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**Shehzad Zareen**  
Department of Zoology, Kohat University  
of Science and Technology-26000, KPK,  
Pakistan.

**Hameed Ur Rehman**  
Department of Chemistry, Kohat  
University of Science and Technology-  
26000, KPK, Pakistan.

**Adnan Khan**  
Department of Zoology, Kohat University  
of Science and Technology-26000, KPK,  
Pakistan.

**Amjad Ullah**  
Department of Zoology, Kohat University  
of Science and Technology-26000, KPK,  
Pakistan.

**Imran Ullah**  
Department of Zoology, Kohat University  
of Science and Technology-26000, KPK,  
Pakistan.

**Tanveer Ali**  
Department of Microbiology, Kohat  
University of Science and Technology-  
26000, KPK, Pakistan.

**Nowshad Wali**  
Department of Microbiology, Kohat  
University of Science and Technology-  
26000, KPK, Pakistan.

**Riaz Ahmed**  
Department of Microbiology, Kohat  
University of Science and Technology-  
26000, KPK, Pakistan.

**Faheemullah**  
Department of Microbiology, Kohat  
University of Science and Technology-  
26000, KPK, Pakistan.

**Telawat Khan**  
Department of Microbiology Abbottabad  
University of Science & Technology,  
Havelian, Abbottabad, Pakistan.

**Muhammad Ayub Jadoon**  
Department of Microbiology Abbottabad  
University of Science & Technology,  
Havelian, Abbottabad, Pakistan.

**Waqar Ahmad**  
Department of Microbiology Abbottabad  
University of Science & Technology,  
Havelian, Abbottabad, Pakistan.

**Zakir Ullah**  
Department of Microbiology Abbottabad  
University of Science & Technology,  
Havelian, Abbottabad, Pakistan.

**Kausar Saeed**  
Department of Zoology, Abdul Wali Khan  
University Buner Campus.

**Correspondence**  
**Hameed Ur Rehman**  
Department of Chemistry, Kohat  
University of Science and Technology-  
26000, KPK, Pakistan.

## A serious threat to new generation: refusal of vaccination against poliomyelitis among local population of different educational levels in district Lakki Marwat, KP Pakistan

**Shehzad Zareen, Hameed Ur Rehman, Adnan Khan, Amjad Ullah, Imran Ullah, Tanveer Ali, Nowshad Wali, Riaz Ahmed, Faheemullah, Telawat Khan, Muhammad Ayub Jadoon, Waqar Ahmad, Zakir Ullah and Kausar Saeed**

### Abstract

In Pakistan 53 Polio positive cases were diagnosed in 2013 which is the highest number of cases reported for any country. In Pakistan polio vaccination process is stuck due to so many reasons including low awareness and militancy. District Lakki Marwat was selected as target area, as so many misconceptions regarding Polio vaccination refusal were reported there. Respondents were interviewed from different areas (rural and urban) of district Lakki Marwat. Reviews of those responded were recorded who refused to vaccinate their children. Education level of those respondents was also recorded to observe the awareness level of the respondents. About 253 respondents were included in this study. Out of them 103 respondents vaccinated their children while 100 refused to vaccinate their children. Similarly, 50 of them were reported fake vaccinated i.e. they didn't vaccinate their children eventually show their vaccinations status "ok" or "Done" in government record. Major reasons of polio refusal were recorded in this study i.e. Pre-term Maturity, Low Mental Capacity, Mental Retardation, Religious issues, Swine Fats composition, Swine Urine composition, Other misconception, Demand Based/Elders order, Cause other diseases, Non-reliability, Expired vaccine. Concept of infertility was more common among population with secondary literacy level, as well as from graduates. Concept of prematurity was more common among illiterates and among graduates as well. No educated person was following the concept of having Low mental capacity by using this polio vaccination. Amazingly the concept of Mental Retardation was not reported among illiterates while it was more prevalent among educated respondents.

**Keywords:** Polio vaccination, vaccination refusal, Lakki marwat

### Introduction

Poliomyelitis is also called infantile paralysis [1]. It is an infectious disease caused by human enterovirus of *Picornaviridae* family [2]. This is a RNA virus that accumulate in GIT, this disease is characterised with the weakness in muscles and incapacity to move [1]. Polio virus can be transmitted by person to person by oral-faecal route [1]. This disease is mostly prevalent among Pakistan, Nigeria and Afghanistan [2]. In Pakistan 53 Polio positive cases were diagnosed which the highest number of cases any of the country [3, 6]. It is estimated that if eradication efforts are being made enthusiastically polio can be eradicated by the end of 2018 [4]. Polio virus can only affect human beings [5]. In Pakistan polio vaccination process is stuck due to so many reason including low awareness and militancy [7]. Viewing the above facts of polio and hindering its vaccination in Pakistan, the current study is designed to investigate the causes of refusal of Polio vaccination in general population of different educational levels of district Lakki Marwat.

### Materials and methods

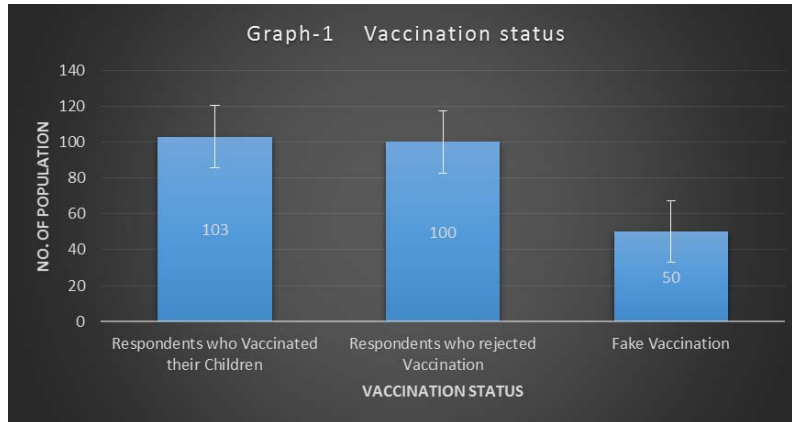
District Lakki Marwat was selected as target area, as so many misconceptions regarding Polio vaccination refusal were reported there. Respondents were interviewed from different areas (rural and urban) of district Lakki Marwat. Reviews of those responded were recorded who refused to vaccinate their children. Education level of those respondents was also recorded to observe the awareness level of the respondents.

**Results**

**Vaccination status among children of district Lakki Marwat**

About 253 respondents were included in this study. Out of them 103 respondents vaccinated their children while 100 refused to vaccinate their children. Similarly, 50 of them were reported fake vaccinated i.e. they didn't vaccinate their

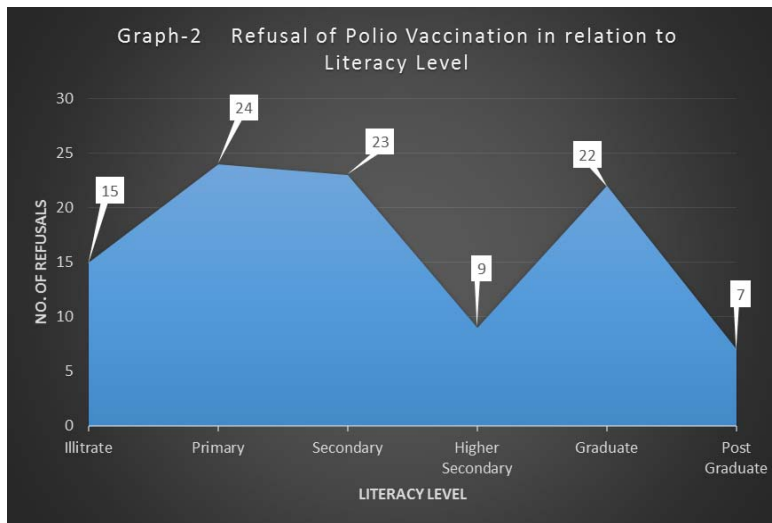
children eventually show their vaccinations status “ok” or “Done” in government record (Graph-1), as they were afraid of get arrested by the police. In Pakistan those people who do not vaccinate their children are get arrested by police officials. There were so many causes of polio vaccination refusal which are discussed below.



**Refusal of Polio Vaccination in relation to Literacy Level**

About 15/100 (15.00%) illiterate, 24/100 (24.00%) respondents with primary level of education, 23/100 (23.00%) respondents with secondary level of education

level, 9/100 (9.00%) respondents with higher secondary education level, 22/100 (22.00%) graduates while 7/100 (7.00%) graduates refused to get vaccinated their children. (Graph-2)



**Causes of Polio vaccination refusal among general population with different literacy level**

Polio refusal was not only the problem with the people of low literacy level but also it was prevalent among well educated people.

**Infertility:** Infertility was one of the cause highlighted by population of Lakki Marwat, according to them vaccination of polio is in fact a drug which cause infertility among their children, this method is adapted due to exponential growth of the population of Pakistan. This strategy is adapted with an international plan. The concept of infertility was prevalent among 14/100 people who refused to vaccinate their children. Out of them 7.14% were illiterate, 28.57% had primary level of education, 35.71% had secondary level of education, 28.57% were graduates.

**Pre-Term Maturity:** This was another misconception that was prevalent among general population of Lakki Marwat, according to this concept, using this vaccination a child gains pre-term maturity in his physical state i.e. early appearance of beard and moustaches and also cause premature aging in the body. This concept was followed by 13/100 people who refused polio vaccination, out of them 15.38% were illiterate 23.08% had secondary education level, same percentage was of higher secondary literacy level, 30.77% were graduates while 7.69% were Post graduates.

**Low Mental Capacity:** 2/100 respondents were of the concept that by using this vaccination child are affected with low mental capacity, they take time in learning and have less ability to compete in every field of life. This concept was followed by 50.00% of the illiterate people and 50.00% people with Primary education level.

**Mental Retardation:** This was a hilarious concept which was followed by 7/100 people who refused vaccination. According to this concept polio vaccination cause mental disorders among children which eventually either handicap the children or lead to slow death process. 42.86% of people with primary education level were following this concept, 14.29% respondents with secondary education, 14.29% graduates while 14.29% respondents with post graduate educational level were following this concept.

**Religious issues:** About 15/100 people highlighted it as religious issues. According to them the composition of this vaccine is controversial and not explained by Islamic laws there for they cannot allow such a preventive vaccination to their children. 33.33% people with primary educational group while 66.67% graduates were of this opinion.

**Swine Fat composition:** About 5/100 respondents were of the opinion that this vaccine includes swine fats which is added for efficacy of this vaccine, as swine fat is prohibited in Islam to be consumed that is why this vaccine is not welcomed over there. 20.00% people of primary education level, 40.00% people of secondary education, and 20.00% higher secondary while 20.00% graduates were following this opinion.

**Swine Urine composition:** About 3/100 respondents were of the opinion that this vaccine contains Swine urine which is Haram i.e. prohibited by Islam to be consumed. 33.33%

illiterate and 66.67% respondents with primary education level were following this opinion.

**Other misconception:** About 10/100 were not clear in their concept for not using this polio vaccination, they just followed the misconceptions of other people and refused vaccination.

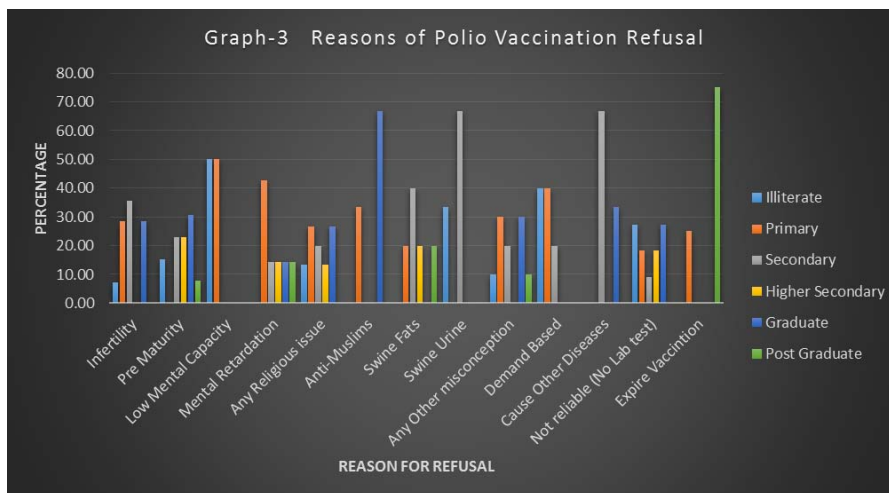
**Demand Based/Elders order:** About 10/100 refused vaccination just because of the orders from their elders at home; they were not in the favour of vaccinating the children.

**Cause other diseases:** About 3/100 respondents were of the opinion that this vaccination decreases the immunity level of a child which enables a child to get susceptible for any other diseases.

**Not reliable:** About 11/100 respondents were of the opinion that this vaccination is not reliable as there is no clear explanation and instructions from government side to be followed by local population. The laboratory tests and reports to explain its efficacy are not clear to population of Pakistan.

**Expired vaccination:** About 4/100 respondents reported that polio vaccinations get expire very soon if they are exposed to sun light and heat. According to them most of the vaccines are expired and if so, they have an adverse effect of children’s health. (Table-1), (Graph-3)

Reasons of Refusal	Literacy Level						Over all
	Illiterate	Primary	Secondary	Higher Secondary	Graduate	Post Graduate	
Infertility	7.14	28.57	35.71	0.00	28.57	0.00	14
Pre Maturity	15.38	0.00	23.08	23.08	30.77	7.69	13
Low Mental Capacity	50.00	50.00	0.00	0.00	0.00	0.00	2
Mental Retardation	0.00	42.86	14.29	14.29	14.29	14.29	7
Any Religious issue	13.33	26.67	20.00	13.33	26.67	0.00	15
Anti-Muslims	0.00	33.33	0.00	0.00	66.67	0.00	3
Swine Fats	0.00	20.00	40.00	20.00	0.00	20.00	5
Swine Urine	33.33	0.00	66.67	0.00	0.00	0.00	3
Other misconception	10.00	30.00	20.00	0.00	30.00	10.00	10
Demand based /Elders order	40.00	40.00	20.00	0.00	0.00	0.00	10
Cause Other Diseases	0.00	0.00	66.67	0.00	33.33	0.00	3
Not reliable (No Lab test)	27.27	18.18	9.09	18.18	27.27	0.00	11
Expire Vaccination	0.00	25.00	0.00	0.00	0.00	75.00	4
Grand Total	15.00	24.00	23.00	9.00	22.00	7.00	100



### Conclusions and discussions

Current study is in agreement with the study of WHO in 2016 [7], which revealed that polio vaccination is considered to be major cause of infertility. This is the main reason of its refusal. About 15/100 (15.00%) illiterate, 24/100 (24.00%) respondents with primary level of education, 23/100 (23.00%) respondents with secondary level of education level, 9/100 (9.00%) respondents with higher secondary education level, 22/100, 22/100 (22.00%) graduates while 7/100 (7.00%) graduates refused to get vaccinated their children. (Graph-2) Concept of infertility was more common among population with secondary literacy level, as well as from graduates. Concept of prematurity was more common among illiterates and among graduates as well. No educated person was following the concept of having Low mental capacity by using this polio vaccination. Amazingly the concept of Mental Retardation was not reported among illiterates while it was more prevalent among educated respondents. The matter of Religious issue in using this vaccine was followed by only people with primary level of education and graduates. No illiterate respondents were following the concept of Swine Fat while no Post graduate respondent was following the concept of swine urine as the composition of polio vaccination every respondent except post graduates were of this opinion that these vaccines are not reliable. The laboratory tests and reports to explain its efficacy are not clear to population of Pakistan. Most of the people are of the opinion that that polio vaccinations get expire very soon if they are exposed to sun light and heat. According to them most of the vaccines are expired and if so, they have an adverse effect of children's health.

### Recommendation

Government of Pakistan and health agencies should aware people about importance and necessity of polio vaccination in Pakistan. They should eliminate such rumours and misconception among population of Pakistan to get a healthy future.

### Acknowledgment

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