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## **Socio-economic analysis of children with cerebral palsy - a case study of bidar district, Karnataka. India**

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**Abstract**

This study is designed to determine the socio-economic issues and probable causes of Cerebral Palsy in children pertaining to Bidar district. The present study considers various factors like fertility treatment, income level, birth weight, antibiotic taken during pregnancy, disabled child in family to examine various socio economic dimensions. The study reveals that the incidence of cerebral palsy is high on low income groups as well as in families that belong to rural areas predominantly cultivation as occupation. The relevant risk factors are analysed with the help of Primary Data. The present study may help in identifying factors that need further study in order to reduce the burden of Cerebral Palsy in the country. Cerebral Palsy is based on clinical evaluation but investigations carried out for some of the patients included socio-economic and demographical background. In this context the present research explores the socio-economic analysis of children with Cerebral Palsy, a Case Study of Bidar District, Karnataka. India.

**Keywords:** Socio-economic status, cerebral palsy, income, Health Status

### **1. Introduction**

Health is a fundamental human right and health is central to the concept of quality of life. In turn affects the social and economic development of the nation. Health is regarded a priority for sustained development intervention a priority for sustained development intervention both at the individual, community and national level, improved health is part of socio-economic development and is reared as an index of social development. Health aspect of life, ability to work, to play, to enjoy with families and socialize with fiends all depend crucially upon our physical well being.

"Cerebral" means "brain" and "palsy" means a physical disorder. loosely translated, it means "brain's paralysis". Disability is the major social and economic phenomenon in the country. In this country, disability is one of the most challenging issues. Cerebral palsy is the most common condition that is responsible for the child's disability. It is a chronic disabling condition resulting from permanent damage to the immature brain. It is commonly encountered that the incidence of cerebral palsy is about 2 per 1000 live births; the incidence is higher in males than in females i.e., 1.3:1. It is caused by damage to the cerebral cortex and other parts of the brain such as the cerebellum. It is a critical stage in the children's life cycle; the damage affects the developing brain which can occur during pregnancy, during childbirth or after birth up to the age of three, which results in limitation of movement and posture and is often accompanied by disturbances of sensation, depth perception and other sight-based perceptual problems, speech disorders, and sometimes even cognitive impairment. Cerebral palsy may even be accompanied by epilepsy.

Cerebral palsy occurs in approximately 2 to 2.5 per 1000 live births which is the main cause of physical disability in children. In the quality of life of children with Cerebral palsy in recent years

The consequences of cerebral palsy include retardation of growth and delay in motor development as well as cognitive and social economic problems. For many children with cerebral palsy parents are involved in their self-care activities. Self-care activities such as bathing, dressing, grooming, and eating, can be difficult for those living with cerebral palsy. Impaired upper limit function affects almost 50 per cent children and is considered the main factor contribution for inability to carry out daily activities.

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In the motor abnormalities, it has been estimated that about 80 per cent of children with cerebral palsy have some type of movement disorder [WHO, 2001]. Cerebral palsy is most often classified as either spastic, dyskinetic, or ataxic. Although spasticity is often the dominant disorder, many children with cerebral palsy have mixed spasticity and dyspraxia.

The most major change over movement and posture are first recognized during infancy or early childhood. Cerebral palsy can be associated with reduced life expectancy. The effect may be minimal, but if gross and fine motor, independent feeding, mental and visual capacities are severely impaired then, survival up to 40 years of age may be as low as 40 per cent. Further, causes of early death may include pneumonia, accidents, associated disorder e.g congenital heart disease and delayed recognition illness are also common. Cerebral palsy is attributable mostly to events that occur before birth or in the neonatal period; with about 10.20 per cent cases of Cerebral palsy arise from events such as head injury or central nervous system infection.

The consequences of Cerebral palsy include retardation of growth and delay in motor development as well as cognitive and social problems. For many children with Cerebral palsy, parents are personally involved in their self-care activities. Self-care activities, such as bathing, dressing, grooming and eating, can be difficult for these children as self-care depends primarily on use of the upper limbs. For those living with Cerebral palsy, impaired upper limb function affects almost 50 per cent of children and is considered the main factor contributing to decreased activity and participation in day to day activities. Since the hands are used for many self-care tasks, it is logical that sensory and motor impairments would impact negatively on daily self-care activities. The ideal management of Cerebral Palsy is comprehensive and affective physical rehabilitation, which is unfortunately expensive. However, even with the best rehabilitation, functional and physical recovery in Cerebral Palsy is rarely complete. Prevention, therefore is of primary importance. This study was conducted to determine the socio-economic issues and probable causes of Cerebral Palsy in children presenting to a tertiary hospital in India. These may help in identifying the factors that need further study in order to reduce the burden of Cerebral Palsy in the country. Cerebral Palsy was based on clinical evaluation but investigations carried out for some of the patients included socio-economic and demographical background. In this context, the present research explores the socio-economic analysis of children with Cerebral Palsy, a Case Study of Bidar District, Karnataka, India.

### **Causes of Cerebral Palsy**

Cerebral Palsy does not have a single cause like chicken pox or measles. There are many reasons why someone might have cerebral palsy. An unborn child might have suffered a brain injury, an infection, or abnormal development of the brain tissue. These are called "prenatal" causes, meaning they happened before birth. These causes are responsible for about 70 per cent of the cases of cerebral palsy. Another 20 per cent of cerebral palsy cases are caused by a brain injury that takes place during the birth process. In the United States, about 10 per cent of children who have cerebral palsy got it after they were born. This is called "acquired cerebral palsy." (The figures are higher in undeveloped country.) Acquired cerebral palsy happens when there is

brain damage during the first few months or years of life. This damage can be caused by brain infections, like bacterial meningitis or viral encephalitis. It can also be caused by a head injury usually from a motor vehicles accident, a fall, or child abuse during the first few years of life when the brain development is still taking place.

Most of the time the actual cause of cerebral palsy is not known. And, although there may have been a brain injury or a development problem, the problem may not have been noticed for months.

### **Risk factors for Cerebral Palsy**

There are many risk factors for cerebral palsy. They can include

- Premature (early) birth
- Low birth weight
- Blood clotting problems
- Inability of the placenta to provide the developing foetus with oxygen and nutrients
- RH or A-B-O blood type incompatibility between mother and infant
- Infection of the mother with German measles or other viral diseases in early pregnancy
- Bacterial infection of the mother, foetus or infant that directly or indirectly attack the infant's central nervous system
- Prolong loss of oxygen during the birthing process
- Several jaundice shortly after birth

It is important to understand that even if a child does risk factors it does not mean that the child will definitely get cerebral palsy. It just means that the chance of a child getting cerebral palsy is increased. Just because a risk factor is there does not mean cerebral palsy will occur. Or, if risk factors are not there, it doesn't mean that cerebral palsy will NOT occur. If a risk factor is present, it simply serves to alert parents and physicians to be even more observant of the infant's development. In this context, the preliminary study tries to explore the depth.

### **Cerebral Palsy**

Cerebral palsy is a condition caused by damage to the brain, usually occurring before, during or after birth. It mostly results in sensory disorders that affects the control of posture and movement caused by birth injury, congenital defects, and infectious disease.

### **Spastic Cerebral Palsy**

Spastic cerebral palsy is where there is too much muscle tone or tightness. Movements are stiff, especially in the legs, arms or back.

### **Ataxic Cerebral Palsy**

Defective muscular coordination especially that is manifested when the voluntary muscular movements are attempted. Main motor characteristics are disturbance of balance, voluntary movement present but uncoordinated.

### **Athetoid Cerebral Palsy**

It can affect movement of the entire body, which may be either slow or fast. Typically this form of cerebral palsy involves slow, uncontrolled body movement and low muscle tone that makes it hard for the person to sit straight and walk.

**Review of Literature**

Haugsgjerd, Jenssen, and Karlsson, (1998) [1] the central definition of the term 'mental health problems' is the individual's experience of his/her condition as a difficult in or obstacle to everyday life. It is the individual's understanding of him/herself and his/her relationship with other people as well as well as fallings and thoughts that usually impair functionality and created the symptoms. The most common understanding of the development of mental health problems involves:

- (1) Vulnerability factors;
- (2) Stressors (life events);
- (3) Coping strategies and
- (4) Protecting factors (e.g. social networks).

reported that the minimum age is particularly critical in estimating the prevalence of severe cerebral palsy; risk of infant mortality is greater among this group and differential use of a minimum age between clinicians may see differential rates of cerebral palsy. The incidence of live births, rather than infant survivors, can also affect the incidence among preterm babies (but not the cerebral palsy population as a whole).

Ministry of Health and Care Services, (2003) [3] reported that the Mental health problems are a major health concern, as they affect a large proportion of the population and have a strong affect on the individual, the family and health local environment. Mental health problems lead to difficulties at work and in everyday social life. The burden to family members of people with mental health problems form financial difficulties to emotional reactions, stress, and limited social activities.

Melheim *et al.*, (2013) [4] found that Cerebral palsy includes a group of permanent disorders of movement or posture caused by an early brain injury. Although several factors including preterm birth and low birth weight for gestation are associated with excess risk, the causes of cerebral palsy remain largely unknown. Pre-eclampsia affects 3-5 percent of pregnant women and is characterized by maternal hypertension and preteinuria occurring preterm after 20 weeks of gestation. Serious manifestations may induce iatrogenic preterm delivery, and pre-eclamsia contributes substantially to prematurity, prenatal morbidity, and mortality. Early onset pre-eclampsiais commonly associated with severe placental dysfunction, which can compromise fatal blood supply and cause fatal growth restriction, chronic hypoxemia and possible brain damage. Hence it is plausible that pre-eclampsia could be a risk factor for cerebral palsy.

D. Truscelli (2012) [5] in his study reported that cerebral damage itself is not progressive, its clinical expression is "not unchanging" over time. Parents and caregivers know and are afraid of loss of mobility performances, weight of

somatic problems, nutritional feeding difficulties, sialorrhea, gastro-esophageal reflux and its implications (insomnia), constipation, respiratory difficulties, sphinctore problem causes skin damages. Later, one has to cope with early aging and numerous new health problems, not only psycho-medical ones but also social consequences and lifetime high cost of treatment.

**Objectives**

- 1. To portray socio-economic characteristic of the children with cerebral palsy
- 2. To assess health care expenditure of children with cerebral palsy in the study area.
- 3. To explore what are the factors that influence children with cerebral palsy in Bidar District
- 4. To find predominant determinants of children with cerebral palsy in Bidar District
- 5. To offer a few suggestions to the policy makers from the Findings of the study so as to help the Enhancement plans for the Cerebral Palsy affected children.

**Hypothesis**

- 1. Socio and economic indicators have a strong effect on cerebral palsy affected children.
- 2. The jeopardy factors do not have a strong effect on the cerebral palsy affected children.

**Methodology**

The present study attempts to examine the Socio Economic Analysis of Children with Cerebral Palsy - A case study of Bidar district. This study is based on primary data. The identified variables are correlated with respect to respondent identified infants and young children with Hearing Impairment / Mental Retardation / Visual Impairment / Cerebral Palsy / Autism / Multiple Disabilities to provide early intervention services to address the disability with medical and rehabilitation services. The sampling method has been adopted to collect the primary data from the respondents. In total 160 cerebral Palsy Children have been interviewed with the help of pre-tested structured interview schedule for qualitative and quantitative data. The researcher has conducted interview using purposive sampling random sampling.

**Social -Economic Characteristics of the Sample Children**

In this section the social characteristics of the sample children's households with respect to their age and economic characteristics of the household wealth, income expenditure are examined, this socio-economic factors are expected to influence of children with cerebral palsy.

**Table 1:** Gender Wise Distribution of the Respondents

Details	Low income groups	Middle income groups	Higher income Groups	Total
Male	54 (95)	49 (93)	48 (96)	151 (94)
Female	3 (5)	4 (7)	2 (4)	9 (6)
Total	57 (35.6)	53 (33.1)	50 (31.2)	160 (100)

Source: Computed

Sex is a decision making variable in the community. In this context sex wise classification of the sample respondents is necessary. This above table-1 explains that sex wise distribution of the respondents. Out of 160 respondents 94

percent of the families were male headed families. Only 6 percent of the families were female headed. Therefore concluded that, the majority of the respondents were male headed families in the study area.

**Table 2:** Age Wise Distribution of the Children's

Details	Low income group	Meddle income groups	Higher income groups	Total
Below 5	23 (40)	19 (36)	18 (36)	60 (38)
5-10	14 (25)	10 (19)	8 (16)	32 (20)
10-15	14 (25)	14 (26)	11 (23)	39 (24)
Above 15	6 (10)	10 (19)	13 (26)	29 (18)
Total	57 (35.6)	53 (33.1)	50 (31.2)	160 (100)

Source: Computed

Age plays a vital role as a factor for influence economic activities. The age of the sample respondents is grouped into four categories such below 5, 5-10, 10-15, above 15. The above table 2 explains that age wise distribution of the children. Out of 160 respondent's children, 38 percent of

them below five years Old, 24 percent of them age between five to ten years, 24 percent of them the age between ten to fifteen years and 18 percent of them above fifteen years. It indicates that, the majority of the respondent's children age was below five years in the study area.

**Table 3:** Distribution of Respondents According to the Occupation

Details	Low income groups	Middle income groups	Health income groups	Total
Cultivation	3(5)	1(2)	4(8)	8(5)
Agricultural /wage Labours/coolies	22(39)	13(24)	27(54)	62(39)
Non-agricultural wage labours	18(32)	20(37)	7(14)	45(28)
Artesian/independent work skilled labour	7(12)	11(20)	4(8)	22(14)
Petty shop and other trade	7(12)	8(15)	8(16)	23(14)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

Occupation is an important factor that influences the economic condition of the family. The Occupational status of the study area is categorized into five groups. Agriculture/wage/ labours/coolies, Non-Agriculture / wage / labours, Artesian /independent work/skilled labours, Petty

shop, and other trade and cultivation. The majority of the respondents have occupations in Agriculture/wage/labours/coolies in the study area followed by non-Agriculture /wage / labours Artisan/independent work/skilled and cultivation.

**Table 4:** Distribution of Respondents according to the monthly Income of their Family

Details	Low income groups	Middle income groups	High income groups	Total
Rs. 2000	14(71)	36(68)	35(70)	112(70)
Rs. (2000-3000)	11(19)	11(21)	10(20)	32(20)
Rs. 3000	5(10)	6 (11)	5(10)	16(10)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

Income is one of the primary factors that influence the standard of living. It is one of the indicators for calculation of HDI. The monthly income of the respondents includes income employment business, Agriculture, non-farm activities and other source. This income groups have been categorized into three major sub-classes such as below Rs. 2000, Rs 2000-3000 and above Rs 3000. It is inferred from

table 4 that out of 160 sample respondents' households only 10 per cent of respondents earned above Rs 3000, 20 percent of the respondents earned an income between Rs 2000-3000. The majority of the respondents that is around 70 percent of the respondents earned a monthly income below Rs 2000.

**Table 5:** Specialist Cost of CP Children (Monthly)

Details	Low income group	Middle income groups	High income groups	Total
Below Rs. 1000	19(11.9)	25(15.6)	12(7.5)	56(35)
Rs. 1001-1250	22(13.8)	15(9.4)	26(16.2)	63(39.4)
Above Rs.1251	16(10)	13(8.1)	12(7.5)	41(25.6)
Total	57(35.6)	53(35.1)	50(31.2)	160(100)

Source: Computed

The above table 5 shows that the total specialist cost of CP children. The specialist costs are Neurologist, Paediatrician, Clinic/centre, Physician, Ophthalmologist, and Psychiatrist consultation charges.

The specialist cost has been grouped into three categories such as below Rs. 1000, Rs.1001-1250 and followed by

above Rs. 1251. Out of 160 sample respondents 35 per cent of them have below Rs. 1000, 39 per cent of sample respondents have spent Rs 1001-1250. 25.6 per cent of them have spent above Rs. 1251. It is concluded that the majority of the respondents have spent Rs.1001-1250 per month for consulting a specialist in the study area.

**Table 6:** Treatment Cost of CP Children (Monthly)

Details	Low income	Middle income Group	High income group	Total
Below 4500	27(16.9)	25(15.6)	12(7.5)	64(40)
4501-5500	15(9.4)	16(10)	20(12.5)	51(31.9)
Above 5501	15(9.4)	12(7.5)	18(11.2)	45(28.1)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The total monthly treatment cost was spent for the CT scan, X-rays, medical expenses, travel expenses, and other costs expect doctor fees. The total monthly treatment costs have been grouped into three categories such as below Rs.4500, and Rs. 4501-5500 and followed by above Rs. 5501. It is

inferred from the table 6 that the majority of the respondents have spent below Rs. 4500 for treatment per month in the study area.

**Health Status of Mother and children**

**Table 7:** Vitamin A Mega Dose in last 6 months

Details	Low income groups	Middle income group	High income group	Total
Yes	46 (81)	42(49)	40 (80)	128 (80)
No	11 (19)	11(21)	10(20)	35(20)
Total	57(35.6)	53 (33.1)	50(31.2)	160 (100)

Source: Computed

The above table 7 reveals that the out of 160 respondents. 80 per cent children had received vitamin A mega dose and only 20 per cent children have not had mega dose. It is thus

concluded that most of the children had received vitamin mega dose.

**Table 8:** Deworming Tablet in last 6 Months

Details	Low income group	Middle income group	High income group	Total
Yes	52(91)	47(89)	45(90)	144(90)
No	5(9)	6(11)	5(10)	16(10)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 8 reveals that the out of the 160 respondents. 90 per cent children had received deworming tablets and only 10 percent children did not receive

deworming tablets. Hence, it is implied that majority of the children had received deworming tablets in the study area.

**Table 9:** How many Time your Child Received PPI

Details	Low income groups	Middle income groups	High income groups	Total
Less than. 5	23(40)	19(36)	18(36)	60(38)
5-6	14(25)	10(19)	8(16)	32(20)
6-7	14(25)	14(26)	11(23)	39(24)
Above7	6(10)	10(19)	13(26)	29(18)
Total	57 (35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

Universal immunization of children under the age of one against major vaccine-preventable disease (tuberculosis, diphtheria, pertussis, tetanus, hepatitis B, homophiles influenza type B (hib) poliomyelitis, and measles) is one of the most cost- effective means of reducing infant and child morbidity and mortality. In Bidar district, the above table 9

reveals that the out of 160 respondents, 38 percent received PPI less than 5 times, 20 percent are 5-6 times, 24 percent had received 6-7 times, and 7 had received above 7 times. Finally it is concluded that majority of the children had received PPI less than 5 times in the study area.

**Table 10:** Measles at 9 Months/MR vaccine at 12 months

Details	Low income groups	Middle income group	High income groups	Total
Yes	46(81)	42(49)	40 (80)	128(80)
No	11(19)	11 (21)	10(20)	32(20)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

According to the WHO immunization guidelines, children are considered fully immunized when they have received one dose of the vaccine tuberculosis (BCG); three doses of the vaccine against diphtheria, pertussis, and tetanus (DPT); three doses of polio vaccine (excluding polio vaccine given

at birth); and one dose of measles vaccine. All children should receive the suggested number of doses of BCG, DPT, OPV, and measles vaccines during their first year of life. BCG is given at birth or at first clinical contact; DBT and polio require three doses at approximately the age of 6,

10, 14 weeks; and measles vaccine is given soon after the age of 9 month. All of the vaccines in the routine immunisation schedule are provided free of cost in all public

health facilities in India. In Bidar district, 80 percent had received measles/MR immunization and only 20 percent of the children had not received.

**Table 11:** Antenatal Care during Pregnancy

Details	Low income groups	Middle income groups	High income groups	Total
Yes	48(84)	45(85)	43(86)	136(85)
No	9(16)	8(15)	7(14)	24(15)
Total	57 (35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 11 reveals that, at the time of pregnancy, the pregnant women need good attention. Out of 160 respondents. 85 percent of mothers get better antenatal care,

at the time delivery. Therefore it is concluded that most of the mothers get better antenatal care, at the time of delivery.

**Table 12:** Type of delivery

Details	Low income group	Middle income group	Higher income groups	Total
Caesarean	35(61)	36(68)	24(48)	97(61)
Normal	22(39)	17(32)	26(52)	63(39)
Total	57 (35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 12 reveals that the out of 160 respondents. 97 percent deliveries were caesarean and only 39 percent

were normal in the study area. Therefore it is concluded that most of the deliveries were caesarean in the study area.

**Table 13:** Birth Interval

Details	Low income groups	Middle income group	High income group	Total
2 year	48(84)	45(85)	43(86)	136(85)
3 year	9(16)	8(15)	7(14)	24(15)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 13 reveals that the out of 160 respondents, 85 percent of the children were born with a 2 year birth interval and 24 percent of the children were born with a 3

year birth interval in the study area. Therefore, it is concluded that most of the children were born with a 2 year birth interval in the study area.

**Table 14:** Health Problem during Pregnancy

Details	Low income groups	Middle income group	High income group	Total
Yes	45(79)	43(81)	40(80)	128(80)
No	12(21)	10(10)	10(20)	32(20)
Total	57(35)(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 14 reveals that during the time of pregnancy 80 percent of mother had faced health complication. Only 20 percent of the mother has did not face any health

problems during pregnancy. It is concluded that majority of the pregnant mother had faced health problems.

**Table 15:** Under Weight during Birth

Details	Low income groups	Middle income groups	High income groups	Total
Yes	52(91)	47(89)	45(90)	144(90)
No	5(9)	6 (11)	5(10)	16(10)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 15 reveals that, out of 160 respondents. 90 percent of the babies were born underweight. Only 10

percent of the babies were born with normal weight. It is concluded that most of the babies were born underweight.

**Table 16:** Antibiotic Taken During Pregnancy

Details	Low income groups	Middle income groups	High income groups	Total
Yes	48(84)	45(85)	43(86)	136(85)
No	9(16)	8(15)	7(14)	24(15)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 16 explains that, out of 160 respondents. 85 percent of the mothers had taken antibiotic medicines during pregnancy. Remaining 15 of the mothers did not take

antibiotic medicines. It is concluded that most of the mothers had taken antibiotic medicines during pregnancy due to ill health.

**Table 17:** Fertility Treatment

Details	Low income groups	Middle income group	High income group	Total
Yes	5(9)	6(11)	5(10)	16(10)
No	52(91)	47(89)	45(90)	144(90)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 17 explain that the out of 160 respondents, 10 percent of the female undertook fertility treatment. 90 percent of the mothers did not taken any fertility treatment.

It is concluded that majority of the women did not take any fertility treatment.

**Table 18:** Family Members Designated As Cerebral Palsy

Details	Low income groups	Middle income group	High income groups	Total
Yes	11(19)	11(21)	10(20)	32(20)
No	46(81)	42(49)	40(80)	128(80)
Total	57(35.6)	53(33.1)	50(31.2)	160(100)

Source: Computed

The above table 18 reveals that only 20 percent of the family members were affected by cerebral palsy caused on account of hereditary factors brought in from the previous generation whereas 80 percent of the family members did not get affected by cerebral palsy through the hereditary factors brought in from the previous generation.

- 80 % of the family members did not get cerebral palsy on the grounds of inheriting from the previous generations.

**Findings**

**Socio-economic Profile of the cerebral palsy children’s families**

- 94 % of families were Male-headed in the study area.
- 38 % of the respondent’s children age group was below five years in the study area
- 39 % of the respondents were occupied in Agriculture/wage/labours/coolies in the study area.
- 70 % of the respondent earned below Rs. 2000 per month
- 39.4 % spent below Rs. 1001-1250 for health care, as total specialist cost per month, in the study area.
- 40 % of the respondents spent below Rs. 4500 for care total treatment cost per month, in the study area.

**Health status of mother and children with cerebral palsy**

- 80 % children had received vitamin A mega dose.
- 90 % had received deworming tablets.
- 38 % children had received PPI less than 5 times.
- 80 % children had received measles/MR immunization.
- 85 % of the mother get better antenatal care, at the time of delivery.
- 90 % deliveries were reported in hospital
- 97 % deliveries were caesarean
- 85% of the children born with a 2 year birth interval.

**Risk factors**

- 80 %of mother had faced health complication during the time of pregnancy
- 80 % of the children were affected with severe jaundice shortly after birth.
- 85 % of the mother has taken antibiotic medicine during pregnancy.
- 10 % of the females had undertaken fertility treatment.

**Suggestions**

The following suggestions are placed before the Government for enhancing the health status further.

- We need to reach the rural population with more intensive and workable programmes keeping in mind the problems of cerebral palsy and the rural environment.
- Preconception services that prevent pregnancy in adolescence, prevent unintended pregnancies, promote birth spacing, optimize pregnancy weight, provide folic acid supplementation, promote rubella vaccination and screen for sexually transmitted infections are priority interventions to reduce preterm birth rates.
- Rh-negative women should receive Rho (D) immune globulin to prevent destruction of fetal blood cells.
- The Rapid Neurodevelopment Assessment (RNDA) tool, recently validated for 0-5-years-old, was development to address the need for simplified tools for use by non-specialist health professionals to identify specific Neurodevelopment impairments and disabilities in infant, toddlers and pre-schoolers.
- To develop a model for community-based day care centres that meet the social service needs of children with disabilities and help parents cope with the additional childcare responsibilities. At these centres, children can access rehabilitation services or participate in sports, games and activities that serve education and awareness-raising purposes. Other services, like referrals, life-skills training, and parenting support, are also given.
- Prenatal care can monitor the mother’s blood pressure and address infections quickly so the mother stays in good health and decreases the possibility of cerebral palsy.
- To improve the lives of disabled children and their families. We also support public service announcements, campaigns and television spots to raise

awareness and reduce discrimination against children with disabilities.

- Awareness rising among parents on the impertinence of early identification and intervention of CP.
- A concerted effort must be made to train mothers of children with cerebral Palsy in handling the needs of their children. This effort should start from the stage of identification of the disability of the children.
- Organizations of parents should be formed to fight for the rights of persons with cerebral Palsy and their families and to persuade the government to take action for the implementation of various rehabilitative measures.
- Special teachers and school authorities should recognize the important role of mothers in the whole process of special education and should keep on motivating the parents for their active participation.

### **Conclusion**

The study reveals that the economic aspects of cerebral palsy and their families are extremely marginalized in all aspects of life. Therefore, there is a need to give greater emphasis for the children with CP. Finally the study is concluded with the finding that the socio-economic conditions and the jeopardy such as fertility Treatment, income level, Birth weight, Antibiotic taken during pregnancy disabled child in your family, Health problems during pregnancy, are variables that were predominantly influencing children with cerebral palsy. Hence this should be enabled so that the planners and policy makers are forced to review the prevailing health policies.

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