

## Demographic and Pregnancy related History of Children with Clubfoot Deformity

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### Abstract:

**Background:** Clubfoot may occur as part of a greater syndrome or as an isolated malformation. A combination of genetic and environmental factors appears to be associated with the congenital clubfoot deformity and incidence varies with genetic background,

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*gender and race. **Objective:** To assess demographic and pregnancy related history of children with clubfoot deformity. **Methods:** A total of 143 club foot children, age between 1 day to 5 years of both male and female were selected purposively to conduct this study. Face-to face interview methods was adopted by using semi-structured questionnaire. **Results:** More than one third (38.5%) children were in age group 13 to 36 months where second most (31.5%) were in age group 4 to 12 months and rest of 21.7% and 8.4% children were in age group <4 months and >36 months respectively. Study revealed that about 37.8% were first baby and rest of 33.6%, 19.5% and 9.1% were 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> baby respectively. Study found that 74.8% respondents did not have any family history of clubfoot deformity and 11.2% were had family history. In case of gestational period of mother 89.5% respondents were term baby and 9.8% were pre-term baby. **Conclusion:** Study suggested that early marriage and parental education may influence clubfoot.*

**Key words:** Demography, Pregnancy, Clubfoot deformity

## **Background**

Clubfoot, also known as ‘congenital talipes equinovarus’ (CTEV) caused by the abnormal development of a baby’s bones, ligaments and muscles whilst in the womb<sup>(1,2)</sup>. Usually clubfoot appears to be twisted of foot inwards and downwards<sup>(3,4)</sup>. It is a relatively common **Error! Bookmark not defined.**, occurring in about one in every 1,000 live births and half of the cases of clubfoot affect both feet, which are called a bilateral club foot. It occurs in males twice as frequently as in females<sup>(1,4)</sup>. Clubfoot may occur as part of a greater syndrome or as an isolated malformation. A combination of genetic and environmental factors appears to be associated with the congenital clubfoot deformity and incidence varies with genetic background, gender and race<sup>(5,6,7)</sup>. Risk factors included family history, smoking during pregnancy, not enough amniotic fluid during pregnancy

or too little of the fluid that surrounds the baby in the womb may increase the risk of clubfoot deformity. Getting an infection or using illicit drugs during pregnancy may also increase the risk of clubfoot as well<sup>(8)</sup>.

About 5000 children are born with clubfoot deformity in Bangladesh each year which implies about one of every 1000 children born with clubfoot deformity. If it is not treated than this condition becomes a lifelong deformity and finally causes disability and reduce productivity. Untreated clubfoot causes the children to grow up as burdens of the family and ultimately leads to significant poverty. In Bangladesh many of the beggars have found with visible clubfeet deformity. For older children and adults, expensive corrective orthopedic surgery is the only option for treatment which is not often affordable by poor people. However younger children can be treated by different methods among them the Ponseti Method, which is an effective, inexpensive, and permanent treatment through progressive casting, the soft, pliable tissues of the babies are corrected<sup>(9)</sup>.

Experts are persistently looking for the most ideal option in the management of clubfoot, especially for young infants. But till now Ponseti method are suitable, especially for developing countries. In this method, from the first three months, passive stretching and strapping techniques were employed. Subsequently, plaster of paris cast was applied using the serial plastering approach. Stretching continued each time the cast was removed for replacement. Follow up after one year showed that the child could walk with apparently normal gait and there was no residual deformity. There is need for more enlightenment on the importance of early referral of CTEV cases for Physiotherapy care<sup>(10)</sup>. This case report presents the patter of clubfoot deformity and its adherence to management in Bangladeshi people.

## **Methods**

**Study type:** The study was a descriptive type of cross-sectional study conducted from September 2012 to April 2013 in outpatient department (OPD) of selected hospitals in Rajshai and comilla division.

**Sampling methods:** A total of 143 club foot children, age between 1 day to 5 years of both male and female were selected purposively to conduct this study. Face-to face interview methods was adopted by using semi-structured questionnaire.

**Data analysis:** The surveyed data has converted into frequencies and percentage forms. After collecting information from primary source, data was processed and analyzed by following steps:

1. Reviewed of collected data and information
2. Sorted of revised data and information
3. Analyzed for easy explanation

Then Data entered into computer was continued along with data collection. Data checking was done meticulous and corrections for any error. Data will be analyzed using SPSS (statistical package for social sciences) for windows 16.0. Necessary tabulations and cross-tabulations, charts and diagrams drawn for summarizing and easy visual presentation of data.

**Ethical issue:** Verbal informed consent from the respondents after proper explanation of the purpose and method of the study was undertaken. Ensuring the respondent's parents about maintain confidentiality.

## Result

**Table 1: Socio-economic characteristics of the respondents**

Characteristics	Frequency	Percentage
Gender		
Boys	92	64.3
Girls	51	35.7
Age		
< 4 months	31	21.7
4 to 12 months	45	31.5
13 to 36 months	55	38.5
>36 month	12	8.4
Father's level of education		
Illiterate	13	9.1
Primary	41	28.7
Secondary	51	35.7
College	30	21
University	8	5.6
Mother's level of education		
Illiterate	6	4.2
Primary	51	35.7
Secondary	65	45.5
College	19	13.3
University	2	1.4
Mother's marital age		
< 18 ears	89	62.2
18 to 10 years	54	37.8
Family income		
< 5000 tk	22	15.4
5,000 to 10,000 tk	77	53.8
11,000 to 20,000 tk	38	26.6
21,000 to 30,000 tk	6	4.2
Family members		
< 5	74	51.7
5 to 6	48	33.6
7 to 10	21	14.7

Among 143 clubfeet children study found about 92 (64.3%) children were boys and 51 (35.7%) were girls. In case of age distribution, more than one third (38.5%) children were in age group 13 to 36 months where second most (31.5%) were in age group 4 to 12 months and rest of 21.7% and 8.4% children were in age group <4 months and >36 months respectively. In father's level of education study found more than one third (35.7%) children's father have secondary level of education where rest of 28.7%, 21%, 9.1%, 5.6% children's father have

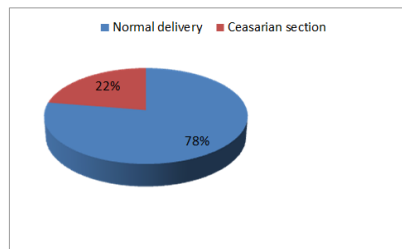
primary, college, illiterate and university level of education respectively. In mother level of education study found the highest proportion (45.5%) of mothers have secondary level of education the second highest (35.7%) have primary level of education and rest of 13.3%, 4.2% and 1.4% mothers have college, illiterate and university level of education respectively. In case of club foot children mother's marital age, almost two third (62.2%) mothers got married when they were in below 18 years of age. Family income showed that more than half (53.8%) of the respondents family income were 5000 tk to 10,000 tk where rest of 26.6%, 15.4% and 4.2% family income were 11,000 to 20,000 tk, <5000 tk and 21,000 tk to 30,000 tk respectively. Study found half of the (51.7%) respondent's family members were <5 person and about one third (33.6%) respondent's family members were 5 to 6 person and rest of 14.7% respondent's family members were 7 to 10 person (Table 1).

**Table 2: Pregnancy related history of the respondents**

Characteristics	Frequency	Percentage
Birth order		
1 <sup>st</sup> baby	54	37.8
2 <sup>nd</sup> baby	48	33.6
3 <sup>rd</sup> baby	28	19.5
4 <sup>th</sup> baby	13	9.1
Family history of clubfoot		
Yes	16	11.2
No	107	74.8
Don't know	20	14
Gestational period of mother		
Pre-term	14	9.8
Term	128	89.5
Post-term	1	0.7
Adverse pregnancy outcome		
No problem	110	76.9
Still birth	6	4.2
Miscarriage	16	11.2
LBW	1	0.7
Premature baby	1	0.7
Physically challenge	2	1.4
Mentally challenge	7	4.9

In case of birth order of the mother of having clubfoot children, study revealed that about 37.8% were first baby and rest of 33.6%, 19.5% and 9.1% were 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> baby respectively. Having other case of clubfoot in family study found that 74.8% respondents did not have any family history of clubfoot deformity and 11.2% were had family history and rest of 14% don't know whether any family members were affected by clubfoot before. In case of gestational period of mother study found that about 89.5% respondents were term baby and 9.8% were pre-term baby and rest of 0.7% was post-term baby. The adverse effects of pregnancy outcome study revealed that 76.9% did not face any adverse effects where 4.2%, 11.2%, 0.7%, 0.7%, 1.4% and 4.9% were still birth, Miscarriage, LBW, Premature baby, Physically and Mentally challenged respectively (Table 2).

**Figure 1: Management of delivery**



In case of management of delivery study found that about 22% mother need caesarian section and rest of 78% were normal delivery (Figure 1).

## **Discussion**

The choice of techniques for management of clubfoot in infants has historically provoked much debate. Recently, there is a swing towards conservative management possibly because the results of surgical procedures are unpredictable<sup>(11)</sup>. This case

report showed the pattern and adherence of an infant in the management of clubfoot. Study found about two-third children with clubfoot deformity was boys and among them more than one third were in age group 13 to 36 months. However, in case of parental educational level, study revealed that the highest majority of the both parents had secondary level of education. About two third respondents' mother married before 18 years and more than half of the respondents' economic status were poor and more than half of the respondents' family members were <5.

Study revealed that one third respondents were 2<sup>nd</sup> baby and one third were 3<sup>rd</sup> baby. More than two third respondents did not have any family history of clubfoot. The highest majority of the respondents were term baby and more than two third respondent's mother did not face any adverse effects during pregnancy. About 22% respondents with clubfoot deformity needed caesarian section during delivery.

## **Conclusion**

Study suggested that early marriage and parental education may influence clubfoot. Although most of the parents who have children with clubfoot deformity hard about the ponseti treatment from the other parents, its required more mass media Champaign and awareness programs. Those who were under the coverage of treatment some of them were not regular in receiving treatment therefore educational program can be designed mentioning the benefits of early and regular treatment.

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