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RESEARCH ARTICLE

THE LAST FRONTIER OF RESISTANCE: REFUSALS TO ORAL POLIO VACCINATION IN SIX DISTRICTS OF KANDAHAR PROVINCE OF AFGHANISTAN.

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Abstract

Background: Refusal to the Oral Polio Vaccine (Henceforth referred to as OPV) is a difficulty faced by the Polio Eradication Initiative (PEI) in the most dangerous and highly endemic areas, in Kandahar, Afghanistan. Through our survey during the period of 2015-2016, we investigated community perceptions of the OPV and estimated the prevalence of OPV refusal in 6 Very high risk districts (VHRDs) of polio-endemic areas in the province of Kandahar.

Methods: Cross-sectional survey was conducted among the caregivers of refusal families with children aged <5 years. The study was conducted at the community level of 6 very high risk districts of Kandahar province. For the first section of the study, multistage cluster sampling technique was adopted. The primary sampling units were families obtained by the Polio vaccination team. At the first stage, a total of 400 households were randomly selected from 4000 refusal families in 6 districts, using Probability Proportion to Size (PPS) technique. The sample consisted of 400 households selected for the survey. All target houses were interviewed in the survey.

Discussion: The survey identified the reasons behind refusals to OPV. There are numerous reasons given by the respondents, where some had only one reason for refusing OPV whilst others had multiple misconceptions. These misconceptions include, vaccines will cause impotence because it is a western conspiracy, and that the vaccine is not safe. Others did not even believe in the effectiveness of the vaccine provided. Some were against it for cultural reasons such as the prohibition of bringing out a new-born outside of the house. While others thought it was not allowed by the religion. Other reasons included too many campaigns, political differences with the government and males members of the family not at home at the time of immunization. In the 6 districts, the rate of refusal ranged from 20% up to 60% (WHO, 2009).

Recommendations: The approach has to be modified by the PEI to reflect ground realities considering the local value system in the path to polio eradication in the surveyed districts. During this article we have established that the awareness level of the caregivers is high. Almost 80% of the residents know about the campaigns. Even though the caregivers know about the timing of immunization there is a lack of knowledge of potential risk associated with retracting the virus. The

program has to work harder to make people realize the dangers of not vaccinating their children not only for their children but all the children of the vicinity.

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Introduction:-

The World Health Assembly (WHA) in May 2017 has declared polio eradication as a Global Programmatic Health Emergency (WHO, 2017). Despite many efforts taken by the Government of Afghanistan and development partners, still the challenges remain in polio eradication and routine immunization (WHO, 2009), which is observed in this survey as well. The results of the survey provide an insight into the knowledge, attitude and practices with regards to polio disease, polio vaccination and routine immunization among the primary caregivers of children below five years of age. The findings can be used to develop evidence based communication strategies to convince the refusal families and caregivers in the high-risk districts of Afghanistan. Development of these strategies will ultimately lead to an increase in vaccination coverage of the target children, where the unimmunized children can be up to 60% according to a WHO survey in the endemic areas of the world (WHO, 2009).

This is a unique documentation of the challenges daily faced by health workers, engaged in the eradication of Polio from one of the most dangerous places on earth, Kandahar. The dissertation sheds light on the difficulties of dealing with cultural, religious, economic, political and uneducated misconceptions, which has roots in uninformed misguided minds of individuals posing a threat not only to themselves and their families but the whole region. Never before has anyone gathered the data of the high percentage refusals in this region. I hope that with this effort a more effective and collaborated reforms will come to place ending the endemics of the paralyzing disease not only in Kandahar and Afghanistan but the whole world so that only a memory of the horrible disease is left for historians to remember in the future.

Refusals to Oral Polio Vaccination in six districts of Kandahar Province of Afghanistan:

What are associated with oral polio vaccination refusals in 6 Very High Risk Districts of Kandahar province of Afghanistan?

Background:-

Polio eradication activities, started in Afghanistan in 1994, and the campaign have entered a crucial phase. During the current year 2017, as of June 5 polio cases have been reported in the country. Despite tremendous progress made towards polio eradication, challenges still exist.

In order to vaccinate all children below 5 years of age and bring the transmission of poliovirus to a complete stop, Supplementary Immunization Activities (henceforth referred to as SIAs) such as National Immunization Days (NID), Sub National Immunization Days (SNID), Short Interval Additional Doses (SIAD) and mop-ups are being conducted regularly in Afghanistan. While the campaigns are reaching and vaccinating majority of children, a reasonable number of children are still repeatedly missed, especially in the security compromised areas of the country.

Afghanistan is still on the list of polio endemic countries due to the protracted insecurity, mass population movement, low level of awareness about polio campaign and community beliefs, attitudes and practices regarding polio vaccination. To enhance knowledge of the community about polio vaccine and generate demand for vaccination, a variety of communication/social mobilization activities are taking place in the whole country, with special focus on the high risk districts of South Region. During different phases of the polio campaigns, a variety of data is collected regularly. It captures the process and output indicators, related to the operational and communication aspect of the program. The data is collected from across the country, during and after every polio campaign at the cluster level, the smallest geographic unit. The existing system collects data on a number of refusals, as part of the missed children without any explanation of the refusal.

Southern region especially Kandahar province of the country is a high priority region for polio eradication in the country. It is a reservoir of polio cases and possibly exporting the cases to other parts of the region. According to the post campaign assessment (PCA) data and intra campaign data, on the average 11% of the target children are missed during the campaign (Survey: 2013, PCA data). Out of these total missed children, 49% were missed due to

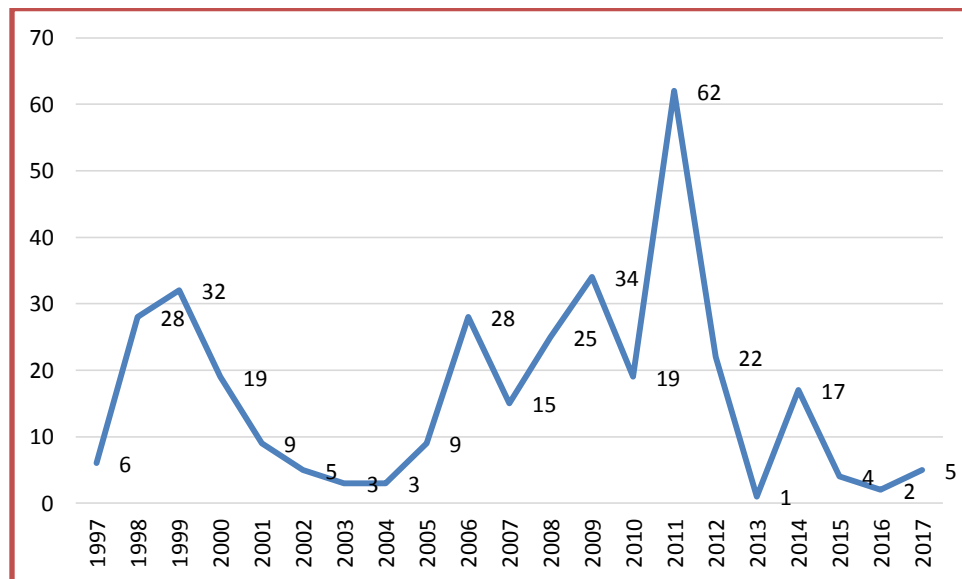
the absence of child during the campaign, while another 5% did not receive vaccine due to refusals (PCA data). So far, through the existing data collection system, no data is available on why these people refuse to get their children vaccinated by OPV during polio campaigns and there are none real solutions suggested.

Therefore it is the need of the hour to further supplement the polio eradication efforts with a strong communication component that is based on quality information and understanding of the local knowledge, concerning polio vaccination. To address this need for information, a research needs to be carried out in the district of Kandahar of south region, showing an increased trend in refusals, hence it is targeted by this research thesis. Findings of this research will be used for evidence based communication planning to stem the rising trend of refusals in the southern region as a whole and specifically in 6 very high risk districts helping to reduce chronically missed children and ultimately filling existing gaps.

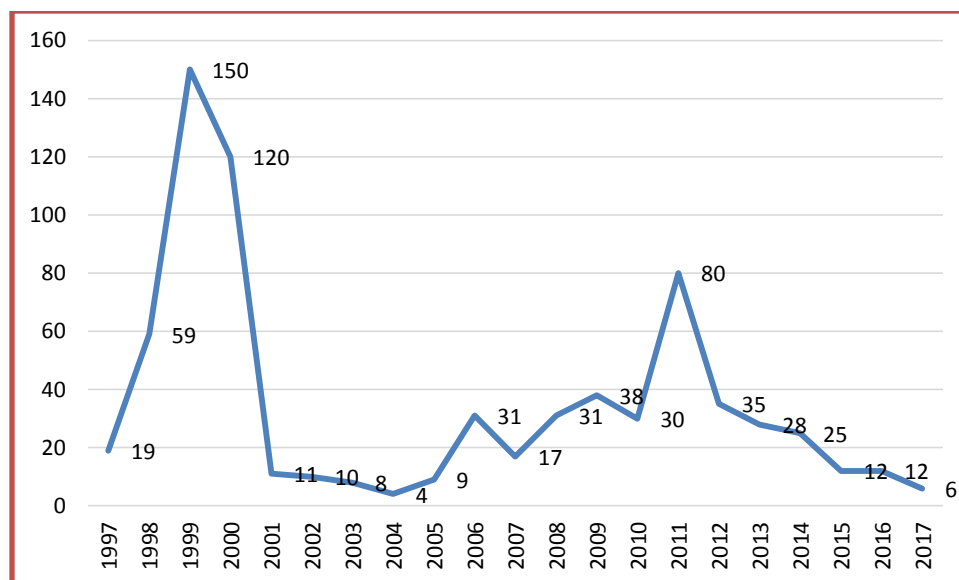
1.2. Epidemiologic situation:-

The current global goal to completely stop transmission of polio by the end of 2012 was declared a programmatic emergency for global health by the Executive Board of the World Health Organization (WHO, 2017). The circulation of indigenous Wild Poliovirus (henceforth referred to as WPV) continues in three countries, Afghanistan, Nigeria and Pakistan (WHO, 2017). India has not reported a polio case since January 2011 and was considered polio free since February 2012 (UNICEF, 2014).

Afghanistan is now one of the only three countries where polio remains endemic, collectively accounting for 60 per cent of all new cases of poliomyelitis (WHO, 2017). The remaining 40 per cent of cases occurred in Pakistan. In Afghanistan, 5 WPV poliomyelitis cases were reported during 2017, hitherto, compared with 7 WPV cases in 2017 (Annual report). 4 out of 5 cases are from the southern region of the country. Most of these cases are zero dose and refusal patients.



Southern Region Confirmed Polio cases



Country level number Confirmed Polio Cases

1.4. Afghanistan Polio Eradication Initiatives (PEI):

Most parts of Afghanistan is polio-free and persistent wild poliovirus transmission is now restricted to 28 security-compromised districts in the provinces of Helmand, Kandahar and Urozgan in the conflict zone in the south and Farah province in the west.

The main elements of the polio eradication initiative (PEI) in the country are to:

- ☐ strengthening routine EPI, including OPV4 dose at 9 months of age
- ☐ Supplementary immunization activities, including national immunization days using trivalent vaccine, sub-national immunization days (SNID), using either trivalent or monovalent vaccine, and cross-border vaccination
- ☐ Acute Flaccid paralysis Surveillance

1.5. PEI priorities and Polio High risk districts Afghanistan

Polio eradication team has developed the list of 29 out of 49 high-risk districts (Table) located in the southern region of the country. The first priority was to improve quality of campaign in these 29 high-risk districts of the southern region. These districts are labeled as high risk due to:

- 1) districts having reported confirmed polio cases
- 2) districts having reported 0 dose AFP cases.
- 3) districts facing security and accessibility issues (Reports from the field number of missed children, clusters, villages during the campaign)
- 4) districts situated in the epidemiological block of high risk districts for polio, (Geo graphic situation of the areas) and
- 5) low awareness levels about the campaign.

Chapter TWO:-

Review of available Literature and Information:

Revision of the information for developing the research is one of the important steps in acquiring resources/data and obtaining information to support the objective of the research. Polio Eradication report, WHO, UNICEF and MOPH monthly quarterly and annual reports are good resources, which I have access to, through my work for the purpose of this research. In addition the university primers and technical notes and also the WHO training manual on Health System Research Training are good references, which helped me in the following steps and processes systematically.

Furthermore the efforts of all polio eradication entities, research programs, data collection and anti polio institutions such as Lot Quality Survey (WHO), Post Campaign Assessment (WHO), Intra Campaign Monitoring, Harvard Opinion Research Program, National emergency action plan, global emergency action plan, WHO have also helped

me in acquiring the updated knowledge on the topic. In addition the previously mentioned sources 10 facts on polio eradication, Global Polio Eradication Initiative. Wild poliovirus (WPV) cases: case breakdown by country, Situation analysis–polio situation worldwide: the game changer. UNICEF, immunization communication network data, national coverage survey, Surveillance report of WHO and coverage report NEPI/MoPH have also been a tremendous help in formulating the thesis. To give an overall perspective on the literature I will be mentioning some excerpts from the research material I have gone through in the following examples.

In the southern region of Afghanistan, the proportion of missed children has hardly changed in two years. The proportion of refusals continues to be the highest of all polio affected countries and this situation has persisted for four years. (Country Program review Independent monitoring board London 2016). The review also notes that ‘refusal’ is still important especially in highest risk areas and that strategy for conversion of soft refusals should be reviewed. Where communications strategy seeks to build wider community support for PEI, as a means to improve household OPV uptake, emphasis should be given to engaging local level influencers and caregivers to address identified issues; including sustained engagement of religious leaders in the Very high risk districts (VHRDs), rather than at the national level (Technical Advisory Group on Polio Eradication for Afghanistan 2016). Still we are anxious for wrong information that spreads regarding polio vaccine. Therefore, we request media, clergies and others who have a role in making the public opinion to endeavor for reconstruction of public opinion regarding Polio vaccine and to uproot the wrongful fear of concerned people (international-ulama-conference-on-polio-eradication-and-childhood-vaccination Kabul - 2015).

The GPEI Community Engagement Strategy considers three main phases:

- Before the Knock – Pre-campaign awareness and community mobilization
- The Interaction – Supporting interpersonal communication and training so that the interaction at the door is the most effective it can be.
- After the Knock – Building toward constant improvement and increased levels of trust, seeking caregiver feedback is critical (PEI End game strategy).

The revised approach to communication for PEI will focus on increasing correct knowledge about polio to address misperceptions and false rumours, and to provide facts on polio and PEI activities (National Emergency action Plan 2016). Caregivers refuse OPV largely because of poor polio risk perception and religious beliefs. Communication strategies should, therefore, aim to increase awareness of polio as a real health threat and educate communities about the safety of the vaccine (An assessment of the reasons for oral poliovirus vaccine refusals in northern Nigeria). Strive to educate parents and patients about the importance of eradicating polio, not just in the United States but worldwide. Ensure that patients are vaccinated against polio. Ensure that patients traveling internationally receive all recommended vaccines, including a booster dose of IPV when appropriate (American academy of pediatrics).

Chapter Three

Objectives of the research:

Purpose of the study

The main purpose of this research is to determine factors associated of the caregivers of children, who refused to vaccinate their children with polio vaccine in Kandahar province of Afghanistan.

Specific objectives of this research are:-

- To estimate personal factors (including knowledge, beliefs and attitudes, of refusals to the polio vaccine, reported in 2016 SIAs, in the Kandahar Province).
- To uncover patterns, trends or associations contributing as factors among caregivers leading to refusals towards polio vaccination.
- What are the child care takers/mothers/parents’ concerns in connection with immunization of their children.
- What are the communication, knowledge /exchange issues resulted into demotivation of service providers and families who are not fully participating in the EPI program
- How families and service providers are seeing the adverse effect to immunization as a limitation for next session follow up and completing the course of immunization.
- What are the limitation in training of service providers and community awareness that resulted into in low immunization coverage?

Geographic scope:-

The study covered 6 polio high risk districts of kandahar province, which include: Kandahar city/Dand, Spin blodak, Panjwai, Maiwand/Zahray, Daman/Takhtapol and Arghandab.

Target population

The study target population included:

- a) Caregivers of under-five children in the household

Hypothesis:-

There is an association between specific socio- demographic factors and chronic refusals of OPV.

Study design:

Cross sectional study (community base)

Survey methodology

2.5.1 Study design

This study is a cross-sectional survey targeted at caregivers of refusal families with having children aged under 5.

The study was conducted at the community level of 6 very high risk districts of Kandahar province. For the first section of the study, multistage cluster sampling technique was adopted. The primary sampling units were families obtained by the Polio vaccination team. At the first stage, a total of 400 house hold were randomly selected from 4000 refusal families in 6 districts, using Probability Proportion to Size (PPS) technique. The sample consisted of 400 households were selected for the survey. The study was conducted between 23 June 2016 and Sep 2017. All target houses were interviewed in the survey.

The questionnaire consisted of the following sections:

1. Socio-demographic characteristics of the household and the main caregiver:

- Age,
- Education,
- Ethnicity,
- Occupation of the caregiver
- Number of families and children under 5 living in a compound.
- Material of boundary wall of the house and basic household

2 Reason of objecting/rejecting vaccination

Why they are refusing vaccine?

3 Routine Immunizations (RI)

- What is the RI immunization status of these chronic refusal families?
- Awareness Level
- Source of Information

1.5.2 Sample size:-

The sample size for quantitative data was calculated based on WHO 30 by 7 random cluster methodology 11.

Selection of respondents Inclusion criteria

Married (women/Men): The caregivers including mother, Grandmother, Aunt, Father, Grandfather, and Brother of the youngest child in a household were interviewed.

2.5.4 Study sampling procedure two stages cluster sampling technique

In this study the Probability Proportion to Size (PPS) technique was used for the sampling through a two-stage cluster sampling technique.

The primary sampling units and households were selected based on below two stage sampling technique: First stage: The Primary Sampling Unit (PSU) was selected through the following steps: □ The refusal data of all the villages of the survey districts were obtained from the Immunization Communication Network (ICN) Second stage: Selection of household. The households were randomly selected by visiting each PSU, identification of a central point, random selection of a direction from central point, identification/numbering of houses and selection of first house between 1 and total number of refusal houses in the area through using lottery technique.

Survey implementation:-

The implementation process included the development of the household questionnaire, plan of action showing the timelines for all activities, pre testing of tools, selection of supervisors and data collection teams, their training, data collection from the field, data entry and cleaning/processing and report development.

All the instruments were prepared in English and translated to Pashto.

Selection and training of field staff.

The field personnel, 3 supervisors and 20 local data collectors were selected locally at the /district level. 3 supervisors trained for one days centrally at Kandahar city, Supervisors organized a one-day orientation on the questionnaire for the locally selected female/male data collectors at the district level.

Data management/data Collection: Quantitative data were entered into the computer using Excel especially. A number of controls were incorporated in developing data entry software to minimize entry errors.

Limitation of the study: In some districts of the province, finding female surveyors in these districts because of insecurity and cultural and social barriers. The use of male interviewers posed challenges as typically; the survey respondents were females, resulting to have some interviews with male caregivers as well.

Chapter Four:-**Socio-Demographic Information**

A total of 400 primary caregivers were interviewed from 6 districts of Kandahar provinces. A total of 183 caregivers were interviewed from Kandahar city, 37 from Panjwai, 40 from Daman, 40 from Arghandab, 40 from Zehrai and 60 from Spinboldak province. Only 8% of mothers were ready for an interview, the lowest was in Daman and Arghandab where the percentage was zero.

Table 4. 1:- District wise categorization of respondent relationship with the children

	KDR	Spinboldak	Panjwai	Daman	Arghandab	Zehrai	Total
Father	59	62	54	54	83	70	62
Mother	13	8	3	0	0	8	8
Grand Father	9	18	21	19	10	15	14
Aunt	9	13	21	14	3	3	10
Grand Mother	6	0	0	0	0	5	3
Brother	4	0	0	14	5	0	4

On the average, 3-4 children were living in one household. The following table demonstrates the average number of children living in different districts.

Table 4. 2:- Children living in a household according to districts:

	KDR	Spinboldak	Panjwai	Daman	Arghandab	Zehrai	Total
1-2	35	8	18	33	35	30	29
3-4	40	42	55	46	49	60	45
5 or more	25	49	28	21	16	10	26

It was revealed that 19 percent respondents attended formal school and another 15 percent educated from Madrassas (mainly religious school) while 1 percent completed their Grade-X or above, The rate of illiteracy of the caregivers was highest (82) in Daman, followed by Zehrai (75%), Spinboldak (74%), Arghandab (68%), Kandahar city (62%) and Panjwai (58%).

Table 4. 3:- Level of education of the caregivers/respondents:

	KDR	Spinboldak	Panjwai	Daman	Arghandab	Zehrai	Total
Uneducated	62	74	58	82	68	75	67
Primary	13	3	23	5	16	0	11
Secondary	12	3	0	3	0	3	7
High education	1	2	5	0	0	0	1
Islamic Education	13	18	15	10	16	23	15

Out of total respondent 32% were farmers, 10% jobless, 11% mullah Imams, 2% were medical practitioners, 22% had private services, 7% drivers and 6% skilled labours.

Table 4. 4:- Occupation of the respondents according to districts:

	KDR	Spinboldak	Panjwai	Daman	Arghandab	Zehrai	Total
Private service	33	25	3	8	16	8	22
Jobless	13	16	3	0	0	8	10
Farmer	11	21	67	66	59	53	32
Mullah Imam	9	8	15	13	8	21	11
Skilled Labor	8	7	8	3	3	3	6
Unskilled Labor	8	7	0	3	3	0	5
Driver	7	13	0	8	8	3	7
Health practitioner	3	0	5	0	0	0	2
Teacher	2	2	0	0	0	3	2
Police	2	0	0	0	3	3	2
Community elder	2	2	0	0	0	0	1
Student	1	0	0	0	0	0	1

Chapter Five:-

Reason of not vaccinating the children with OPV

If was found that 9% of respondent from refusal families have a concern about getting their children polio vaccine the highest number was in Panjwai 14% and the lowest number was in Daman 5% while

It was 9% in each of three districts (Kandhar city, Spinboldka, and Zehrai.

Table 5:1:- Percentage of concern in regards to contracting the disease according to different factors:

District	% of Misconception (family planning, conspiracy)	% of Vaccine is not safe	% of No need for vaccination	% of I don't agree with usefulness of polio campaign
Arghandab	0	6	20	8
Daman	6	14	23	5
Kandahar city/Dand	3	13	20	9
Panjwai	1	6	15	14
Spinboldak	0	5	17	9
Zehrai	5	6	30	9
Average	3	9	21	9

It was found that 9% of caregivers thinking that their children receive more doses of OPV and there is no need and 12% of respondent have no trust on vaccinators

Table 5:2:- respondent showing carelessness and mistrust:

District	% of Fed up of too many polio campaigns	% of Child had already many doses	% of No trust on vaccinator
Arghandab	8	8	14
Daman	4	0	14
Kandahar city/Dand	11	3	9
Panjwai	16	6	12
Spinboldak	13	1	16
Zehrai	4	2	8
Average	9	3	12

Out of respondent 3% reported that OPV is not allowed in religion highest in Spinboldak (9%), in Arghandab 5%, in Kandahar city/Dand 2% while 0% in Daman and Zehrai districts. 3% of respondent reported that they are refusing vaccine because of political differences with government in Kandahar city/Dand district. 9% of respondent of refusal families reported that it is western conspiracy highest in Daman and Zehrai 11%, in Arghandab 9%, in Panjwai 10%, in Kandahar city/Dand 8% and in Spinboldak 4%. An average 6% of respondent reported that they are against the polio drops the highest number in Daman 10%, in Kandahar city/Dand 8%, in Panjwai 9%, in Kandahar city/Dand 8% in Arghandab 6% and in Spinboldak 1%.

Table 5:3:- Percentage of Religious and Political disagreements:

CDistrict	% of I am against polio drops	% of It is western conspiracy	% of Political differences with government	% of Religion does not allow polio vaccine
Arghandab	6	9	0	5
Daman	10	11	0	0
Kandahar city/Dand	8	8	3	2
Panjwai	9	10	0	1
Spinboldak	1	4	0	9
Zehrai	4	11	0	0
Average	6	9	0	3

It was found that 12% of respondents in Zehrai reported that it is culturally not allowed to bring new born babies outside the house while 2% each in Panjwai and Kandahar city/Dand, and in Spinboldak 1%.

And 8% of responded in Arghandab reported that during the appearance of vaccination teams the males are not available at home, 2% reported each from Daman, Kandahar city/Dand, and Panjwai districts and 1% from Zehrai district.

Table 5:4:- Refusing OPV because of cultural barriers

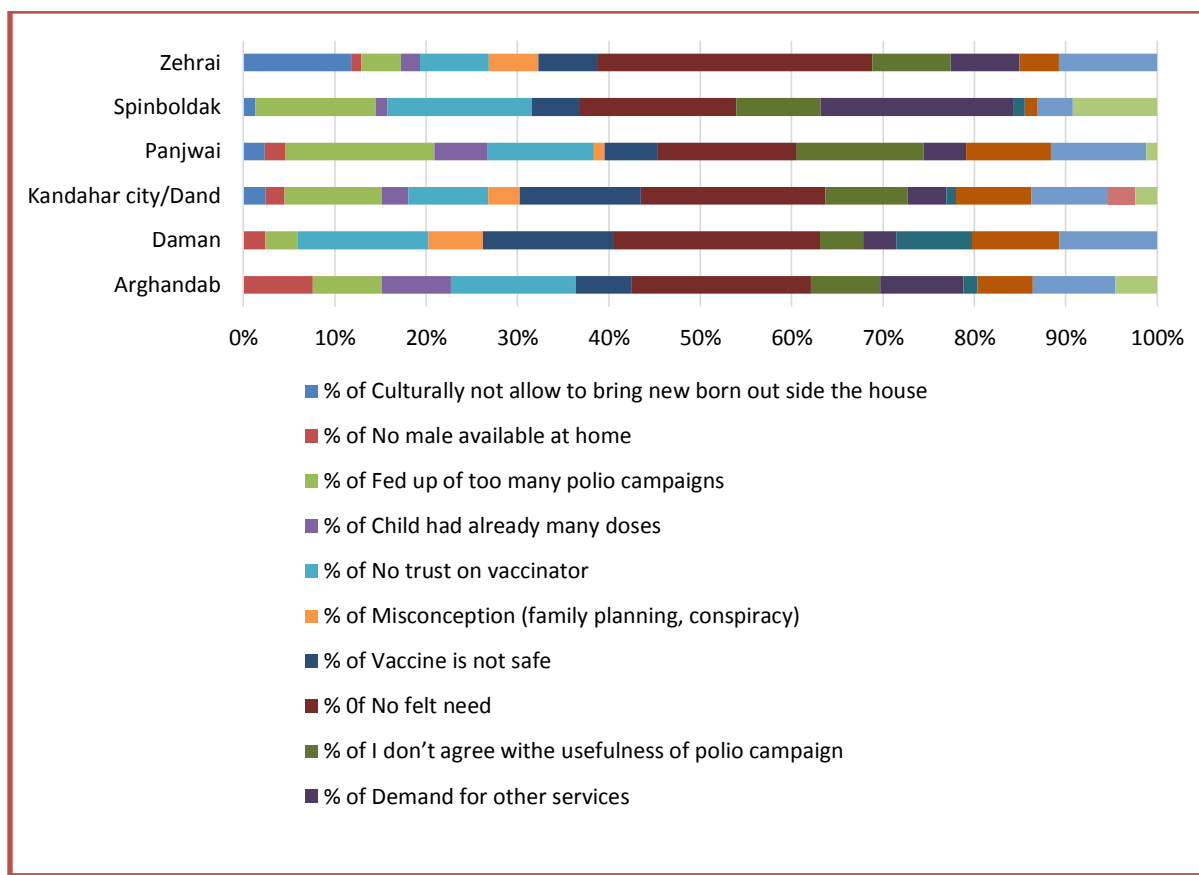
District	% of Culturally does not allow to bring new born outside the house	% of No male available at home
Arghandab	0	8
Daman	0	2
Kandahar city/Dand	2	2
Panjwai	2	2
Spinboldak	1	0
Zehrai	12	1
Average	3	3

21% of respondent have demand for other services in Spinboldak, 9% in Arghandab, 5% in Panjwai, 4% each in Kandahar city/Dand and Daman district while 8% in Zehrai district.

8% of respondent in Daman is not given a reason, while 2% in Arghandab and 1% each in Spinboldak and Kandahar city/Dand not given a reason.

Table %:5:- Refusing OPV B/c of Demand for other services.

District	% of Demand for other services	% of No reason given
Arghandab	9	2
Daman	4	8
Kandahar city/Dand	4	1
Panjwai	5	0
Spinboldak	21	1
Zehrai	8	0
Average	8	2



Chapter Six

Routine Immunization

It was found that 66% of respondents know about EPI, highest in Zehrai 88%, in Kandahar city/Dand 69%, in Daman 64%, in Panjwai 63%, in Arghandab 84% and in Spinboldak 31%.

42 respondents reported that they vaccinated children through EPI. 81% in Arghandab, 59% in Daman, 45% in Kandahar city/Dand, 28% in Zehrai and 20% each in Spinboldak and Panjwai districts.

Table 6.1:- Awareness and Coverage of RI

District	Do you know about routine EPI?	Did you vaccinate child (ren) through routine EPI
Arghandab	84	81
Daman	64	59
Kandahar city/Dand	69	45
Panjwai	63	20
Spinboldak	31	20
Zehrai	88	28
Average	66	42

Source of Information

Among the respondents 44% were aware about polio vaccination from SMs, 16% through Radio, 15% through IEC material, 12% through community elders, 11% through CHWs and 3% through TV.

In Kandahar city 43% were aware through SMs, 22% through Radio, 8% through IEC material, 16% through TV, 8% by community elders and 4% by CHWs. In Daman 46% were aware by SM, 15% by Radio, 21% through IEC material, 10% by community elders and 8% by CHWs. In Arghandab 46% were aware by SM, 16% by Radio, 14% through IEC material, 11% by community elders and 14% by CHWs. In Panjwai 38% were aware by SM, 18% through Radio, 18% through IEC material, 13% by community elders and 15% by CHWs. In Spinboldak 44% were aware by SM, 16% by Radio, 14% through IEC material, 11% by community elders and 14% by CHWs.

aware by SM, 13 % by Radio, 18% through IEC material, 16% by community elders and 8% by CHWs. In Zehrai 45% were aware through SM, 16 % by Radio, 13% through IEC material, 12% by community elders and 11 % by CHWs.

Table 6:2:- Source of Information of respondent about Polio

District	% of SM	% of Banners, leaflets, Poster	% of TV	% of Radio	% of influencers	% of CHWs
Arghandab	46	14	0	16	11	14
Daman	46	21	0	15	10	8
Kandahar city/Dand	43	8	16	22	8	4
Panjwai	38	18	0	18	13	15
Spinboldak	44	18	0	13	16	8
Zehrai	45	13	0	13	13	18
	44	15	3	16	12	11

Discussion:-

Polio is a viral infection caused by poliovirus (genus *Enterovirus*), it has three different serotypes, which are all contained in the vaccine unless it is a bivalent polio vaccine (bOPV). Infection with the virus is in most cases asymptomatic in about 95% of cases. Up to 8% of infected individuals experience non-specific viral symptoms, which could include a sore throat, low-grade fever, diarrhoea, vomiting etc. In about 1-2% of cases the patient will have aseptic meningitis with stiffness of the back, neck and legs as a sequel. Approximately 1% or less of infected individuals will develop and progress to acute flaccid paralysis, which will result in loss of reflexes in the involved limbs. To eradicate this vaccine-prevented disease the whole world has been in a synchronised effort since the invention of the first vaccine in 1955. At the start of global poliomyelitis eradication campaign, the wild poliomyelitis virus was circulating in more than 125 countries, disabling more than 1,000 children every day. However, in early 2012 worldwide including India was declared polio free leaving only three countries- Pakistan, Afghanistan and Nigeria in the world as endemic with an indigenous transmission of poliomyelitis. In Afghanistan more than 60% of polio cases reported are from 28 Very High-Risk Districts (VHRDs) of southern region. The area has a variety of challenges leaving a reasonable number of children repeatedly unreachable during polio campaigns and deprived from Oral Polio Vaccine (OPV). A high number of children are missed in these districts because of inaccessibility, and children not available resulting in refusal. Most of the recent positive cases are reported from refusals families (Survey, 2013).

Among the respondent 84% were aware about polio vaccination from Social Mobilisers (SMs), 52% through Radio, 12% through Information Education Communication (IEC) material, 11% through community elders, 6 % through CHWs and 5% through TV ads (Survey, 2013). In Kandahar city 92% residents had knowledge through SMs, 50% through Radio, 16% through IEC material, 10 through TV, 9% by community elders and 3 % by CHWs (Survey, 2013). As we have established the awareness level of refusal families and caregivers is high, Social Mobilizers' (SMs) are visiting the families and the information is spread on digital media including television and radio. 79% of the population in Daman was aware through SM, 62 % by Radio, 8% through IEC material, 15% by community elders and 8 % in corporation with CHWs (Survey, 2013). In Arghandab 59% of the people obtained information by SM, 62 % by Radio, 5% through IEC material, 11% by community elders and 5 % by CHWs (Survey, 2013). Whilst in Panjwai 88% had awareness through SM, 50 % by Radio, 10% through IEC material, 13% by community elders and 8 % by CHWs (survey, 2013). In Spinboldak 80% were aware by SM, 30 % by Radio, 8% through IEC material, 10% each by community elders and CHWs (Survey, 2013). Finally in Zehrai 75% of the populous were aware through SM, 25 % by Radio, 13% through IEC material, 13% by community elders and 15 % by CHWs (Survey, 2013). It was found that 66% of respondents knew about Expanded Program on Polio (EPI), highest in Zehrai 88%, in Kandahar city/Dand 69%, in Daman 64%, in Panjwai 63%, in Arghandab 84% and in Spinboldak 31% (Survey, 2013). Respondents also reported that 42% vaccinated their children through EPI efforts. 81% in Arghandab, 59% in Daman, 45% in Kandahar city/Dand, 28% in Zehrai and 20 % each in Spinboldak and Panjwai districts (Survey, 2013).

We have also seen, during the course of this article that, although the families might know about the polio vaccine but they do not comprehend entirely what it means in the sense of the dangers polio virus possess. According to the

response of caregivers community elders are not engaged properly to convince the refusal families (Survey, 2013). Most of respondent are feeling the OPV is not needed to their children highest in Zehrai district 30% (Survey, 2013). Over all 9% of the respondent disagree with usefulness of polio vaccination campaign especially in Panjwai (14%). 3% of respondent believed that OPV is not allowed in religion especially in Spinboldak 9% and 11% in Zehrai district of the caregivers reported that it is western conspiracy (Survey, 2013). In this regard other decision affecters such as elders in the villages and religious clerics should be convinced to engage their communities in changing the mind-set of the people. Changing the mind-set of the people in this era is done exclusively through digital media and it can be used for a very positive impact in the fight against polio eradication. Whether it is the radio advertisements or Afghanistan cricket players enlightening and educating people through simple ads. Other argue that the most important reason given by the caregivers is the safety of the as 9% of respondents in Daman and Kandahar city/Dand districts have exhibited fears about (Survey, 2013). Quality information about understanding of chronic refusal to polio vaccination is needed to further supplement the polio eradication efforts with strong communication component. Therefore the topic was chosen to identify the reasons of chronic refusals in six VHRDs of Kandahar where number of refusal is high (Survey, 2013).

Cross section survey conducted among list of 4000 of refusal families in these districts. 20 surveyors and 3 supervisor conduct the survey. On average 3-4 children below the age of 5 are found in a household in the six districts. It was revealed that 19 percent respondents attended formal school and another 15 percent educated from Madrassas (mainly religious schools), while 1 percent completed their Grade-X or above studies (Survey, 2013). The rate of illiteracy of the caregivers was highest (82) in Daman, followed by Zehrai (75%), Spinboldak (74%), Arghandab (68%), Kandahar city (62%) and Panjwai (58%) (Survey, 2013). As mentioned earlier there are on average, 3-4 children below 5 years of age in most compounds, while in 26 % there are 5 or more and in 29% cases 1-2 children were living in one household (Survey, 2013). Out of the total 42% respondents were farmers, 10% jobless, 11% mullah Imams, 2% were medical practitioners, 22% had private services, 7% drivers and 6% skilled labours (Survey, 2013). It was found that 9% of respondents from refusal families have a concern about getting their children polio vaccine the highest number was in Panjwai 14% and the lowest number was in Daman 5% while it was 9% in each in three districts Kandahar city, Spinboldak, and Zehrai (Survey, 2013).

Amongst the caregivers 9 % believe that their children receive more doses of OPV and there is no need of it and 12 % of respondent have no trust on vaccinators (Survey, 2013). Trust deficit exist as 16% of the respondents have no trust in vaccinators, 14% each in Daman and Arghandab, 12% Panjwai, 9% in Kandahar city and 8% in Zehrai districts. 16% of respondents are concerned of multiple rounds and the highest percentage is in Spinboldak 13%, 11% in Kandahar city, 8% in Arghandab, 4% each in Zehrai and Daman districts (Survey, 2013). Out of respondent, 3% reported that OPV is not allowed in religion highest in Spinboldak (9%), in Arghandab 5%, in Kandahar city/Dand 2% while 0% in Daman and Zehrai districts (Survey, 2013). 3% of responded reported that they are refusing vaccine because of political differences with government in Kandahar city/Dand district (Survey, 2013). 9% of respondent of refusal families reported that it is western conspiracy highest in Daman and Zehrai 11%, in Arghandab 9%, in Panjwai 10%, in Kandahar city/Dand 8% and in Spinboldak 4% (Survey, 2013). An average 6% of respondent reported that they are against the polio drops highest number in Daman 10%, in Kandahar city/Dand 8%, in Panjwai 9%, in Kandahar city/Dand 8% in Arghandab 6% and in Spinboldak 1% (Survey, 2013). 12% of respondent in Zehrai reported that it is culturally not allowed to bring new-borns outside the house while 2% each in Panjwai and Kandahar city/Dand, and in Spinboldak 1% (Survey, 2013). And 8% of responded in Arghandab reported that during the arriving of vaccination teams the male members are not available at home, 2% reported each from Daman, Kandahar city/Dand, and Panjwai districts and 1% from Zehrai district (Survey, 2013).

Specific Awareness level about polio was average and there is need to involve the local community in polio campaign to reach and vaccinate all the eligible children. The interventions should target the misconceptions and rumours on a continuous basis not only limited to during National Immunization Days (henceforth referred to as NID). Training for health practitioners and vaccinators on use of polio-focused Interpersonal communication (henceforth referred to as IPC) techniques is needed to enhance their capacity. This should focus on the knowledge gaps of caretakers including the dangers of poliomyelitis, mode of transmission and the methods of prevention. Communication needs to be strengthened between health workers/vaccinators and caregivers to ensure completion of the routine vaccination schedule. Involving Radio communication and ads, for awareness raising is critically important being the most effective source of information and use of SMS or Voice messages can be explored on pilot basis. Interpersonal communication activities with local influential can positively build and restore/strengthen the communities trust and willingness to vaccinate their children.

Engagement of female vaccinators and social mobilizers as they have direct access to mothers and will reduce the number of refusals.

CHAPTER Eight:-

Recommendations:-

Based on findings of the survey, following is recommended to convince the caregivers of refusal families of the community to facilitate and increase vaccination coverage among the target children.

Strategy:

- Increase and sustain awareness levels about the disease and benefits of OPV as an effective tool for its prevention.
- Involve the community influencers (Community elders, Mullah Imams), male heads of the families, at the grass root level being a rich resource for Inter Personal Communication to remove misconceptions and counter rumors against vaccination. This is a very important point because in a society like Afghanistan males are the decision makers and if they are not convinced properly it will most definitely lead to refusal.

Capacity Building:

Social mobilizers need to be trained especially to improve their IPC and technical skills to remove concerns as shared by the respondents and restore confidence of the community on the delivery of the program. The respondents were found concerned about their children contracting polio. The messages need to be focused on awareness about the disease, its mechanism of spreading, symptoms and threats about the consequences as a result of paralysis.

Community mobilization:

- The Immunization Communication Network can sustain and further involve them to ensure that polio messages reach within the households.
- The most important category of most effective source for health information came out as Health practitioners and religious scholars. Capacity of the health practitioners and religious elders need to be further developed to use them more effectively to increase knowledge of the community and positively change their attitudes towards vaccination.
- It has clearly come out that engaging community influencers (mullah, elders teachers, CHWs) can play a vital role for reaching and vaccinating all target children. They need to be involved through social mobilization activities.
- As most of the refusals are from farmers, drivers and jobless individuals, therefore establishing a special team consisting of Mullah imams and community elders can play a vital role to convince this category for polio vaccination.
- Engagement of female in refusal community can make a difference as they have an access to mothers and children inside the house to convey the message and vaccinate their children.

Strengthening of the Media involvement:-

- More than 42% of the respondents reported Radio as the most effective source of information for health information, knowledge about polio disease as well as polio campaign. It can reach to all those areas where messages dissemination through IPC channels is not possible. Involvement of radio needs to be intensified using specific targeted messages.

Inter Personnel Communication:-

- The knowledge of refusal community about polio is very low and they do not trust on vaccine, therefore Mullah Imams, and health practitioners are effective sources of information about the campaign. Their engagement at local community level needs intensification to enhance the awareness and build trust of the refusal community. Besides other activities from the provincial and district level, ICN is an effective tool at the grass root level to map and involve them.
- Cultural sensitivities are other barriers reported in some districts especially 12% in Zehrai and 8% in Arghandab districts (Survey, 2013). Employing female vaccinators will improve this situation as they are more accepted by both the males and female caregivers. The necessity of female caregivers coming out of their home to meet strangers is diminished as the female workers can go into the houses of the families and vaccinate them inside of the house. As some of the families members are saying that the decision makers are not at home during the visiting of vaccination team indicating that the need for female personal is paramount. And if it is not possible

to recruit female workers because of cultural sensitivities, then visiting time of the vaccinators should be changed to calculate the factor the male caregivers are at home so they can be engaged if they have any doubts and to convince them at the time of vaccination.

Area/issue specific approaches

- While planning communication/social mobilization activities, situation of those specific areas needs to be taken in to account.
- For instance it is a belief of the community that if the vaccine is given to the children, they will become unhealthy and develop genetic defects as well as impotence in the future. As we mentioned earlier most of the caregivers/respondents are farmers, drivers and unskilled laborers, who cannot be convinced with scientific data and studies. To deal with this group of people UNICEF signed a contract with the Afghanistan Cricket Board (ACB), which is loved by one and all. In the advertisement video promoted by ACB the players are convincing the people by advocating the safety with phrases like “if you want you kids to grow strong and healthy like us, do not forget to vaccinate your children” (UNICEF Promo Video). This is an example for the people who do not trust the vaccinators but they will trust the crickets, whom are seen as role models and looked up to. There is another group who are educated and might be even doctors who oppose the effectiveness of the vaccine and propagate negative about it. These people can be dealt with scientifically as they reason with you and since there is an overwhelming scientific data to back the vaccine it should be easy.

Conclusively awareness level regarding polio campaign is good but regarding the Polio disease is far behind the target set by the program. Community awareness and trust is crucial for success of the polio eradication initiatives. Efforts are needed to enlighten the thus far unwilling segment of the community about the benefits, availability of vaccination services and the potential risks of not vaccinating children. Electronic media and IPC is rich and trusted source to improve the coverage for more vaccinated children. Based on the findings of the survey, usefulness of effective sources of information needs further intensification. Keeping in view literacy status of the community in this specific area, the use of print media and printed material may not be useful. However use of simple and carefully designed pictorial printed material may work to make the community aware. The area and issue specific approach will work well to reduce number of missed children if the reasons behind missing children are addressed. No trust on vaccinators, cultural barriers to bring the children outside the houses and no direct communication with caregivers especially in urban area need to involve more female as a social mobilizers and vaccinators to convince the refusal families and reduce number of missed children. I end my thesis with the ambition and hope in heart that we will one day have a polio free world.

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Questionnaire:

Informed Consent Form

(Please say to respondent)

Greetings. My name is _____ and I am working with _____. We are carrying out a study among the refusal of oral polio vaccination in order to understand the reason behind the rejecting the vaccine. This study is for the thesis of Master of Public Health. There is no risk for you in this interview and would help us to address some of the specific reason and concern that community have in the polio eradication initiative, I request you to answer the questions frankly and as truthfully as possible. I can assure you that anything you say will be confidential. Your participation in this study is entirely voluntary and you can refuse and say no in this study and to those questions you don't want to give answer

Province:			
District:	Name of Cluster: _____		Village: _____
Date of survey _____	Name of surveyor _____		
S.No.			
1	Name of informant: _____ Male - Female	Relation with index child _____	
2	Total number of < 5 years children in a house. _____		
3	Education status of the father/mother		

4	Occupation of the father			
7		<i>Reason for not vaccinating the child</i>	Yes	No
	7.1	Vaccine is not safe		
	7.2	No felt need		
	7.3	Fed up of too many polio campaigns		
	7.4	No trust on vaccine		
	7.5	I am against polio drops		
	7.6	I don't agree with the usefulness of polio campaign		
	7.7	It is western conspiracy		
	7.8	Child had already many doses		
	7.9	Political differences with government		
	7.10	No male available at home		
	7.11	Religion does not allow polio vaccine		
	7.12	Demand for other services		
	7.13	Misconception (family planning, conspiracy)		
	7.14	Not happy with NIDs service providers		
	7.15	Child was sick		
	7.16	Newborn baby		
	7.17	child was sleeping		
	7.18	Mother was busy		
	7.19	Child was at School		
	7.2	Child studying in Mosque/Madrassa		
	7.21	Vaccinator did not visit the house		
	7.22	Not aware about campaign		
	7.23	No trust on vaccinators		
	7.24	Others		
	7.25	No reason given		
	8	Source of information about campaign?		
	9	Do you know about routine EPI?	Yes	No
	10	Did you vaccinate child (ren) through routine EPI	Yes	No