

Factors Influencing the Participation of Mothers of Mothers in the Expanded Programme on Immunization, in the Nkoranza South Municipality, Ghana

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Abstract

The WHO, in 1974, proposed and launched the Expanded Programme on Immunization to immunize children against 6 childhood killer and other diseases, aimed at achieving and maintaining more than 90% coverage with all the vaccines. However this has not been achieved.

The purpose of the study was to determine the factors influencing the participation of mothers of mothers in the Expanded Programme on Immunization, in the Nkoranza South Municipality.

Study Population: The study population comprised of mothers with children less than five years who are attendants at St. Theresa's Hospital, Nkoranza Municipality. Study Design: A descriptive study with cross-sectional design was carried out to evaluate knowledge of mothers' on the importance It was conducted over a six weeks period. Sampling Method: Purposive sampling was used to select 150 respondents for this study. It enabled the selection of unique cases in which the result may or could be extended to the whole population. The units or respondents were intentionally picked for the study because of their characteristics or qualities which are not randomly distributed among the general population but they exhibit most of the characteristics of interest of the study. Sample Size: A sample size of 150 was chosen out of convenience from the municipality. It comprised of mothers of children less than five years. Data Collection: A questionnaire comprising both closed and open ended questions were administered to respondents. The questionnaire was pre-tested on randomly selected mothers awaiting consultation in the OPD. Both English and Twi languages were used in the administration of the questionnaire. Data Analysis: The data gathered was analyzed both manually and using Microsoft Excel and the results were expressed in percentages using charts and tables. The results obtained showed that the most popular reason for defaulting was that the mother travelled at the time the child was to be immunized (36.36%). This shows absence of knowledge that in so far as the mother is in possession of the child's Road To Health Chart, the child will be immunized. The results also revealed that most of the mothers had heard about immunization (98%) and believed it cured disease (42.6%). The smaller proportion who knew it prevented disease (24.7%), were knowledgeable about the diseases it prevented. Just over half the children in the study were fully immunized (55.3%) and almost a quarter of the children had either defaulted or never been immunized. Presence of side effects, The mothers who said their children experienced side effects were asked to specify what kind of side effects the children had. Over half the mothers (56.25%) complained of fever, 35.4% of the mothers complained that the vaccination site got swollen. Other mothers with complaints (8.3%) complained of things like excessive crying and other non specific symptoms. This study revealed that the more than half (55.3%) of the children were fully immunized. the proportion of those who had not been fully immunized (22%) and those whose immunization was up to date (21.3%) was about the same. the lowest percentage was recorded for those who had received no vaccinations at all (1.3%). The main conclusions drawn The most common reason was that the mother travelled long distance (36.36%) at the time the child was due to receive the next vaccination and did not take the child when she returned because the time had passed. the next reason was that the child was ill (15.15%) at the time he/she was supposed to receive the vaccination and was not taken to the

immunization centre upon recovery. the ill child tied with mother being too busy with work (15.15%) to take the child to the immunization point. also tying, were the mother being ill, so she was unable to take the child and postponing the immunizations for social functions etcetera with 12.12%. and also that mothers did not have sufficient knowledge about vaccine preventable diseases, also a little than half of the people surveyed had fully immunized their children.

Keywords: Distance travel, sufficient knowledge, cure disease, defaulted immunization, bibliographic data, and side effects.

Introduction

When the Expanded Program on Immunization (EPI) was launched in 1974, less than five per cent of the world's children were immunized during their first year of life against six killer diseases polio, diphtheria, tuberculosis, pertussis (whooping cough), measles and tetanus. Today, nearly 75 per cent of children receive these life-saving vaccinations and increasing numbers are also protected by new and under-used vaccines, like Hepatitis B.¹ However, a quarter of the world's children – about 34 million infants – are not immunized against these killer diseases. While globally rates have risen, immunization levels have actually decreased in some countries (UNICEF 2001). Measles re-emerged in some countries in Germany in 2005, despite increasing vaccination coverage rates in children at school entry in recent years, which had led to decreasing incidences (with the lowest incidence ever recorded, 0.2 cases per 100 000 inhabitants in 2004). Immunization coverage in sub-Saharan Africa had dropped to just above 50 per cent in 2000, and in 12 of the poorest countries rates are below 35 per cent (UNICEF 2001).³ In developing countries it is not enough to implement good programs. One must make sure that everything needed to make it successful is in place. So long as the caregivers fail to send their wards to be immunized the EPI cannot be a success.

Ghana has adopted an integrated approach to Disease Surveillance and Response. The diseases targeted are those for elimination, eradication, of epidemic potential and special diseases of public health concern. Of particular concern are the Vaccine Preventable Diseases. The aim of a national childhood immunization program is to cover as many children as possible thus protecting them from the most dangerous killer diseases and increasing their likelihood of survival (Ministry of Health, Ghana 1999). Unfortunately, some infants do not complete this potentially lifesaving program. Data on awareness of mother's knowledge of the importance of Expanded Programme on Immunization and the reasons they default which will inform the Health Sector to plan strategies to combat these and further the coverage of Expanded Programme on Immunization is lacking. In 1853 the English Government passed an act making vaccination compulsory across the United Kingdom, however, not everyone liked the idea of exposing oneself to 'such filth'. In 1898 another act was produced which recognized the right of the 'conscientious objector', meaning vaccination was encouraged but not compulsory. Since the first discovery of the smallpox vaccine by Jenner many vaccines have been produced. In the late 1800's Louis Pasteur established the germ theory and developed the vaccine against rabies, whilst Emil von Behring and Shibasaburo Kitasato discovered the antitoxins of diphtheria and tetanus leading to the production of vaccines for both diseases. By the end of the 1920s, vaccines for diphtheria, tetanus, pertussis (whooping cough) and tuberculosis (BCG) were all available. In developing countries it is not enough to implement good programs. One must make sure that everything needed to make it successful is in place. So long as the caregivers fail to send their wards to be immunized the EPI cannot be a success.

In a case-control analysis of cross-sectional data, 328 children aged 12–35 months and their mothers were studied to identify the factors associated with delayed or non-immunization of their children. Delayed or non-immunization was associated with low socio-economic status, maternal illiteracy, and lack of mothers' knowledge on vaccine preventable diseases as recommended by the Expanded Programme on Immunization (EPI). The association of this lack of mother's knowledge with no or delayed immunisation persisted

after adjusting the effects of others in logistic regression analysis. The results indicate that even in the presence of maternal illiteracy, educating mothers about the vaccines and vaccine preventable diseases may be highly effective in increasing the immunization coverage (Smith et al; oxford journals).²

¹Singh et al in a study carried out in BIMARU States in 2001 on Reasons for Non-Immunization: found that "Obstacles" was the most often mentioned reason for non-immunization, 38.8% of the mothers reported. 25.2% had misconceptions/beliefs about immunization such as fever after immunization for a healthy child might be harmful, too many doses, elders believed that vaccines are not needed etc. 7.8% reported that the child was sick at the scheduled time and 9.7% lacked information about the program. 18.5% said some non-specific reason such as "were lazy, forgot, lost the card etc.

By contrast, medical officers rarely undertake immunization in Ghana. Community health nurses who mostly actually administer vaccines may not be well vested with knowledge in the field and are thereby often found preaching handed down oral "wisdom" to mothers.

Material illiteracy was thought to have an overwhelming effect on immunization coverage rate. In a study in Natal and Kwazulu townships in South Africa, the notion was disproved as thorough education of predominantly illiterate mothers on the importance and benefits of immunization was reported to have lead to a significant rise of coverage rates in the townships (Taylor 2000). A similar study in Bangladesh indicated that, even in the presence of maternal illiteracy, educating mothers on immunization and vaccine-preventable diseases is highly effective in increasing immunization coverage (Rahaman et al 2000). Resources for the study were limited because the researcher has to buy needed things for the research without sponsorship, time constraint also a big factor due to the fact that the researcher was not able collect data continuously within a short period. Source of information regarding EPI is important to establish authenticity of information received by mothers. Deborah A. Gust et al carried out a study in the USA on Developing tailored immunization materials for concerned mothers (August 2007). Comments on the revised educational materials (brochures) were generally positive, with many mothers noting that the new brochures provided more relevant information and conveyed it in a respectful way. Science-based tailored immunization materials may assist health care providers in addressing unique information needs and may improve vaccine acceptance among specific types of mothers.

Methods

Study area was the St Theresa's hospital is situated in the middle of Nkoranza Township. It was built by the Roman Catholic Church in 1973. The hospital has Medicine and Therapeutics, Obstetrics and Gynaecology, Surgery, Paediatrics, Occupational and primary health care. The Hospital has 43 Nurses, 7 Doctors, and 6 Medical Assistants, 2015 during the survey. The facility is headed by the hospital management team consisting of five (5) members with the administrator being the head of the team. The hospital serves the whole Nkoranza municipality. The St. Theresa's Hospital was the study area for this research because of its proximity and its easy accessibility to the research. **Study design:** descriptive study with cross-sectional design was carried out to evaluate knowledge of mothers' on the importance of Expanded Programme on Immunization in the Nkoranza South Municipality in the Brong Ahafo Region of Ghana. It was conducted over a six weeks period. **Study population:** The study population comprised of mothers with children less than five years who are attendants at St. Theresa's Hospital, Nkoranza Municipality. **Sampling technique:**

¹ World Health Organization, & Expanded Programme on Immunization. (1985). EPI: A global overview. 69 (72), 17-89-104.

² Information & Knowledge for Optimal Health (INFO) Project. (2008). Retrieved 11/02, 2008, from www.poline.org

³ Information & Knowledge for Optimal Health (INFO) Project. (2008). Retrieved 11/02, 2008, from www.poline.org

Purposive sampling was used to select 150 respondents for this study. It enabled the selection of unique cases in which the result may or could be extended to the whole population. The units or respondents were selected not by a random procedure but they would be intentionally picked for the study because of their characteristics or qualities which are not randomly distributed among the general population but they exhibit most of the characteristics of interest of the study. **Sample size:** A sample size of 150 was chosen out of convenience from the municipality. It comprised of mothers of children less than five years. **Data collection:** A questionnaire comprising both closed and open ended questions were administered to respondents. The questionnaire was pre-tested on randomly selected mothers awaiting consultation in the Out Patient Department. Both English and Twi (one of Ghanaian local dialect) languages were used in the administration of the questionnaire. **Data analysis:** The data gathered was analyzed both manually and using Microsoft Excel and the results were expressed in percentages using charts and tables.

Results

The biographic data of the respondents yielded the following, Most of the mothers fell in the 26-30 age range (32%), and only 2% were in the 41-45 range. The age of the mothers had no bearing on the immunization status of the children. More than half the mothers (59.3%) had no formal education. A good percentage (28.7%) had primary education; a smaller percentage (10%) had achieved secondary education to the Junior High School level whilst only 2% made their way to tertiary institutions. Majority of the mothers interviewed were Christians (84%) a small proportion were Muslim (14%) whilst only 2% professed no faith at all. With the level of education the results are not surprising. Of the 150 mothers interviewed 32.7% (the highest percentage) were housewives. Petty trading had the highest percentage for working mothers (27.3%) whilst farming had the least percentage with 11.3%. The Other occupations not included in the questionnaire cumulatively exceeded petty trading with 28.7% and this included seamstresses, hairdressers and factory workers. Regarding perception and knowledge of the importance of expanded programme on immunization, Majority of the mothers (98%) have heard about immunization, only 2% of the mothers had never heard about immunization. Of the 98 % that had heard, 92 % said they knew what it could do for their children and 8% didn't know what it could do for their children. Further questioning revealed that 42.6 % which was most of the mothers thought immunization could cure disease. 24.7% of the mothers knew immunization could prevent disease. About 6% were not sure what benefit immunization gave their children though they knew it was good for them. 26.7% of the mothers had other opinions of what immunization could do for their children some of these were that it gave strength and it made the children healthy. They were asked to specify the diseases it could prevent. Polio recorded the highest percentage with 85%. Measles and Whooping cough came up next in frequency with a percentage of 82.5%. Tetanus also had a high percentage (70%). Tuberculosis recorded a percentage of 37.5, convulsion following with 27.5% and worms 20%. The least percentages were recorded for childbirth and AIDS with 7.5% and 5% respectively. Majority of the mothers (68%) received the information from health workers during Antenatal Care visits and outreaches from community health workers. 21.3% said they received the information from their friends. 8.7% said they had heard from radio talk shows and two percent received the information from other sources which included husbands, co-workers and wives. Presence of side effects, The mothers who said their children experienced side effects were asked to specify what kind of side effects the children had. Over half the mothers (56.25%) complained of fever , 35.4% of the mothers complain that the vaccination site got swollen. Other mothers with complaints(8.3%) complained of things like excessive crying and other non specific symptoms

The questionnaire on immunization status of the children, majority of children (62%) who defaulted stopped after receiving Penta 3 and OPV3 and were not taken to receive their vaccinations against Measles and Yellow fever.

Discussion

On socio-demographic characteristics of respondents: More than half the mothers (59.3%) had no formal education. a good percentage (28.7%) had primary education; a smaller percentage (10%) had achieved secondary education to the Junior High School level whilst only 2% made their way to tertiary institutions. the literacy level of the mothers did not show any effect on the immunization status of the children. corresponding with studies by Taylor et al (2000) and Rahaman et al (2000) which showed that education of illiterate mothers on immunization significantly improved coverage rates. majority of the mothers interviewed were Christians (84%) a small proportion were Muslim (14%) whilst only 2% professed no faith at all. religion had no effect on immunization status of the children unlike the study done by professor M. Kabir et al in 2006 in which their religion being against immunization was the reason for not vaccinating their child.

On perception and level of knowledge of mothers of the importance of expanded programme on immunization: The study showed that majority of the mothers (98%) had heard about immunization, only 2% of the mothers had never heard about immunization. of the 98 % that had heard, 92 % said they knew what it could do for their children and 8% didn't know what it could do for their children. this corresponds with a study done in Dominica republic which showed that although it is highly desirable that mothers have good knowledge about the diseases, the lack of this knowledge does not appear to influence their seeking immunizations for their children. they consider immunizations to be very important and understand that they protect against very serious diseases. it does not appear, therefore, that the program should give much priority to addressing mothers' lack of knowledge regarding the diseases.

The immunization coverage of children under 5years: This study revealed that the more than half (55.3%) of the children were fully immunized. the proportion of those who had not been fully immunized (22%) and those whose immunization was up to date (21.3%) was about the same. the lowest percentage was recorded for those who had received no vaccinations at all (1.3%). this is not comparable to rates recorded in Rwanda which has an astonishing 96% immunization coverage for children less than one year of age. that is even higher than the 95% rate reported for the industrialized countries. however the rates are similar to those in the Manjunath et al study on maternal knowledge and perceptions about the routine immunization programme in a semi-urban area in Rajasthan (January 2003) which revealed that 83 out of 166 children in the study (50.0%) were fully immunized, 52 (31.3%) were partially immunized and 31 (18.7%) were not at all immunized.

The source of information of mothers on immunization: majority of the mothers (68%) received the information from health workers during antenatal care visits and outreaches from community health workers. 21.3% said they received the information from their friends. 8.7% said they had heard from radio talk shows and two percent received the information from other sources which included husbands, co-workers and senior wives. brochures, which were cited in Deborah a. gust et al study (august 2007) in the USA on developing tailored immunization materials for concerned mothers, were not a source information for these mothers.

Reasons mothers default from the expanded programme on immunization: the most common reason was that the mother travelled (36.36%) at the time the child was due to receive the next vaccination and did not take the child when she returned because the time had passed. the next reason was that the child was ill (15.15%) at the time he/she was supposed to receive the vaccination and was not taken to the immunization centre upon recovery. the ill child tied with mother being too busy with work (15.15%) to take the child to the immunization point. also tying, were the mother being ill, so she was unable to take the child and postponing the immunizations for social functions etcetera with 12.12%. occurring less frequently were problems with the health facility (9.09%) such as unfriendly staff and far distance of health facility. none of the mothers gave a religious reason for defaulting and this recorded a zero percentage. the reasons for defaulting differ from those given by Singh et al in

their study on reasons for non-immunization in which "obstacles" was the most often mentioned reason for non-immunization, 38.8% of the mothers reported. 25.2% had misconceptions/beliefs about immunization such as fever after immunization for a healthy child might be harmful, too many doses, elders believed that vaccines are not needed etc. 7.8% reported that the child was sick at the scheduled time and 9.7% lacked information about the programme. 18.5% said some non-specific reason such as "were lazy, forgot, lost the card etc." another revelation by the study was that 32% of the mothers complained about side-effects following immunization and these formed 24.24% of the children whose mothers had defaulted from the programme even though none of them gave this as a reason. Further research on the knowledge on immunization by parents. Many of the mothers do not really value immunization so important for their children especially in developing countries

Conclusion

It is noted from the results that a significant proportion of the major factors influencing mothers participation were long travel distance as in developing countries most people are cut off from the city due to bad roads. Lack of requisite information on immunization is a factor that reduces participation level. Most importantly only 55.3% were fully immunized according to the study. A lot still need to be done on immunization in developing countries and Africa. **Perception and knowledge of the importance of Expanded Programme on Immunization:** The conclusion drawn from this objective was that most of the mothers (98%) in Nkoranza South municipality had heard about immunization. **Source of information about Expanded Programme on Immunization:** Most of the mothers received their information (68%) from health workers. **Reasons Mothers default from the Expanded Programme on immunization:** The most commonly occurring reason for defaulting from the EPI was that the mother had travelled at the time for the child's vaccination. Knowledge about the usefulness and nature of vaccines is limited in the Nkoranza South Municipality as almost half (42.6%) of the mothers hold the belief that it cures disease. **Immunization coverage of children under 5years:** Estimation of the immunization coverage of children under 5years revealed that just over half (55.3%) were fully immunized. The study incidentally revealed adverse effects following immunization as an important reason for defaulting from the programme that was not directly conveyed by the mothers. Based on the conclusions drawn from the study the following recommendations are being made to improve on the Expanded Programme on Immunization in the Nkoranza South Municipality. The Regional Health Directorate and Municipal Health Management Team should facilitate the training more public health nurses to help in the Expanded Programme on Immunization program since most respondents acquired the knowledge they had on the Expanded Programme on Immunization through them. Mothers should also be educated by health workers on the timing, number of doses and vaccine preventable diseases during Antenatal Clinic talks about immunization as well as outreach programmes by community Health workers. Mothers should also be informed that wherever they find themselves, they should report at immunization point with the child's Road To Health chart and have the child immunized with the record registered in the chart. The municipality should sponsor the dissemination of information through mass media. Information could take the form of radio shows and or posters which can be used to educate mothers on adverse effects following immunization to enable them learn what to do about them and act accordingly thereby reducing the number of children who default on account of side-effects. Parents and Guardians should make every attempt to ensure their children and wards fully participate in the Expanded Programme on Immunization. This will improve their chances of survival when exposed to the Vaccine preventable diseases.

Figures and tables

Table 1.0. Socio-demographic characteristics of respondents

	Number of Mothers	Percentage of Respondents (%)
AGE		
16-20	21	14
21-25	45	30
26-30	48	32
31-35	20	13.3
36-40	13	8.7
41-45	3	2
LEVEL OF EDUCATION		
None	89	59.3
Primary	43	28.7
Secondary	15	10
Tertiary	3	2
OCCUPATION		
Farmer	17	11.3
Trader	41	27.3
Housewife	49	32.7
Other	43	28.7
RELIGION		
Christians	126	84
Muslims	21	14
Others	3	2

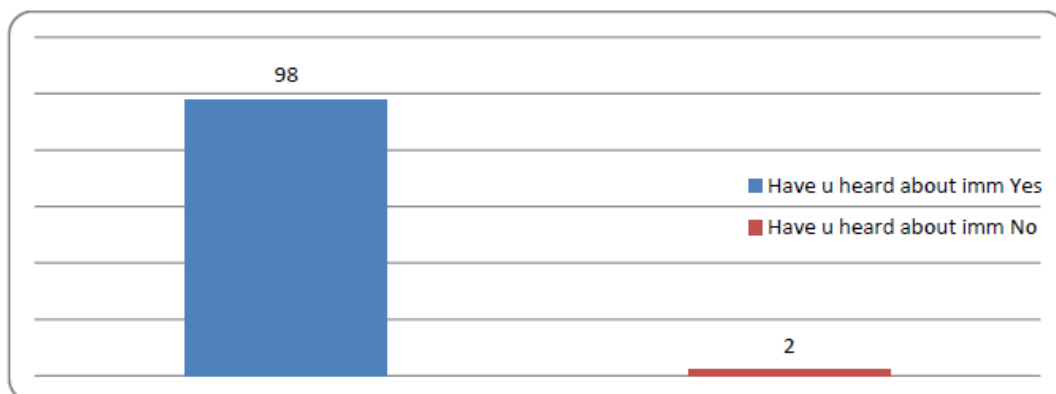


Figure 1.0. have you heard about immunization

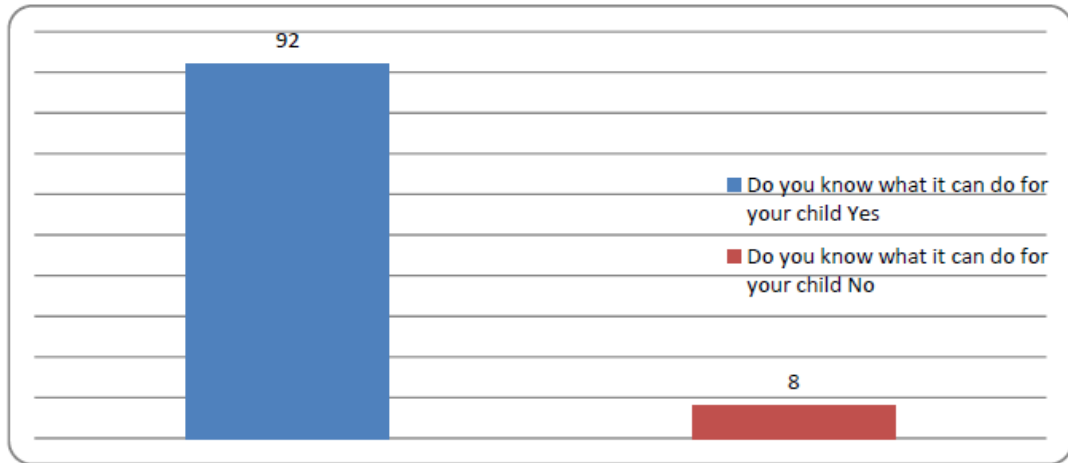


Figure 1.1. do you know what immunization can do for your child

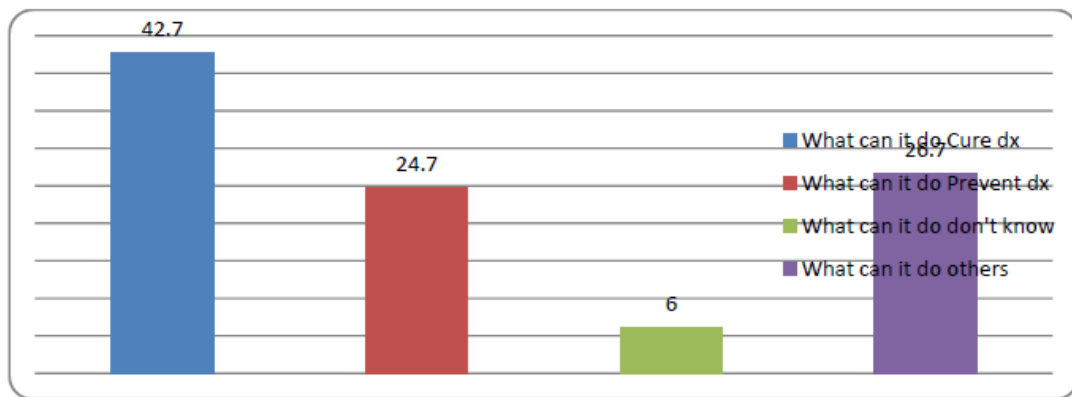


Figure1.2. what can immunization do

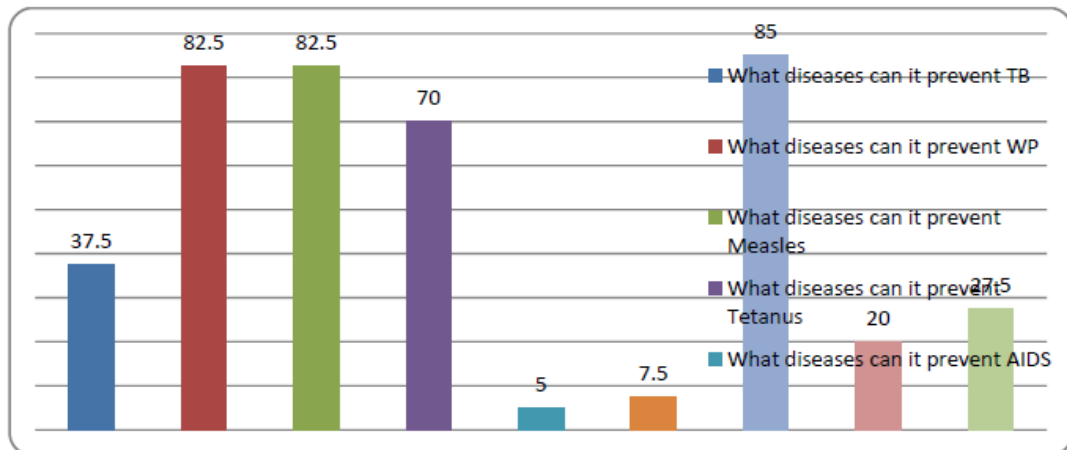


Figure 1.3. diseases vaccines are thought to prevent

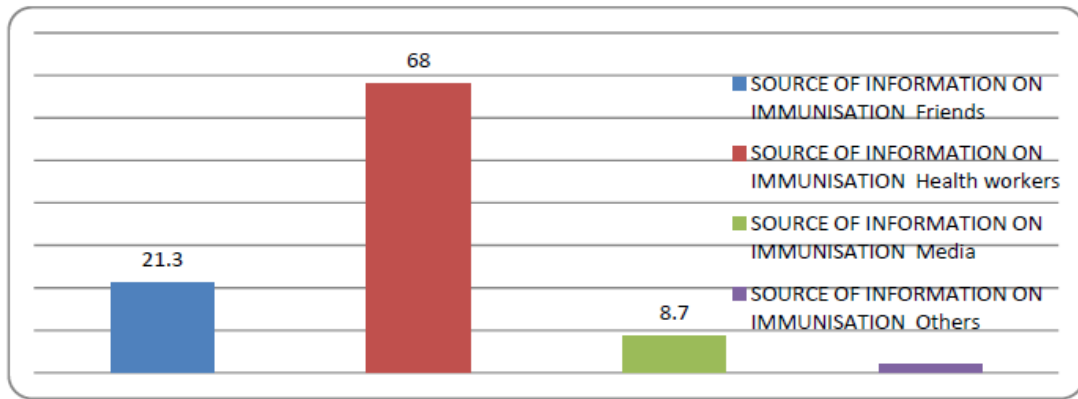


Figure 1.4. source of information on immunization

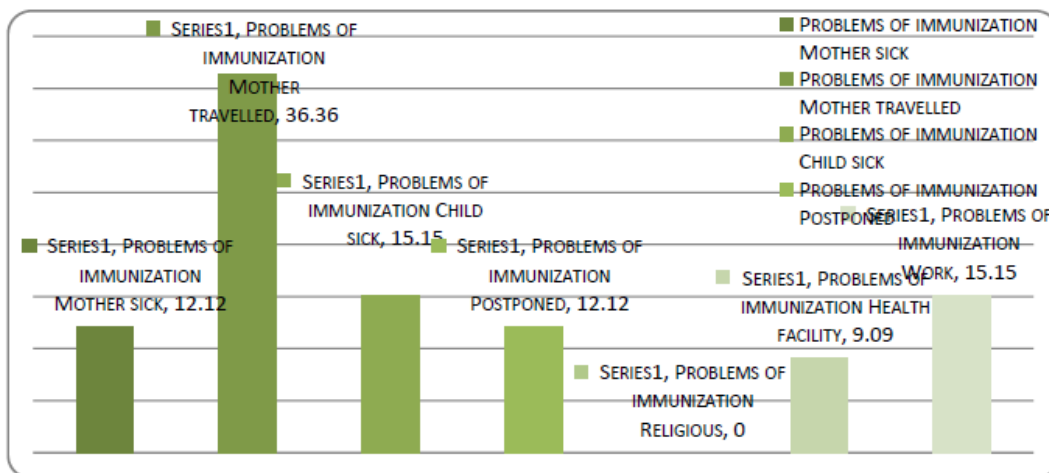


Figure 1.5. problems of immunization reasons mothers' default from expanded programme on immunization

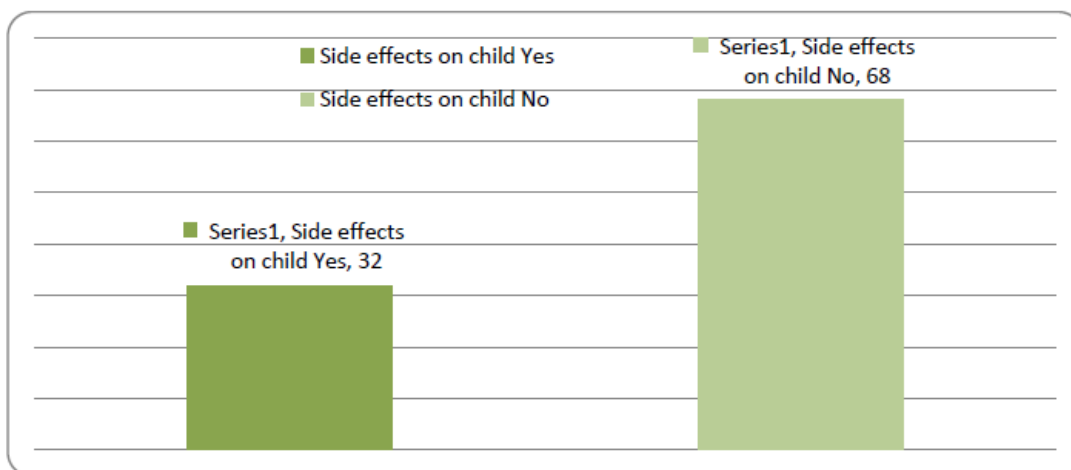


Figure 1.6 presences of side effects following immunization

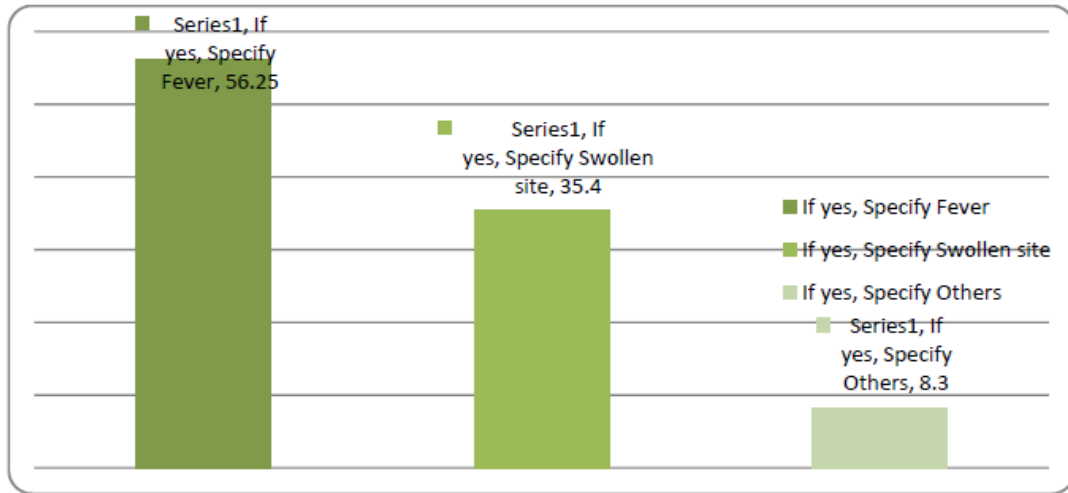


Figure 1.7. side effects following immunization

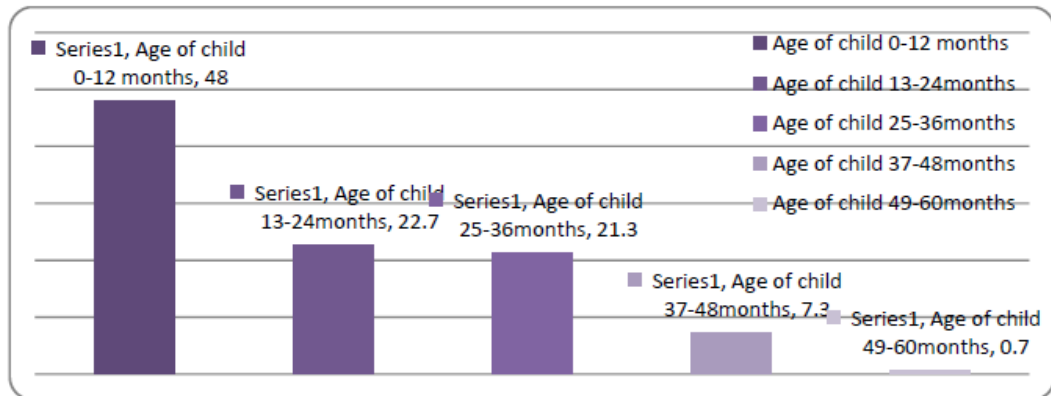


Figure 1.8. immunization coverage of children under 5 years of age distribution

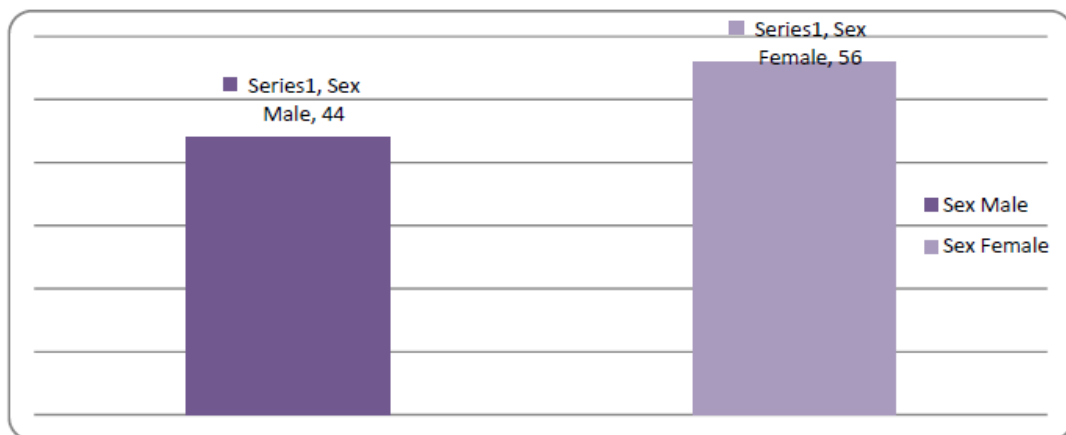


Figure 1.9. gender distributions of the children

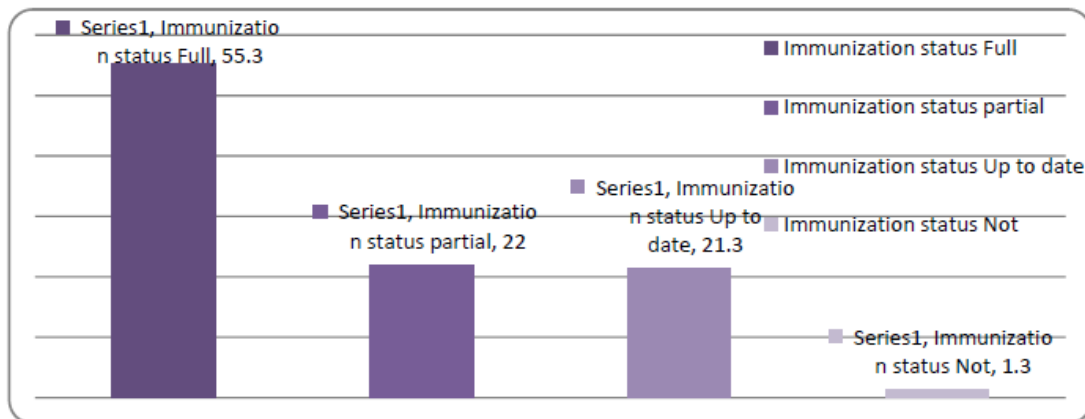


Figure 2.0 immunization statuses of the children

Acknowledgement

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