	13 (31)
13.		Others	Negative impact of social media	39 (93)
14.			Lack of information	23 (55)
15.			Forgotten dates	08 (19)

Main factors identified are described below:

Promoters

1. Free of cost

This came out to be the most common reason for most of the parents getting their children vaccinated. Almost 2/3rd of the mothers of fully vaccinated, half of the mothers of partially vaccinated children told that free of cost availability of vaccines has made it easy for them to get their children vaccinated. Had it been that they have to spend for vaccines from their pocket, it would have been very difficult for them.

One of the mothers said ***"The government dispensary is doing good work by providing the vaccines free of cost. So it is easy for us to go there and getour children vaccinated."***

According to a Health care personnel (HCP), very few parents opt for paid vaccines in their area. He said *"**People are not financially very sound in the area we cater. They fulfill their basic needs with great difficulty. So, opting for paid vaccines is near to impossible for them."***

One of the ANMs said, ***"Being available free of cost is the main factor for getting their children vaccinated."***

According to RMP in the area, ***"Very few parents bring their children to me for vaccination purpose as the PHC in the area gives free vaccination services."***

2. Available at doorstep

According to 14 mothers of fully vaccinated and 14 mothers of partially vaccinated children, easy availability of vaccines was a major factor for getting their children vaccinated. According to one mother, ***"The field health workers are very particular about vaccination sessions in field area"***

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"There are outreach EPI sessions on 2nd Wednesday of every month in our area. Even if some vaccine is missed by us due to some reason, we are being called by the ANM/ASHA in the outreach session arranged in our neighbourhood."

3. Continuous sensitization from ANMs/ASHA workers

As ASHA workers get incentives after completion of primary immunization of the infant, they repeatedly visit the houses of these children for repeated sensitization. This point was highlighted by majority of the mothers as well as the HCWs during IDIs and FGDs.

One mother said ***"ASHA workers keep on reminding us about upcoming vaccination of our children by coming to our home 1-2 days prior to day of outreach EPI session"***

Other conveyed that***"Even if we forget about the vaccination of our children, ANMs call us and remind about the upcoming vaccination of our children."***

4. Learning from examples

About 2/3rd of the mothers were of the view that the children who were vaccinated were not infected by diseases while those who were non vaccinated got ill very easily. This increases confidence of society in vaccination.

" In our locality, there are children who are completely vaccinated, they donot fall ill easily as compared to other children who are not vaccinated get cough, cold easily."

5. Faith in HCP and their support

For routine ailments, the general population visits Health care providers (HCPs) of the Urban Health clinic. They are satisfied with their treatment and trust them like God. The HCPs advise them to get their children vaccinated. This has a positive impact on the mothers and helps in increasing the percentage of children vaccinated.

One of the mothers said ***"The Medical Officers of Urban Health centre are very co-operative. They take keen interest in our problems. We can contact them anytime. Even at odd times, they are available for help."***

Another mother said***, "The doctors at Urban PHC are like God to us. They treat us like their own family members."***

6. Availability of free medicines for side effects

The most common side effects of vaccines given under UIP are fever, pain at site. As far as our country is concerned, ANMs carry paracetamol/Ibugesic tablets/syrup given to mothers free of cost (dose explained) due to which most of children donot have severe side effects. This increases the confidence of society in vaccination.

Inhibitors

1. Lack of information

Lack of information was one of the main reasons for mothers not getting their children vaccinated. They did not have enough information to understand the benefits of vaccination and to know the process for getting their children vaccinated.

"We cannot comment on the pros and cons of a thing until you know the thing. In the case of vaccination, we cannot say, because no one came to us to tell us against which disease the vaccination is. So we cannot know whether vaccination is a solution as described by you or a problem as the rumours say"

A participant in a FGD was surprised to know that vaccines can be used preventively. She said, ***"I did not know that when a child is healthy, we can get him to the hospital to take the***

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vaccine which protects him against a number of diseases that are disturbing and even killing our children."

2. Customs and beliefs

Religious and cultural beliefs also played a role in the decision making process of whether to vaccinate the children or not. Some mothers believed that diseases are a plan of God to train their child for the difficult moments and they should not fight them.

For some individuals, the prevention of certain diseases by vaccines was not a desired outcome because diseases were opportunities for the body to get stronger and, since vaccines prevented them, they subsequently weakened the child's (immune) system. One mother pointed out:

"In general, diseases are a part of human daily life. It is not all the time that when a child is sick, then we should go immediately to a hospital. Diseases for children are somehow a necessary bad thing. By falling ill, they become immune. So we do not go to the hospital or health centre immediately for a given disease of the child."

3. Faith in spiritual healers

For others, diseases had a religious/ divine origin, and they must be handled by traditional healers such as the Ojha. The services provided by traditional healers were considered to be more affordable, despite the fact that vaccination is offered free of cost in Government hospitals and dispensaries. They were also considered more effective as compared with medicine (including vaccination): ***" When the children here become sick, we take them to the Ojha in the first place to use religious incantations. And it is only when the disease persists that the child is taken to the hospital."***

4. Multiple pricks at one time

Many parents were concerned about multiple pricks being done at one time. They said, ***"We donot know how beneficial these vaccines are going to be but our children have to suffer from lot of pain at one time."***

Another parent said ***"Too many vaccines to be given at one time makes the child irritable and fussy. So it is better not to take them for vaccination."***

5. Concern regarding side effects

One of the main drivers of vaccine hesitancy is concerns about safety and fear of adverse effects.

"***Our children are healthy, then why should we subject them to vaccination and succumb them to side effects like fever, swelling and pain at injection site and make them sick. Who will call us wise?"***

6. Social Media

Television followed by social media was influential source of vaccine related information. Parents said they had seen the images of children taking vaccines having adverse events following immunization which increases fear among them about vaccines.

"I have seen the news about children getting sick after Measles Rubella vaccine. So why should we pose a threat to our child's life after seeing the reality."

7. Taking care of household and other children

Few mothers also told that they were unable to take the child for immunization /vaccination because they had to complete household works as they did not have any helping hand. They also added that they had to take care of other children too.

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One mother said ***"if I leave home and go to the vaccination site my other two children will be left alone as there is no one to take care of them"***

Other stated that ***"In my household work will pile up by the time I come back from the vaccination site. All the daily course will be delayed and my husband will get annoyed if the food is not ready by the time he gets back from work"***

8. Forgets date

As most of the mothers were either illiterate or had a low education status they said that they forget dates of vaccination given at the time of birth as they were unable to read and write.

9. Being away from home

Mothers of partially immunized children highlighted that they were not at home on the day of the outreach session of vaccination. Further they highlighted that they were unable to go to the fixed health facility as it was far away.

10. Not the decision maker

Mothers also highlighted during IDI and FGDs that either mother-in-law or husband/father of the child took the decisions in the family and the discretion of getting the child vaccinated or not also rested with them.

One of the mother said ***"My husband takes all the decisions and decision regarding vaccination is also taken by him. If he says that child will not be vaccinated, the child was not vaccinated. I don't have the right to question him***".

Similar reason was also given by the ANM and ASHA, where most of the family decisions including those of healthcare seeking were taken by mother-in-law and father of the child.

Discussion

We conducted a study using qualitative research to identify factors or beliefs that prevent caregivers from vaccinating their children. We divided various factors into promoters and inhibitors of vaccination. The main factors that promoted vaccination identified during our study were free vaccine, easy availability and continuous sensitization by the ANM and ASHA along with faith of people that rested in them. Lack of information, various customs and beliefs in the society, faith in spiritual leaders and multiple pricks were identified as main inhibitors, whereas negative impact of social media on vaccination drive was highlighted by 93% of the study participants. Most of these are similar to the systematic review of qualitative studies conducted in United Kingdom[16].

Out of the various promoters, availability of vaccines free of cost and faith in Health care providers (HCPs) were the major reasons according to the mothers for getting their children vaccinated. This may be due to the fact that most of the mothers in our study belonged to low socio-economic status (SES) and they couldn't afford vaccines if they had to pay for them out of their pocket and in India, in all government facilities, vaccines are supplied free of cost.

In our country, doctors are treated equivalent to God. Most of the parents were of the view that they do whatever their doctor or health care provider recommends about vaccines for their children. That is why, faith in HCPs emerged as the main factor in promoting vaccination. This was similar to the findings of study on assessment of vaccine hesitancy in Chennai by Sankaranarayanan S *et al* in which it was reported that parents did whatever their doctor or HCP recommends about vaccines for their children.[17]

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Serious concern about adverse effects was found to be one of the main reasons for not vaccinating their children by the parents. This may be due to the reason that information regarding vaccines is often not properly disseminated resulting in apprehension and fear about vaccines. This was in concordance with the findings of Freed *et al* who reported that more than half of the parents were concerned regarding serious adverse reactions and question the safety of newer vaccines. [18]

Lack of information was also found to be one of the main reasons for vaccine hesitancy. This was similar to the findings of Dasgupta *et al* who reported that about 20.5% parents reported to be unaware or confused of when and where to vaccinate; not explained properly by health care providers regarding dates and the vaccines and no reliable information. [19]

Use of social media by parents was one of the determinants of vaccine hesitancy. Media have played and continue to play a major role in disseminating information related to vaccines. Sometimes the messages which are intended to improve vaccine uptake such as information about the vaccine preventable illnesses or messages against false claims about vaccines tend to be counterproductive. This is similar to the findings of the study by Sankaranarayanan S *et al.*[17]

Conclusion

Free vaccine and easily availability were the main promotors of vaccination whereas social media was the main inhibitor for vaccination in our study. Therefore, vaccine related health communication should be a two-way process, where listening to the perceptions and opinions of the community should be as important as providing information. Providing knowledge and information is not enough; it should be associated with interventions based on behaviour change communication theory.

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