

## **Educational Status and Polio: A Case Study on Murshidabad District**

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### **ABSTRACT**

Polio is one of the most hideous mass disease which is able to damage entire life of anyone. In the era of 19<sup>th</sup> and early 20<sup>th</sup> it took lives of near about one million people. But after invention of IPV and OPV, things were started to change. In India, polio was mass disease till 2014 when the country was declared polio free by World Health Organisation (WHO). There are four districts of West Bengal which were highly polio effected and Murshidabad is one among them. This district is considers as socioeconomically as well as educationally backward. One thousand two hundred (1200) people of different educational status *viz.*, illiterate, primary, secondary and higher educated people from Murshidabad district were taken through purposive random sampling method. Data was collected by self constructed tools for knowledge and attitude towards polio. Generally the magnitude of knowledge and attitude increases with the increase of their educational status. Although the study indicates that there was significant differences between different combinations of educational status of HSES and LSES group regarding knowledge about polio except in case of secondary and higher educated group of HSES. On the other hand there was no significant differences exists among any combinations of HSES group of people about attitude towards polio. But in all the combinations of LSES group of people significant differences was found regarding attitude towards polio.

**Key Words :** Polio, Educational status, Murshidabad district

### **INTRODUCTION**

One of the most hideous mass diseases, polio, fully named as poliomyelitis or infantile paralysis. In this disease the Central Nervous System (CNS) are highly affected. The virus of polio affects the muscles and weakens them. Sometimes, it creates difficulties in walking or any hand movement. It is harmful to common immune system of human body, e.g. effected people suffers from physical disturbance like fever, gastronomically disturbance, vomiting, nausea, abdominal pain, constipation, and influenza like illness. In post polio syndrome people are suffering from muscles weakness and even paralysis. About 2-3% of children and 15-20% adult die due to paralysis (Poliomyelitis, Wikipedia).

Polio is spread when the stool of an infected person somehow gets into the mouth of another person through

contaminated water or food it is called facial-oral transmission, also oral to oral transmission by way of an infected person's saliva may account for some cases (World Health Organization, 2012). The polio virus usually enters the environment through the faces of infected persons. In the areas with poor sanitation, the virus easily spreads from faces by water supply, or by touch or by food. Nevertheless being contagious, polio can cause by direct contact with a person infected with the virus (Anonymous, 2017).

India was declared polio free on 25<sup>th</sup> February 2012. Though socio economic inequality created a major rift in the project targeted total eradication of Polio (Lakhani and Bumb, 2014). There were various factors like economic status, education of mother, caste, residence, birth order, and gender, poverty ratio, income inequality,

class division were alarming factors which created difficulties but gaining the polio free title India just shut down all the critics.

The last case of polio was recorded in India was from West Bengal. A girl from Howrah district was the only polio victim of the country. So the state naturally has polio prone areas which still need polio vaccination camp. District like Murshidabad, situation is worst here, in early 2000 to 2010-polio cases were several and alarming. Murshidabad is located at the border of India and Bangladesh, so migration problem is very common in this district. Many polio cases were found in migrated people of Murshidabad. Due to the lack of proper education and blind religious belief, all the polio cases are from one particular community and that is the Muslim community. According to the poor and illiterate Muslims, who were against the campaign clearly stated that this campaign is not Halal (which is permissible in Islam), so it's conspiracy against their religion. So the purpose of the study is to focus how educational status affects the knowledge and attitude towards polio among the people of Murshidabad district.

### Objectives of the study:

The following are the objectives of the study

1. To find out the differences in knowledge and attitude towards polio between the high socio-economic status and low socio economic status group of people of Murshidabad district, west Bengal.
2. To find out the differences in knowledge and attitude towards polio between the high socio-economic status and low socio economic status group of people belonging to different educational status of Murshidabad district, west Bengal.

### Statement of the hypotheses:

On the basis of the review of literature, experts' opinion, experience/opinion of sufficient number of doctors, educationist and researcher's in this field the following working hypotheses were framed:

$H_1$ : Different combinations of high socio-economic status (HSES) group and low socio-economic status (LSES) group on the basis of educational status differs significantly regarding knowledge about polio of Murshidabad district.

$H_2$ : Different combinations of high socio-economic status (HSES) group and low socio-economic status (LSES) group on the basis of educational status differs

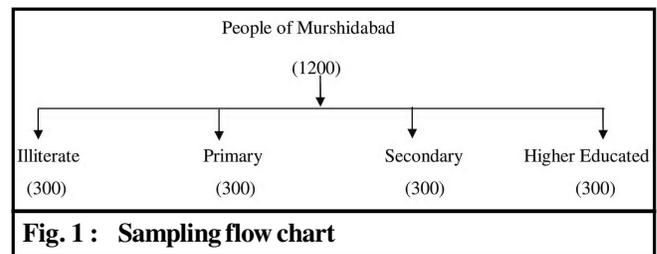
significantly regarding attitude towards polio of Murshidabad district.

[Corresponding Null Hypotheses were framed against each hypothesis]

## METHODOLOGY

### Sample:

In this study one thousand two hundred (1200) people were taken from 27 blocks under 5 subdivisions of Murshidabad district as a sample. This sample belongs to six hundred (600) from each high socio-economic status (HSES) and low socio-economic status (LSES) group of people. On the other hand, samples were divided/ included into four categories according to their educational status *viz.*, illiterate, primary educated, secondary educated and higher educated people by three hundred (300) each. Data was collected in the month of July, 2018 by purposive random sampling technique.



### Tools used:

Data were collected through self constructed and standardized "3-Point Likert Scale" with three alternative responses *viz.*, agree (A), Don't know (DK) and disagree (D) to measure knowledge and attitude towards polio among the people of Murshidabad district. The knowledge scale has 52 items/statements under 10 dimensions whereas attitude scale consists of 31 items/statements fewer than 9 dimensions. Both the scale has good content validity. By test-retest method reliability were calculated and found to be 0.96 on knowledge and 0.94 on attitude scale which is high value (Ali, 2014 and Sen Gupta, 2019).

## RESULTS AND DISCUSSION

Table 1 (*i.e.*  $H_{1a-1d}$ ) shows the comparison between different combinations of educational status of high socioeconomic (HSES) and low socioeconomic status (LSES) group of people of Murshidabad district about knowledge regarding polio and indicates that in all the cases the mean scores of HSES group of people is slightly

higher than LSES group of people. On the other hand, comparison between HSES and LSES “t” value is significant at 0.01 level of significance only in case of  $H_1$  and  $H_{1c}$ . Therefore,  $H_1$  and  $H_{1c}$  were retained and corresponding Null hypothesis were rejected.

In a study Misra *et al.* (2004) showed that literacy status did not show any significant role in coverage of PPI. It has also been reported that health workers are the major source of information for general public regarding polio (Mushtaq *et al.*, 2010) and these health worker are generally more accessible to secondary educated people and socioeconomic conditions has some impact on them. This is the main reasons of significant difference in case of secondary educated people. A work done by Bonu *et al.* (2003) showed that the reason is social inequalities, lower class families were unable to meet their healthcare needs due to their economic situation.

Table 2 shows the comparison among four educational status *i.e.* illiterate, primary educated, secondary educated and higher educated HSES group of people regarding knowledge. It is evident from the said table that mean value of knowledge score about polio is increasing according to their improvement of educational status and it is also evident that all the combinations of different educational status group of people of HSES were significantly different at 0.01 level of significance except in case of secondary educated and higher educated group of HSES people. Therefore,  $H_{1e-i}$  were retained and  $H_{1j}$  was rejected.

Rashid *et al.* (2012) in their study found significant differences among different educational status group of people. Again, high socioeconomic people having greater educational degrees, naturally carries more information about polio, but that doesn’t differ much from secondary educated people. This is the main reason for insignificant

**Table 1 : Comparison among different HSES and LSES group of people of Murshidabad district regarding knowledge about polio on the basis of their educational level**

Statistic Hypothesis and Variables	Comparison between	Mean	Sample Number	Mean difference	SD	t - Value
$H_{1a}$	HSES Ill know	115.84	150	1.25	12.32	1.24***
	LSES Ill know	114.60	150			
$H_{1b}$	HSES Pri know	127.36	150	2.36	11.70	1.23***
	LSES Pri know	125.00	150			
$H_{1c}$	HSES Sec know	137.41	150	3.59	10.46	4.20*
	LSES Sec know	141.00	150			
$H_{1d}$	HSES HEdu know	137.94	150	0.21	9.65	0.27***
	LSES HEdu know	137.73	150			

df= 149; \*Significant at 0.01 level; \*\*Significant at 0.05 level; \*\*\*Insignificant

**Table 2 : Comparison among different HSES group of people of Murshidabad district regarding knowledge about polio on the basis of their educational level**

Statistic Hypothesis and Variables	Comparison between	Mean	Mean difference	SD	t - Value
$H_{1e}$	HSES ill know	115.84	11.52	12.10	11.65*
	HSES pri know	127.36			
$H_{1f}$	HSES ill know	115.84	21.56	12.10	21.82*
	HSES sec know	137.41			
$H_{1g}$	HSES ill know	115.84	22.10	11.47	23.59*
	HSES H.Edu know	137.96			
$H_{1h}$	HSES Pri know	127.36	10.04	11.52	10.67*
	HSES Sec know	137.41			
$H_{1i}$	HSES Pri know	127.36	10.58	10.70	12.10*
	HSES H.Edu know	137.94			
$H_{1j}$	HSES Sec know	137.41	0.53	10.46	0.62***
	HSES H.Edu know	137.94			

N = 300; df= 149; \*Significant at 0.01 level; \*\*Significant at 0.05 level; \*\*\*Insignificant

difference between secondary and higher educated group of HSES people. Das and Das (2003) also showed similar result defining that high educated people are more conscious about the details of polio disease, but the secondary educated gathers information about polio mostly from television or from health workers.

Table 3 shows the comparison among four educational status *i.e.* illiterate, primary educated, secondary educated and higher educated LSES group of people regarding knowledge. Table 3 indicates that mean value of knowledge score about polio is increasing according to their improvement of educational status up to secondary educated people. But mean value of higher educated people is lower than secondary educated people. It is also evident that all the combinations of different educational status group of people of LSES were significantly different 0.01 level of significance So,  $H_{1k-p}$  were retained and alternative Null hypotheses were rejected.

All educational status groups of people in our study *i.e.* illiterate, primary educated, secondary educated and higher educated group of people (Table 3;  $H_{1k-1p}$ ) from LSES group significantly different from each other. Joseph *et al.* (2011) showed that the people belongs to low socioeconomic status group knows that polio is a paralytic disease, but they do not know how it spreads and affect one's body. They are totally unaware about the fact that polio can be transmitted by contaminated water or food. Work done by Chincholikar *et al.* (2000) and Ransania *et al.* (2000) also stands our outcome.

Table 4 indicates that  $H_{2b}$  and  $H_{2d}$  *i.e.* HSES and LSES group of primary educated and HSES and LSES group of higher educated showed insignificant differences regarding attitude towards polio. So, it can be concluded that hypotheses  $H_{2b}$  and  $H_{2d}$  were rejected and alternative Null hypotheses were accepted. The researcher felt that all the people of these group believe that it is necessary to give OPV to their children, similar result was found by

**Table 3 : Comparison among different LSES group of people of Murshidabad district regarding knowledge about polio on the basis of their educational level**

Statistic Hypothesis and Variables	Comparison between	Mean	Mean difference	SD	t - Value
$H_{1k}$	LSES ill <sub>know</sub>	114.60			
	LSES pri <sub>know</sub>	125.00	10.40	11.24	11.33*
$H_{1l}$	LSES ill <sub>know</sub>	114.60			
	LSES sec <sub>know</sub>	141.00	26.40	8.84	36.59*
$H_{1m}$	LSES ill <sub>know</sub>	114.60			
	LSES H.Edu <sub>know</sub>	137.73	23.13	8.89	31.85*
$H_{1n}$	LSES Pri <sub>know</sub>	125.00			
	LSES Sec <sub>know</sub>	141.00	16.00	10.53	18.59*
$H_{1o}$	LSES Pri <sub>know</sub>	125.00			
	LSES H.Edu <sub>know</sub>	137.73	12.72	10.49	14.85*
$H_{1p}$	LSES Sec <sub>know</sub>	141.00			
	LSES H.Edu <sub>know</sub>	137.73	3.63	10.35	4.75*

N = 300; df= 149; \*Significant at 0.01 level; \*\*Significant at 0.05 level; \*\*\*Insignificant

**Table 4 : Comparison among different HSES and LSES group of people of Murshidabad district regarding attitude towards polio on the basis of their educational level**

Statistic Hypothesis and Variables	Comparison between	Mean	Sample Number	Mean difference	SD	t - Value
$H_{2a}$	HSES Ill Att	77.37	150			
	LSES IllAtt	72.68	150	4.69	13.62	4.21*
$H_{2b}$	HSES Pri Att	77.80	150	.		
	LSES Pri Att	77.05	150	75	11.62	0.79***
$H_{2c}$	HSES Sec Att	78.78	150			
	LSES Sec Att	81.34	150	2.57	7.38	4.25*
$H_{2d}$	HSES HEdu Att	78.05	150			
	LSES HEdu Att	79.41	150	1.36	10.86	1.53***

df= 149; \*Significant at 0.01 level; \*\*Significant at 0.05 level; \*\*\*Insignificant

Joseph *et al.* (2011) where the study was conducted among 100 participants and majority of participants felt that people accepted PPI due to their belief that it will help in polio eradication.

But, on the other hand significant differences were exists between HSES and LSES illiterate and secondary educated group of people indicates hypotheses  $H_{2a}$  and  $H_{2c}$  were accepted and alternative Null hypotheses were dicarded. In case of illiterate people the socioeconomic factors are main reason not to have basic immunization whereas secondary educated people are conscious about polio but due to their economical background they cannot afford basic immunization facilities. From Bhuyan (2000), we can get similar results showing how socioeconomic status makes difference between two equally educated

group of people in case of health.

Table 5 shows the comparison among four educational status *i.e.* illiterate, primary educated, secondary educated and higher educated HSES group of people towards attitude. All the hypotheses are not significantly different regarding attitude towards polio. Therefore, hypotheses  $H_{2e} - H_{2j}$  were rejected and alternative Null hypotheses were accepted. The researcher found that HSES people are not interested to take their children to government hospitals. Similarly, Rashid *et al.* (2012) showed that the high socio economic people irrespective of all educational status think that they will put their children's life at risk if they vaccinated them from same dropper which used to give OPV to multiple children. They consider government hospitals as

**Table 5 : Comparison among different HSES group of people of Murshidabad district regarding attitude towards polio on the basis of their educational level**

Statistic Hypothesis and Variables	Comparison between	Mean	Mean difference	SD	t - Value
$H_{2e}$	HSES ill Att	77.37	0.43	12.51	0.424***
	HSES pri Att	77.80			
$H_{2f}$	HSES ill Att	77.37	1.41	10.64	1.63***
	HSES sec Att	78.78			
$H_{2g}$	HSES ill Att	77.37	0.68	12.93	0.644***
	HSES H.Edu Att	78.05			
$H_{2h}$	HSES Pri Att	77.80	0.98	9.79	1.23***
	HSES Sec Att	78.78			
$H_{2i}$	HSES Pri Att	77.80	0.25	11.53	0.23***
	HSES H.Edu Att	78.05			
$H_{2j}$	HSES Sec Att	78.78	0.73	9.17	0.98***
	HSES H.Edu Att	78.05			

N = 300; df= 149; \*Significant at 0.01 level; \*\*Significant at 0.05 level; \*\*\*Insignificant

**Table 6 : Comparison among different LSES group of people of Murshidabad district regarding attitude towards polio on the basis of their educational level**

Statistic Hypothesis and Variables	Comparison between	Mean	Mean difference	SD	t - Value
$H_{2k}$	LSES ill Att	72.68	4.37	11.15	4.80*
	LSES pri Att	77.05			
$H_{2l}$	LSES ill Att	72.68	8.67	10.76	9.86*
	LSES sec Att	81.35			
$H_{2m}$	LSES ill Att	72.68	6.73	12.89	6.40*
	LSES H.Edu Att	79.41			
$H_{2n}$	LSES Pri Att	77.05	4.29	8.03	6.60*
	LSES Sec Att	81.35			
$H_{2o}$	LSES Pri Att	77.05	2.35	10.80	2.67*
	LSES H.Edu Att	79.41			
$H_{2p}$	LSES Sec Att	81.35	1.94	9.39	2.53*
	LSES H.Edu Att	79.41			

N = 300; df= 149; \*Significant at 0.01 level; \*\*Significant at 0.05 level; \*\*\*Insignificant

unhygienic and feel safe to go to private hospitals or clinics.

It is evident from Table 6 that all the combinations of comparison among four educational status *i.e.* illiterate, primary educated, secondary educated, higher educated LSES group of people towards polio are significantly different regarding attitude towards polio. So, hypotheses  $H_{2k} - H_{2p}$  were accepted and alternative Null hypotheses were rejected.

The researcher found in her study that the people coming from LSES group, despite of carrying positive attitude towards polio as well as OPV campaign, are casual and ignorant about OPV and children health. From the study of Varghese *et al.* (1997), it was found that the LSES parents prefer to take paralyzed or effected children to the traditional healer or quack. The study also stated that the reason behind this is to wait whole day, commuting to and from the hospital. Lengthy waiting period, spending too much money on treatment, lack of communication, unavailability of good infrastructure of village hospitals are the basic reasons of their casual attitude.

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