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Analysis of Effects of Covid-19 on the Attendance of Children and its Outcomes of Their Treatment in a CTEV Clinic of West Delhi

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Abstract: ***Treatment of Clubfoot children by Ponseti method of serial casting is a well know procedure being practiced all over the world. During Covid times many children were not able to attend their regular CTEV clinics at various places leading to inadequate treatment of this deformity. This not only causes relapses but may also lead to the permanent disability. The fear of permanent disability of these children motivated us to create awareness among the parents regarding this and hence bringing them back to CTEV clinics on regular basis.***

Keywords: Clubfoot children, CTEV Clinics, Ponseti method, Relapses, Permanent disability

I. INTRODUCTION

Clubfoot has been one of the most common congenital deformity with an occurrence in around fifty thousand children per year in India alone [1]. It can be cured by conservative method if diagnosed and managed at an early stage. The various deformities that occur in unilateral Clubfoot include Cavus , Adduction, Varus, Equinus along with short foot and thin leg as compared to normal side [2]. Though the number of cases with bilateral involvements are also significant. Management of Clubfoot children by the Ponseti technique require serial casting and manipulations for early correction of the CTEV deformity. Early attention gives easy and long term good results if done properly . It requires management in two phases :

1) Phase of manipulation and corrective castings (weekly for approximately 2 months). Usually it takes approximately 6-7 weekly visits for Serial Casting on a regular basis. It is usually followed by percutaneous tenotomy of Tendo-achilies. This surgical procedure is performed under local anaesthesia as an OPD procedure.

2) Phase of bracing includes usage of Stein Beek abduction Brace it requires fortnightly visits in the next four months followed by monthly visits up to the age of 4 years. Both the phases of treatments require supervised follow up in order to prevent relapses[3].

Usually all children are managed by experts and counselors. During Covid times many children were not able attend the clinics regularly due to following reasons namely: Lockdown and various Government restrictions, Migration of families, Inadequate resources, Covid affected parents and their children etc. So we planned to conduct a study on the effects of Covid 19 on management of Clubfoot children in a busy CTEV clinic in West Delhi in collaboration with Cure International India and analyzed their outcome .

The authors Gavish Arora and Garv Arora, two high school students, have conducted this study under the supervision of Dr. Vineet Kumar Arora who is working as an orthopedic surgeon .

II. AIMS AND OBJECTIVES

A. *Primary Objective*

To study the effects of Covid -19 pandemic on the attendance of children and factors affecting it in a CTEV clinic.

B. *Secondary Objective*

To formulate any measures to improve their attendance in the clinic and the outcome of the management.

III. MATERIAL AND METHOD

During the period from May 2020 to 30 April 2021 , we conducted an observational study to analyze the effect of Covid 19 on the management of clubfoot children in a CTEV clinic in a 500 bedded hospital of West Delhi in collaboration with Cure India International and analyzed their outcome. In this study we gathered data of 150 patients who were attending clinic regularly and later on could not visit the clinic due to various reasons during this pandemic era. All these parents were consulted telephonically to find out the reason for their absence. The various reasons were noted and the parents were counseled to create awareness regarding the chances of relapse as well as permanent disability of their children.

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The various reasons suggested and enumerated as:

1) Lockdown and containment zones in various cities
2) Inadequate resources to visit the hospitals .
3) Many unwilling to visit hospital in order to avoid exposure to Covid
4) Medical teams have diverted duties and thus non Covid cases were not given priority in various hospitals.
5) Shortage of staff and manpower at the hospital
6) Many patients and/or their children were affected by Covid.
7) Many children lost their family members during pandemic.

IV. WHAT WE DID? (OUR ROLE)

1) We gathered data from the counselors at the clinic and assisted them to connect with the parents of Clubfoot children.
2) Tried to understand their problems, plight and situation.
3) Tried to find any solution for them and coordinated between the counselors and the patients.
4) Convinced the parents to attend the clinic whenever possible
5) During the period when they were not able to attend the clinics, we taught them manipulation of feet to improve deformity through video calls .
6) Tried to provide braces to Clubfoot children who needed to change theirs.
7) Collected and analyzed the data of the children who were approached out of the total registered.
a) How many responded to calls from counselors
b) How many patients attended clinics after counseling
c) What is the success rate
d) What is the feedback from parents, and counselors of Cure International India.

V. OBSERVATIONS AND RESULTS

The various factors were divided into two main categories patient factors and social factors.

Table I
FACTORS AFFECTING

Patient Factors	Social Factors
• Lack of resources to visit the hospitals including finance and transportation • Many patients were themselves affected by Covid. • Majority were unwilling to attend clinic to avoid exposure to Covid • Migration to their native places • Unaware of complications of inadequate treatments including relapses and permanent disability.	• Lockdown and other government restrictions in various cities • Medical teams have been diverted to duties in essential areas and as other departments were not given priority • Shortage of staff and manpower in the hospital

The two types of factors affecting the management of clubfoot children included Social and Patient factors. In our study we realized most of the parents were unaware of complications of not attending the clubfoot clinic regularly. So as a team in association with Cure International India, the parents of all the patients were contacted.

Table II
NUMBER OF PATIENTS

No. of children involved in survey :	150
No. of children visiting during lockdown:	0
No. of children already visiting after lockdown (before counseling) :	20
No. of Parents consulted:	150
No. of children visiting after lockdown(after counseling):	120
No. of children not visiting even after counseling (lost to follow-up):	30
Success rate :	66.67%

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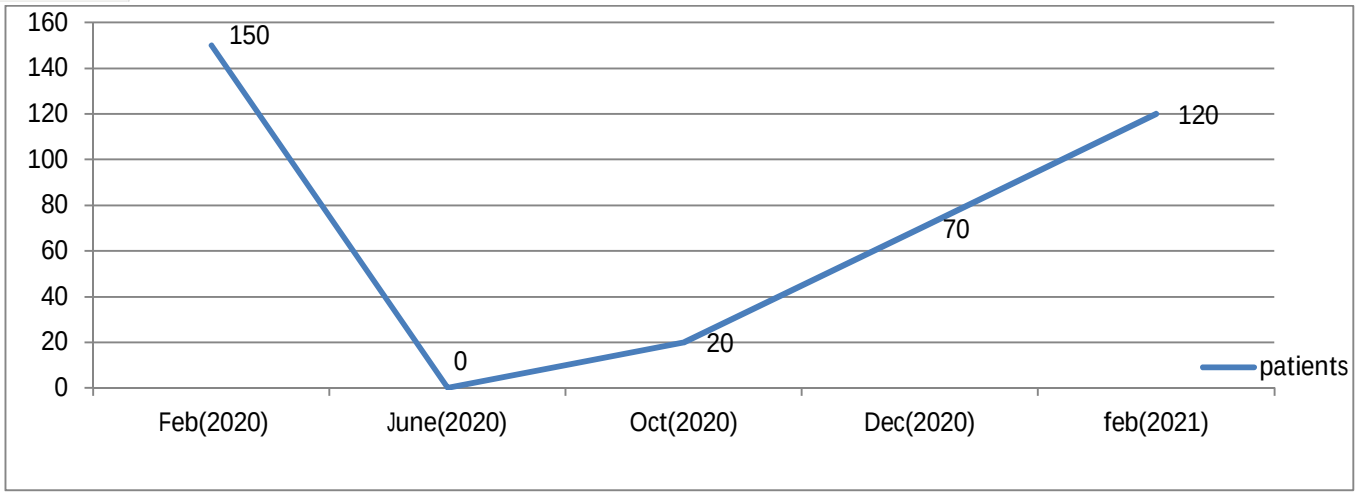


Fig 1 Clubfoot children visits

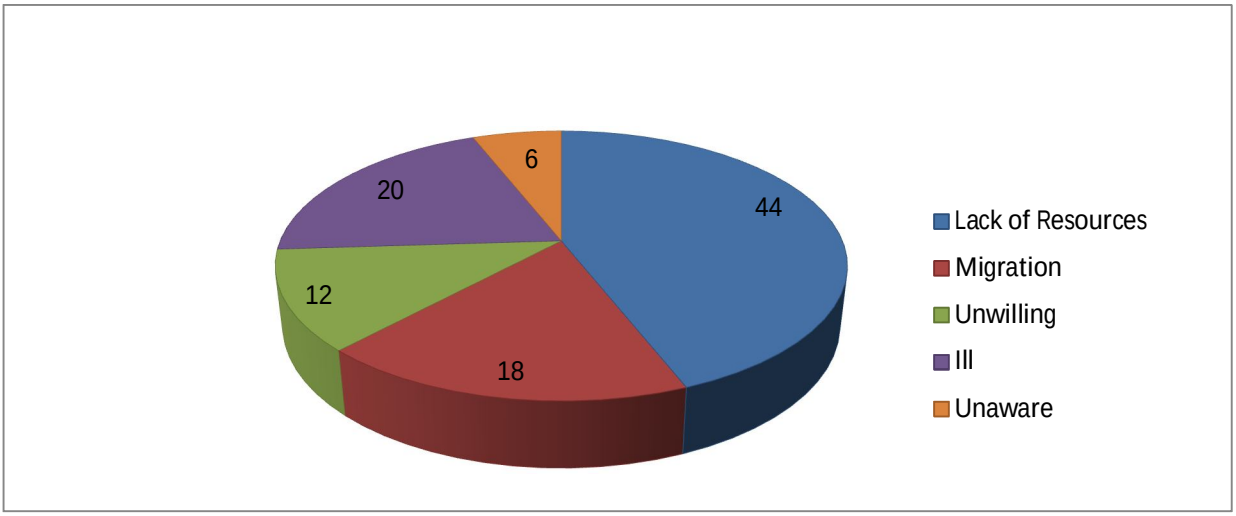


Fig 2 Percentage Wise Reasons for Not Attending Clinic (Patient Factors)

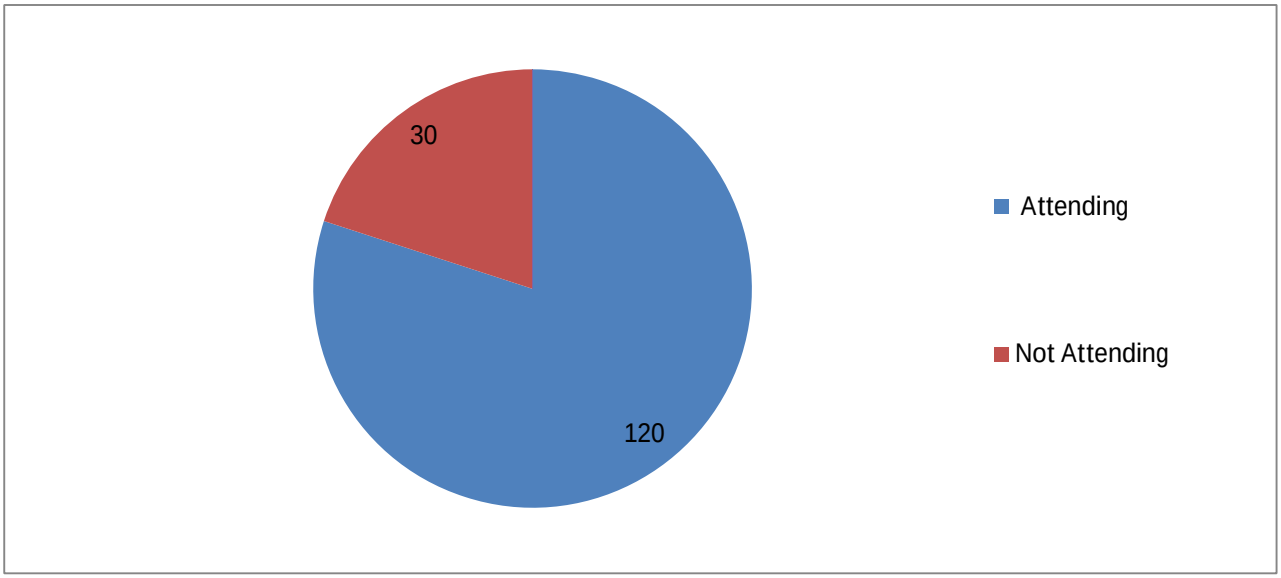


Fig 3. Number of Children Attending Clinic after Counseling and Motivation

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Fig 4. Attending CTEV clinic with Clubfoot children



Fig 5. Working on braces for Clubfoot children



Fig 6. Working on braces for Clubfoot Children

VI. SUMMARY

A. A unique, prospective analytical study was conducted for 1 year from May 2020 to April 2021in a CTEV Clinic of a Public sector hospital in Delhi.

B. The primary aim of the study was study the effects of Covid -19 pandemic on the attendance of children and its outcomes on treatment in CTEV clinic.

C. The parents of almost 150 children were contacted telephonically and counseled to attend the clinic regularly.

D. Only 20 children were attending clinic before counseling .

E. With the help of counselors we could motivate 100 more children to join back the clinic

F. The various factors responsible for their inability include: Lockdown and various Government restrictions, Migration of families, lack of resources, Covid affected parents and children etc.

G. The success rate of our study was 66.67%.

VII. CONCLUSION

Our study was a short term prospective analytical study. We recommend a long term follow up with a larger number of children in order to have more conclusive results.

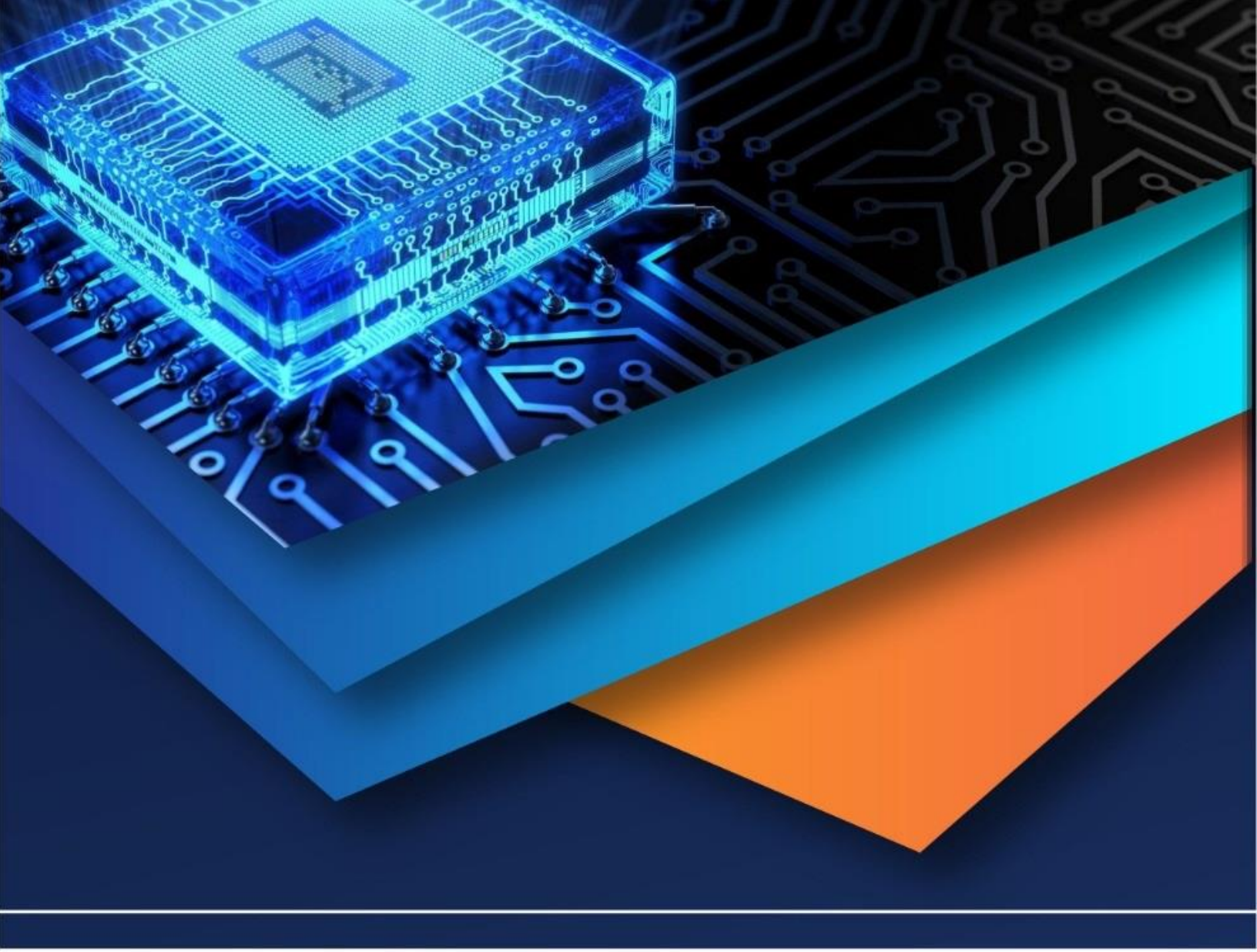
VIII. ACKNOWLEDGEMENT

We are thankful to Cure International India whose team has helped us in contacting patients and conducting this study in their CTEV clinic. We would like to express our sincere gratitude to them.

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