PalArch's Journal of Archaeology of Egypt / Egyptology

BARRIERS TO UTILIZATION OF IMMUNIZATION SERVICES AMONG MIGRANT WOMEN IN LAHORE

Dr. Rahla Rahat[1*], Ayesha S. Bugvi[2], Shermeen Bano[3]

[1*]Assistant Professor, Institute of Social and Cultural Studies, University of the Punjab Lahore, Pakistan, rahat.iscs@pu.edu.pk

[2]Lecturer,Institute of Social and Cultural Studies, University of the Punjab Lahore,Pakistanayesha.iscs@pu.edu.pk

[3]Visiting Lecturer,Institute of Social and Cultural Studies, University of the Punjab Lahore,Pakistanshermeenbano1@gmail.com

Dr. Rahla Rahat , Ayesha S. Bugvi , Shermeen Bano , Barriers To Utilization Of Immunization Services Among Migrant Women In Lahore , Palarch's Journal Of Archaeology Of Egypt/Egyptology 18(10), 2951-2961. ISSN 1567-214x.

Key Words: Childhood diseases, Child health care utilization, Immunization, Pakistan, Migrant women.

Abstract

Pakistan has one of the lowest immunization rate in South Asia, thus making it a public health concern. The rate of incomplete immunization poses a challenge for the already frail health system of Pakistan as it may lead to further burden on the economy, health care and the poor and vulnerable population that may have to deal with the burden of diseases in later years. 20 in-depth interviews were conducted in Lahore to understand the socio-cultural barriers faced by young migrant mothers with children under 5 years of age in Utilization of Immunization services. This study aimed to understand their experiences with the health care system, sources of information regarding vaccination, and how the decision to get their children vaccinated or not in their households. Findings of the study revealed the barriers faced by low-income, young

migrant women are similar to those faced by other non-migrant women. These mainly include challenges related to accessing healthcare system. However, migration status was found to influence perceptions about and trust in healthcare system and healthcare providers, as well as determine prevalence of specific cultural perceptions and misconceptions regarding vaccination of children.

1. Background

Efforts related to Immunization of children around the world have expanded to include several new vaccines that are critical for ensuring health and safety of populations. However, incomplete utilization of immunization programs, especially in countries with high birth rate, threatens the efficacy of these global efforts. Non-utilization of immunization program in Pakistan is a longstanding public health concern. Pakistan stands among the countries that have one of the highest birth rates in the world. More than 5 million children are born in the country every year. For this reason, Pakistan was the first South Asian country that adopted new vaccines, including Hib, PCV, and rotavirus vaccines within its national immunization program (Riaz et al., 2018).

The Expanded Programme On Immunization (EPI) was launched in 1976 in Pakistan aimed at vaccinating children against six health risks: tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis and measles. It has been reported that a discontinuation of this program can result in approximately 1000 deaths in children under the age of 5 years (Farrukh et. al., 2017). Despite availability of an extended panel of vaccines for children offered without any charges, a large number of children under the age of 5 years do not complete the series of required vaccines according to Pakistan's national immunization plan (Bugvi et al., 2014). Non-utilization of vaccines therefore, is a serious threat that has the potential to lead to disease outbreaks and related deaths among the population. According to WHO recommendations, about 90% immunization coverage is required at the national level (WHO, 2016). Research has shown that despite improvement in Pakistan's immunization indicators, immunization coverage for children age 12–23 months remains extremely low(Shaikh et. al., 2018). Immunization related data from Pakistan Demographic & Health Surveys (PDHS) have reported that the percentage of fully immunized children age 12-23 months has increased from 35 percent to 66 percent but continues to be inadequate (NIPS, 2019). As a result, Pakistan has the lowest immunization rate in South Asia, thus making it a public health concern.

The rate of incomplete immunization poses a challenge for the already frail health system of Pakistan as it may lead to further burden on the economy, health care and the poor and vulnerable populationwho may have to deal with the burden of diseases in later years. Studies have shown that numerous factors such as lack or limited access to vaccination, attitude and behaviour of health care workers, management of the vaccination program and negative public perception towards the effectiveness of vaccination. (Shaikh et. al., 2018; Topozuglo et. al., 2007 and Cockcroft et. al., 2009). However, the studies further show that the most significant and cross cutting factor which influence the decision to get the children immunized/vaccinated is the decision making process of the immediate family of the child (Xie & Dow, 2005).

The medical science provides ample evidence of the benefits of child immunization. However studies in the developing countries including Pakistan have shown that socioeconomically disadvantaged population resist child immunization (Wain et..al., 2016 and Xie & Dow, 2005). Previous studies have mostly focused on the parents (especially mothers)

decisions that affect immunization completion rates. These include low literacy, belief and attitude of mothers and grandparents regarding vaccination and immunization schedule, poor socioeconomic status, and residence in rural areas (Torun & Bakirci, 2006; Jani et. al., 2008; Tadese, Deribew & Woldie, 2009; Owais et. al., 2011 andRiaz et. al., 2018).

Many studies have reported on mother's decision making, knowledge and education regarding children immunization and showed that successful immunization depends on parent's positive attitude and knowledge (Benin et.al., 2006; Bofarraj, 2011; Rammohan, Awofeso&Fernandez, 2012; Manjunath& Pareek, 2003). It is important to understand that the decision to get the child immunized might be taken by the father or the extended family, yet research has shown that the responsibility concerning the vaccination of the children was left generally with the mother (Topuzoglu et.al., 2007).

The aim of the present study is to understand the barriers faced by young migrant mothers with young children. This study aims to understand their experiences with the health care system, sources of information regarding vaccination, and how the decision to get their children vaccinated or not in their households. The study further aims to explore the cultural barriers faced by families regarding child immunization.

2. Methodology

A qualitative research design was utilized to examine key barriers faced by young mothers (18-35 years) in accessing child immunization services in Pakistan. In-depth interviews were conducted between (month and year) and (month and year) in Lahore- one of the largest metropolitan cities in Punjab province of Pakistan with an approximate population of 12 million. Lahore is home to a large number of migrants from different parts of Pakistan as well as neighboring countries including Afghanistan. The data for this study was collected from Charar Pind, which is a low income neighborhood in the heart of Defence Housing Authority, a suburban high income neighborhood. The location was chosen based on its diverse population which comprises significantly of local, rural-to-urban as well as international migrants. The eligibility criteria for this study included women who were 1) between the ages of 18-35 years 2) had at least one child between the ages of one year to three years and 3) who had migrated to Lahore in the past three years. A semi-structured interview guide was developed by focusing on the existing literature. The interview guide focused on mother's belief about effectiveness of immunization, living in a culturally diverse community, and social and economic barriers to access child health services. Interviews were conducted by two research assistants, with one conducting the interviews and the other taking notes.

Data from the interviews was analyzed using thematic analysis. The data was transcribed by the researchers and initial codes were developed during the process through multiple readings of the text.After collating codes, following theme emerged;

Ethical approval for this study was obtained from the Ethics Committee of University of the Punjab. Voluntary participation was sought, and participants were assured about the data confidentiality. They were briefed about the aims of the study and a written informed consent was obtained before each interview.

3. FINDINGS

Immunization of children is paramount for ensuring young children's health and safety in Pakistan. The following study illuminates key barriers faced by low-income, young, migrant mothers in achieving complete vaccination of their children in Pakistan. The study reveals that the barriers faced by low-income, young migrant women are similar to those faced by other non-migrant women. These mainly include challenges related to accessing healthcare system. However, migration status was found to influence perceptions about and trust in healthcare system and healthcare providers, as well as determine prevalence of specific cultural perceptions and misconceptions regarding vaccination of children.

This study has examined the barriers faced by young mothers in getting their children vaccinated. Respondents in the study were both, in favor and against child immunization. Importantly, it was found that unsuccessful vaccination of children was found to be prevalent even among children whose mothers held positive opinions regarding children immunization. This was a result of multiple barriers that they faced in getting their children fully vaccinated. These barriers existed at levels ranging from personal, socio-cultural, and institutional (related to healthcare services).

The data revealed that the barriers to child vaccination were more significant for young migrant mothers that were poor, less or not educated, and had limited or no interaction with the mainstream healthcare system despite living in one of the major cities of Pakistan. These barriers included mistrust on healthcare system including vaccination program, bio-medicine, and medical professionals. The mistrust was based on generic negative perceptions and prior bad experiences with the healthcare services and healthcare providers and insufficient, incorrect, or lack of knowledge regarding child immunization. In addition, issues of women mobility, inadequate cultural understanding or cultural misconceptions, and language of mothers contributed towards the non-immunization of children.

3.1. Mistrust and distrust of Bio-medicine and Medical professionals

A mistrust and distrust on bio-medicine and medical professionals was shared as one of the leading cause of not getting the children immunized. Many participants shared their experiences and frustrations on spend lots of money on medicines and doctors but not getting the results. Some participants believed that bio-medicine have more harmful side effects and little benefits. They also believed that the doctors have become more concerned with money-making and are no longer concerned with the wellbeing of patients. As a participant shared:

> We keep going to these doctors, they charge so much but they just write prescriptions with too many tests and medicines. Despite so much money there are hardly ever positive results. My 4 month old son got a chest infection every week they would give him injections and medicine but did not get better for months.

Many believed that doctors in general have a tendency to give unnecessary medicines and medical tests. They also complained that doctor do not give more than a few minutes to the patients and do not let them share their concerns and leave them unsatisfied.

A three quarter of participants had more trust in traditional healers known as hakim or faith based healing like pir. Some participants said that if someone gets sick there is more trend of going to a pir that has been happening from generations and has been effective. If someone gets sick, there is still a tendency to think it's a saya i.e. the patient is under influence of spirit or supernatural being. Some participants that believed in traditional healers explained it through the

concept of predetermined fate. Some participants mentioned that whatever God has in store for you will happen anyways. One participant said:

> As a Muslim this is our belief that what Allah has written in your destiny will happen no matter how hard you fight it. This is our belief.

3.2. Mistrust of Government Programs including Immunization Program

In addition to a generic mistrust of healthcare and healthcare professionals, a mistrust or distrust of Government healthcare initiatives including immunization program was found among the participants. For immunization program, the mistrust was on the quality and contents of the vaccination and its possible side effects. Some participants believed that the vaccinations are effective, but doubted the quality and authenticity of the vaccination available in Pakistan especially at government hospitals. One participant elaborated:

> I have heard that the polio drops that are given to our children are nothing but yellow water. Many times they are expired medicines so they would do more harm than good. These government people sell the original medicine and give us poor the fake one. All they are concerned about is filling their pockets. Who care about the poor and their children?

The participants also shared their concerns about the contents of the vaccinations and shared many conspiracy theories. One of the most popular theories was that the vaccinations have secret ingredients to make the children infertile. The attempt to make children infertile was seen as a conspiracy of the West to make sure that the Muslim population does not increase in this world. In addition some participants also shared their concerns over the vaccinations having monkey brain and pig meat. The pig meat was a serious concern as it is forbidden in their religion.

The study also explored the sources of these views of the participants and found that the major contributor to these views is the media (including social media like you tube) and opposition political parties. There is a popular trend of TV programming that is based on hidden camera and claim exposing the wrongdoing of government departments including healthcare and hospitals. Many TV programs are focusing on the areas of health as well. Thus when participants were asked about what made them believe that the vaccinations may have harmful ingredients; one participant responded by saying:

> Everyone knows it. We see it on TV all the time and I have also heard from friends and family. There was this show on TV that showed us how expired medicines are being handed out to the poor. Also my husband heard it on a talk show, where these politicians were telling all the time.

Experiences of friends and family also, at times, become determining factors in the utilization of vaccinations. Many participants shared experiences that they have heard in community from friends and family. One participant said:

> My cousin's son was just fine but after getting the shot he got so sick and they had to take him to the doctors. He was even admitted to the hospital. Since then we are all very scared to giving our children any vaccination shots. We do not know what they put in it or whether they are genuine or not.

Another participant shared:

> I have heard from a friend that her neighbor's relative gave her child flu shot, that whole winter the child constantly had flu. The family regretted giving the shot and there have vowed not to do it again. It is like sometimes you get a reaction to medicine and get sicker.

Interesting finding here was that none of the participant had any personal negative experience and all experiences that they had heard from long chain of sources. However despite that they influenced their decision making process.

3.3. Insufficient, incorrect or Lack of knowledge about vaccinations process and vaccines

Lack of knowledge is another important factor that influences the women's decision making regarding immunization. Studies have found that lack of proper vaccination information contributes significantly in decision regarding vaccination utilization by parents (Topozuglo et el, 2007 and Cockcroft et. el. 2009). Lack of knowledge was seen in two areas: immunization and the process to get immunized. For immunization, many participants highlighted lack of knowledge about the benefits of immunization, the diseases, and the importance of getting complete immunization. Some mentioned that they got their children one or two vaccination and then stopped. Interestingly some participants used the word forgot, which shows the importance they place on these vaccinations.

This is consistent with Xie and Dow (2005) research who found that if parents are not sure about whether their children will be infected with certain diseases, they do not get immunization. Also the probability to get vaccination reduces if they are uncertain about the severity of the diseases and side effects of immunization. Our participants also highlighted the fact that the doctors and other health professionals are always busy and they do not take out the time to explain the side effects of vaccinations such as fever for a day or so. So when this happens (which is normal), the parents get worried.

Another reason for this is that most of the participants did not have any exposure to the disease that might occur because of not getting vaccinations. None of the participant had personally experienced the negative impact of any of the disease. They claimed that we hear about diseases that might occur but have not witnessed any. Thus, despite hearing the dangers of non-immunization on TV and other sources they do not take it seriously.

The other area the participants seem to have insufficient or lack of information was the process. Process includeswhere to go, which days to go, who to see, the cost and so on. As one participant mentioned:

> The hospital is big and there are so many people and everyone seems to be in a hurry. Last time we went there we were going from here and there and no one would give us the correct information. Everyone would send us to the other end. We kept looking for the room and came back. Our whole day was wasted and it was very frustrating.

The participants were asked about the vaccination campaign on TV and radio. Most said that despite having TV and radio at home. They have not paid much attention to those advertisements.

Place of delivery is also seen to be an important factor in child immunization According to Jani et. el. (2008) children delivered at hospital are more likely to be completely immunized than children delivered at home. This finding was also confirmed by the participants in this study. Almost all children to participants (except two) were home delivered. These deliveries were done with the assistance of traditional birth attendant dai. These deliveries were conducted in at home in Lahore as well as at the villages of the participants. Many participants shared that around their delivery they go back to their villages to their parents or in-laws for child birth for support and help with other younger children. As one participant shared:

> We have deliveries at home, we do not go to hospital unless there is a complication or we need an operation. This is how we have always done. It is more convenient. So there are no doctors to tell us to get our children immunized.

3.4. Accessing to Health care

The young mothers who decide to get their children immunized may also face numerous challenges in accessing immunization services. A study by Topuzoglu et.al (2007) revealed that the decision to get the children immunized might be taken by the father or family elders, yet the responsibility concerning the vaccination of the children was left only to the mother. Our data revealed similar findings were almost all the young mothers who had their children vaccinated claimed that they went to the hospital by themselves with other women friends.

The reason for their husbands not accompanying them to the health facility was the nature of their work. Many said that their husbands work on daily wage and going to the hospital would mean losing a whole day's wage. However, they shared multiple challenges that they face including their full time work, issues of mobility, affordability and so on.

3.5. Mobility and distance from the healthcare services.

None of the participants claimed any restriction on their mobility by their families. One reason might be that most of these women were working women and were moving on their own for work. However they did say that their husbands do not restrict their mobility but at the same time are concerned with their security because of crime and harassment on street. For this reason they advise them to move with other women. However, many participants shared that they are not familiar with the city as they usually move around in their neighborhood.

Many women shared that there is no government hospital close to where they live. One reason for this is the fact that the neighborhood under study is a suburban neighborhood and is not close to the city center where most government health facilities are located. The area surrounding this low income neighborhood is high end and is upper middle and upper class. All the hospitals in the vicinity are private and expensive according to the local standards. The participants said that it is difficult for them to get there in terms of distance and expense. They have to walk and change two buses to get there. Buses are usually crowded and they have to wait for long time. Many of them leave their other children alone at home or with neighbors. This finding is supported by the studies of Topozuglo et. el. (2007) and Cockcroft et. el. (2009) who find strong correlation between lack of access to vaccination services and vaccination utilization.

3.6. Harassment on Street

Harassment or a fear of harassment of women in public spaces may become a deterrent to their free movement in the city. Many participants shared that they have faced harassment while moving in the city. The harassment was both physical and psychological including inappropriate touching or gestures, following, eve teasing, unwanted comments and so on. In addition to harassment, many participants also reported mobile or purse snatching. As one participant opined:

> This (harassment) happens all the time, and it is not even age-specific men even harass older women. When we are walking or taking bus we have so many experiences of men leering at us. Stopping their cars and offering to us to go with them. Now days it has become come for men on bicycle to slap us on the back and run off.

This is a general experience of women and not linked to accessing health care, however, this do affect their mobility and decision to go out in public. These experiences may have a negative effect of the probability of women accessing healthcare.

3.7. Migrant status

This study was conducted with urban women however a link with rural residence and vaccination utilization was found. It was found that even if people migrate from villages as adults they still have strong ties with their villages and their value system.

Most of the participants claimed that despite living in Lahore their rural background and extended families influences their decision to immunize their children. Most of the women in the group lived in nuclear families away from their close kin. Thus most claim that they go back to their villages for child birth for support. Important thing to note is that despite living in cities their self-identity remains rural. Most participants called themselves villagers. They said agreed with the findings of other researches that people believe that in rural areas there is less likelihood of getting children immunized. As a participant said:

> We are from village and we villagers do not have a concept of immunizing children. I do not know why but this is how it is. We might move to cities but from inside we think like a villager. I know there are people in villages who get their children immunized but not us. No one in our extended family has done so and no child has any serious problem as well.

4. Discussion and Conclusion

The article has analyzed the data collected from young mothers on the barriers against child immunization. These participants were poor, illiterate, unskilled, and mostly working women living in Lahore. In can be concluded that perceptions about healthcare, health practitioners, and bio-medicine contributes in the decision-making of families to vaccinate their children. These perceptions are usually based on prior experiences or not just families but also the people they know and on lack of or incorrect knowledge about immunization. Media including social media plays an important source of information and misinformation. In addition, accessing healthcare may also get affected by reduced women's mobility because of fear of harassment in public spaces and may all act as barrier against child immunization. Thus, for countries like Pakistan

these barriers need to be taken into account while planning strategies to enhance the immunization program outreach.

References

Angelillo, I.F., G. Ricciardi, P. Rossi, P. Pantisano,E. Langiano,& M. Pavia. (1999). Mothers and vaccination: knowledge, attitudes, and behaviour in Italy Bulletin of the World Health Organization, 77 (3). Retrieved from http://www.who.int/bulletin/archives/volume77_3/en/index.html

Antai, D. (2009). Inequitable childhood immunization uptake in Nigeria: amultilevel analysis of individual and contextual determinants. -BMC Infectious Diseases.9:181 doi:10.1186/1471-2334-9-181

Benin, A.L., D.J. Wisler-Scher, E. Colson, E.D. Shapiro & S. Eric. (2006). The Importance of Trust Qualitative Analysis of Mothers' Decision-Making about Vaccines for Infants**.** -Pediatrics; 117: 1532—1541. doi:10.1542/peds.2005-1728

Bernsen, R. M., F. R. Al-Zahmi, N.A.Al-Ali., R.O. Hamoudi, N.A. Ali, J. Schneider, J. Al-Mutawa &M. Grivna.(2011). Knowledge, Attitude and Practice towards Immunizations among Mothers in a Traditional City in the United Arab Emirates .-Journal of Medical Sciences ; 4(3): 114-121. Retrieved fromhttp://www.benthamscience.com/open/jms/articles/V004/S30114JMS/114JMS.pdf

Berry, N. J., A. Henry, M. Danchin, L.J. Trevena, H.W. Willaby, & J. Leask. (2017). When parents won't vaccinate their children: a qualitative investigation of australian primary care providers' experiences.- BMC pediatrics, 17(1), 19.

Bofarraj, M., A.M. (2011).Knowledge, attitude and practices of mothers regarding immunization of infants and preschool children at Al-Beida City, Libya 2008. -Egypt J Pediatr Allergy Immunol ;9(1):29-34.

Bugvi, A.S., R. Rahat, R. Zakar, M.Z. Zakar, F. Fischer, M. Nasrullah & R. Munawar. (2014). Factors associated with non-utilization of child immunization in Pakistan: evidence from the Demographic and Health Survey 2006-07.-BMC Public Health.

Cockcroft , A., N. Andersson, K. Omer, N.M. Ansari, A. Khan, U.C. Ubaid &U.Ansari. (2009). One size does not fit all: local determinants of measles vaccination in four districts of Pakistan.BMC International Health and Human Rights.9(Suppl 1):S4 doi:10.1186/1472-698X-9-S1-S4

Duclos, P., J. Okwo-Bele, M. Gacic-Dobo & T. Cherian. (200). Globalimmunization: status, progress, challenges and future (Opinion).-BMC International Health and Human Rights, 9(Suppl 1):S2. doi:10.1186/1472-698X-9-S1-S2.

Farrukh, M.J.,L. C.Ming, S. T.R. Zaidi& M.K. Khan.(2017). Barriers and strategies to improve influenza vaccination in Pakistan.-Journal of Infection and Public Health.10 (6): 881-883

Jani, J. V., C.D.Schacht, I.V. Jani &G. Bjune. (2008). Risk factors for incompletevaccination and missed opportunity for immunization in rural Mozambique.-BMCPublic Health.8:161. doi:10.1186/1471-2458-8-161

Manjunath U & R.P. Pareek.(2003).Maternal knowledge and perceptions about theroutine immunization programme--a study in a semi urban area in Rajasthan.-Indian J Med Sci [serial online] ;57:158-63. Available from: http://www.indianjmedsci.org/text.asp?2003/57/4/158/11921

Masud, T. &K.V. Navaratne. (2012). The Expanded Program on Immunization in Pakistan Recommendations for Improving Performance. Health, Nutrition and Population (HNP) Discussion Paper. The International Bank for Reconstruction and Development/The World Bank: Washington, DC. Retrieved fromhttp://siteresources.worldbank.org/HEALTHNUTRITIONANDPOPULATION/Resources/281627-1095698140167/EPIinPakistan.pdf

Mumtaz, Z. and S. Salway.(2005). 'I never go anywhere': extricating the links between women's mobility and uptake of reproductive health services in Pakistan.-Social Science & Medicine, 60(8), 1751–1765. 10.1016/j.socscimed.2004.08.019,

NIPS. (2019). Pakistan Demographic and Health Survey 2017-18. Islamabad, Pakistan. and Rockville, Maryland, USA: NIPS and ICF

Owais, A., B. Hanif, A.R. Siddiqui, A. Agha & A.K.M. Zaidi. (2011). Does improving maternal knowledge of vaccines impact infant immunization rates? A community based randomized-controlled trial in Karachi, Pakistan.-BMC Public Health. 11:239. Retrieved from http://www.biomedcentral.com/1471-2458/11/239.

Pakistan Sees Rise in Measles Cases. (2013, January 2).French Tribune online Retrieved from http://frenchtribune.com/teneur/1315227-pakistan-sees-rise-measles-cases

PILdAT (2010). Immunization. Briefing Paper Immunization in Pakistan. PILdAT, Islamabad.
Rammohan, A., Awofeso, N. and Fernandez, R. C. (2012). Paternal education status significantly influences infants' measles vaccination uptake, independent of maternal education status. BMC Public Health; 12:336. Retrieved from http://www.biomedcentral.com/1471-2458/12/336.

Riaz. A, S.Hussain, M. T. Yousafzai, I. Nisar, F. Shaheen, W. Mahesar, S. M. Dal, S. B. Omer, S. Zaidi & A. Ali. (2018).Reasons for non-vaccination and incomplete vaccinations among children in Pakistan.-Vaccine, 36 (35): **5288-5293**

Rohini, P. (2003). Selective Gender Differences in Childhood Nutrition and Immunization in Rural India: The Role of Siblings. Demography, 40(3): 395-418 (Article). Published by Population Association of America.

Shaikh, B. T., Z. Ulhaq, N. Tran & A. Hafeez. (2018). Health system barriers and levers in implementation of the Expanded Program on Immunization (EPI) in Pakistan: an evidence informed situation analysis.- Public Health Reviews 39(1), 1-10.

Tadesse, H., A. Deribew, & M. Woldie. (2008). Predictors of defaulting fromcompletion of child immunization in south Ethiopia, May 2008 – A case control study.- BMC Public Health.9:150 doi:10.1186/1471-2458-9-150

Topuzoglu, A., P. Ay, S. Hidiroglu, & Y. Gurbuz. (2007). The barriers againstchildhood immunizations: a qualitative research among socio-economicallydisadvantaged mothers. European Journal of Public Health, 17(4): 348–352. doi:10.1093/eurpub/ckl250.

Torun, S. D. and N. Bakirci. (2006). Vaccination coverage and reasons for nonvaccination in a district of Istanbul. BMC Public Health, 6:125. doi:10.1186/1471-2458-6-125

Wain, Z. N., Masood, R. A., Ali, R. W., & Bashir, I. (2016). An overview of immunization practices in Pakistan. International Current Pharmaceutical Journal, 5(11), 94-96.

WHO (1984) Immunization in Practice: A Guide for Health Workers Who Give Vaccines. Module 1: Vaccines and When to Give Them.Geneva: Department of Vaccines and Biologicals, World Health Organization.

WHO (2021). Immunization Coverage. Retrieved from

https://www.who.int/data/gho/data/themes/topics/immunization-coverage

Xie, J. and W.H. Dow. (2005). Longitudinal study of child immunization determinants in China. Social Science & Medicine; 61: 601–611. doi:10.1016/j.socscimed.2004.12.016.