

Perceptions Regarding Medical Management of Clubfoot in Kenya

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Abstract

Clubfoot is one of the congenital and structural conditions that leads to physical impairment in children globally. Service providers have different perceptions on the various methods of management of clubfoot. Therefore, the aim of this paper is to explore the perceptions regarding the medical management of clubfoot in Kenya.

Methods: structured interviews were conducted with 20 participant; ten parents/caregivers of children with clubfoot undergoing different management and 10 service providers. The interviews were analyzed by thematic content technique

Result: The results indicated that Ponseti method is the most effective method of clubfoot management, however surgery is considered for complex, neglected and inadequately management clubfoot. Like wise surgery is observed as convenient for patient that cannot access Ponseti management. French and Kite approach are apparent inadequate in clubfoot management

Conclusion: The finding shows that Ponseti is the most effective interventions in clubfoot management. However, the effectiveness is mired by various challenges. Therefore, structures should be put in place to cub the challenges

Keywords Barriers; Clubfoot; Compliance; Conservative; Disability; Treatment; Method; Perceptions; Rehabilitation; Congenital

Background

Disability in infancy remains a challenge in developed and developing countries [1]. Linked to this disability is increase in the prevalence of infants born with congenital clubfoot [2]. The prevalence of clubfoot in the United State varies between 0.64 and 6.8 per 1000 live births [3] while in East Africa, Central Africa and Polynesia the prevalence is at 8 per 1000 live births [4].

Congenital clubfoot can be treated, however, if untreated, causes physical impairment and defect which affects the individual's gait and results in disability [2,5]. This disability negatively affects productivity [1], and leads to reliance on other persons within the family, which has immense impact on financial, social economic status and reduces the standard of living for the family and the community at large [5]. Similarly, the physical deformity caused by clubfoot is coupled with stigma, which has a detrimental mental effect on the sufferers [6].

Clubfoot can effectively be managed by the use of conservative and less of surgical methods [1,2]. Effective management should commence at or as near as possible to birth [1]. The aim is to correct the impairment, improve mobility and thus allow totally normal social participation [1,7]. This has become a component of primary health care at the level of secondary prevention [8].

The method of management is crucial in realizing high-quality results. Several countries in African such as Uganda [8], embraced the use of Ponseti method for clubfoot management, which has been of

immense success. However, there are other settings that are still using the other forms of conservative management as well as traditional surgical method. In Kenya, for example some Talipes Clinic, service providers are still using more traditional surgical methods of management of clubfoot. Review of medical records in one of the clinics in 2009 indicated that there was an increase in neglected and complex (inadequately managed) cases. 5/36 patients managed per month had neglected and complex clubfoot. This certainly led to increased rates of related disability. It is therefore imperative to understand the perceptions regarding medical management of clubfoot from the service providers and the parents/caregiver that could be the hindrance to timely and effective management of clubfoot.

Methods

Setting

The research was conducted in three hospitals in Kenya i.e. Kenyatta National Hospital, Mbagathi District and Kijabe Mission Hospitals. Kenyatta National Hospital, has a bed capacity of 2500, and serves as the referral hospital for East and Central Africa and the eight provinces in Kenya. Mbagathi District is the second largest hospital in Nairobi province with a bed capacity of 360 with an interdisciplinary clubfoot clinic; it provides services to eight districts. Kijabe Mission Hospitals is in Central Province and offers specialized services in orthopaedic surgery and paediatrics surgery.

Sample

The study population included parents and caregivers of children with clubfoot (130) and the service providers (37) obtained during an assessment that was done prior to data collection.

The purpose of the sample was to find out the perceptions of the service providers and the parents/caregiver regarding clubfoot management, which could be the reasons for failure of effective management of clubfoot. Purposive sampling was utilized to generate parents/caregiver and service providers from the population. The sample was additionally conveniently sampled based on the availability of parents and caregivers that had children under conservative and surgical management and were present during the time of data collection; in conservative management, the sample incorporated parents/caregivers of children in different stages of management. The sample also included working and non-working parents, parents and caregivers from different backgrounds and from different geographical areas.

The health care givers involved in management of clubfoot at the time of study were eligible for inclusion in the study; these included physical therapist, doctors, nurses, occupational therapist and counsellors. The sample included 10 service providers and 10 caregivers. Two independent interview guides were used for the two groups; Service providers provided information on methods of management, rationale and challenges. Parents/caregivers were interviewed on their perceptions regarding the various methods used in clubfoot and challenged during management. The researcher did interviews. Interviews for service providers were conducted in English while for parents and caregivers were carried out in English and Swahili. Interview guide for parents/caregivers was translated in Swahili and three interviews done in Swahili, later translated to English by a specialist in linguistic services, and transcribed verbatim by professional transcribers. Only two parents/caregivers were involved in surgical care at the time of study. This was due to early intervention hence conservative management.

Each interview lasted between forty-five minutes and one hour, were audio-recorded. Saturation (point in data collection when no new or relevant information emerges) was reached with tenth service provider and eighth parent/caregiver. However, the ninth and the tenth parents/caregivers were interviewed since a prior appointment had been made and the interviews were included in the study.

Data Analysis

Data was analysed by thematic content approach, which involved identifying codes and categorising patterns [9,10]. Following transcription, each interview was initially read for accuracy and then reviewed to identify the emergent themes and potential contradictions [11]. On completion of all the interviews, the entire set of transcripts was read to obtain a sense of the whole and to generate a coding system based on issues identified from the data. The codes were then applied to the data to refine the coding development and to establish potential categories [11]. Thereafter, categories were developed and they served to organise codes into meaningful clusters. Codes and categories were collapsed to evaluate emerging patterns and themes until the point was reached where no new information pertaining to the study question was generated [12]. Participants' transcripts were then reviewed to determine the proportion of participants whose answers corresponded to the major codes. The credibility and rigour of the analysis was aided by co-analysis of the transcript by the

researcher's supervisors and continued re-examination of the emergent data throughout the process. Arbitrary initials were used to distinguish the participants whilst ensuring confidentiality. These initials are used in the paper

Results

Social demographic characteristics of participants in the current study are presented in Tables 1 and 2 for the service providers and parents and caregivers of children with clubfoot respectively.

Socio-demographic profile of the healthcare providers.

Participants code	Gender	Age in years	Occupation
SP1	Male	47	Orthopaedic Surgeon
SP2	Male	26	Orthopaedic technologist
SP3	Male	42	Occupational therapist
SP 4	Female	36	Counsellor
SP 5	Female	30	Counsellor
SP 6	Female	29	Physiotherapist
SP 7	Male	32	Occupational therapist
SP 8	Female	48	Physiotherapist
SP 9	Male	50	Orthopaedic technologist
SP 10	Male	44	Orthopaedic surgeon

Table 1: Service providers.

Participants code	Age	Occupation	Relation to the child with clubfoot	Type of Management
CG1	24	Student	Parent	Ponseti
CG 2	32	House wife	Parent	Ponseti
CG 3	26	House wife	Parent	Ponseti
CG 4	35	House wife	Parent	Ponseti
CG 5	31	House wife	Caregiver	Ponseti
CG 6	25	Physiotherapist	Parent	Ponseti
CG 7	30	House wife	Parent	Surgical
CG 8	32	House wife	Parent	Ponseti
CG 9	25	Secretary	Parent	Surgical
CG 10	34	House wife	Caregiver	Ponseti

Table 2: parents/caregivers.

Conservative

Conservative management of clubfoot entails three methods, these includes; Ponseti, Kite/Traditional, and French Method

Ponseti method

Ponseti is a method of clubfoot management by manipulation and serial casting. Most participants (n=8) reported on its ease and the effectiveness. Additionally, the method was reported to be associated with good results and low recurrence.

"The Ponseti method is easy to do and very effective, we have done it for six years and we have no regrets"(SP2).

Ponseti management was reported to be cheap and cost effective, (n=13) the method made use of the locally available material.

"The second thing is, using things that are cheaper such as plaster of Paris and soft burn"(SP1).

Most of the participants (n=15) felt that this method yielded good results with early intervention. However, a minority of the service providers (n=2) and parents/caregivers (n=2) felt that early treatment was mired by missed diagnosis and poor referral system.

"So the results are positive with early intervention and good compliance"(SP6).

"But the main problem is late referral"(SP8)

All the service providers (n=10) felt that Ponseti method was easy to learn and could be made available to many people since it can be offered by various disciplines in the health profession. These disciplines include the rehabilitations officers such as the physiotherapists, occupational therapists, orthopaedic technologists and plaster technicians.

"Rehabilitation officers are available everywhere and they can do a good job because the Ponseti method is easy to learn"(SP3.)

While parent/caregiver suggested that:

"With this kind of treatment, it make our work easy, we do not have to go all they way to Kijabe for the operation"(CG5).

Ponseti management was however faced by various challenges. Missed diagnosis and lack of knowledge on clubfoot management were among the challenges experienced by health providers. Participants highlighted that the diagnosis was frequently missed at birth or not recognized and therefore not referred on time.

"Most of the neglected clubfoot are missed at birth. If you see any clubfoot which comes late, it was missed at birth."(SP 4)

"I gave birth at the hospital, I later realized that my child had a problem with the feet but I was told to go home and it will correct with time."(CG 5)

The participants similarly reported instances where service providers managed clubfoot inadequately even after timely and accurate diagnosis; as a result, the children were left with permanent deformity. Furthermore, a few health caregivers were also said to have no idea that clubfoot needed to be actively managed.

"I was told that it will correct on it's own with time."(CG 4)

Likewise, health providers reported that few staff were trained on the Ponseti method. The consequence of this was paucity of Talipes clinics in Kenya. Insufficient training was attributed to lack of finances and the fact Ponseti management was not owned by government entirely.

"Not all health providers are trained on Ponseti management."(SP 3)

"We have 37 CCK clinic in the country which are not enough to manage clubfoot exhaustively."(SP 10)

Perceptions of training were inconsistent in relation to number, with many participants feeling that the challenge was not in training, but in lack of resources. They maintained that there are many service providers who had been trained on Ponseti method but who were unable to practice due to lack of resources.

"The people who are trained are not really few, they are many but very few are practicing, there are people who were trained but cannot offer services due to lack of materials."(SP 3)

Travelling distance to and from a service facility posed a challenge to the parents/caregivers due to lack of transport and bad roads. This negatively affected compliance to treatment regime

"...we have to travel for more than 5 hours to get to hospital."(CG 9)

Likewise, participants explained that Clubfoot Care Kenya (CCK), a non-governmental organization (NGO), did not support some of the Talipes Clinics. In these clinics, a fee of US\$12 for casting and US\$18 for abduction braces is charged. This, they felt, was not affordable and thus definitely negatively affected compliance.

"...The major one is the financial problems. It is not easy to raise Ksh1000 per week for treatment."(CG 3)

Additionally, most parents and caregivers are unemployed and depend on their spouses or relatives for financial support. They revealed that they had no direct control over the finances that were essential for meeting the expenses. As a result, they dropped out when no funds were available and only returned for treatment when money was forthcoming.

"Most of these women are housewives and they depend on their husband for support."(SP 7)

Traditional/kite method

Health providers (n=5) reported that traditional/kite method referred to any conservative method that was used before the inception of the Ponseti management. Health providers that had not acquired knowledge on Ponseti management used this method.

"It's used by rehabilitation officers that have not been trained on Ponseti"(SP6)

Moreover, health providers expressed difficulties with the traditional/kite method.

"...they end up having prolonged casting"(SP1).

"But you have to put a lot of cast to get good correction"(SP2).

This method was reported to have greater likelihood of relapses and poor result after a long period of treatment.

The French method

Very few service providers (n=3) appeared to know about the French method of management of clubfoot. It involves manipulation and restraining of the foot. There were no children managed by French method. It was perceived as expensive, time consuming and non-effective

"It is quite intensive because the people have to go to the hospital every day to have the cast done, the cast requires money which many

parents my not afford, and subsequently the end up poor adherence to the protocol” (SP5).

Surgical method

This method was reported to be the second most utilized in clubfoot management in Kenya. Most of the participants (n=13) reported that surgical intervention was utilized with the neglected, complex as well as for patients that could not access Ponseti method. One parent/caregiver said:

“... Until four years when we came to the hospital and the doctor operated on him” (CG8).

One orthopedic surgeon expressed

“But then, there are those who come with neglected clubfoot or those that live so far away that they do not have access to the Ponseti method of management of clubfoot, so we offer surgery for those cases” (SP1).

Surgical method was reported to be associated with a lot of challenges. Most of the parents/caregivers could not afford surgery, it was costly for the facility and the country has few surgeons. Likewise, surgery was reported to have many post operative complications, this included pain, stiffness, scars, muscle wasting and anatomical changes. Two participants responded as follows:

“It requires a lot of facilities, and then there is the admission part and then the follow up part. So this is very expensive both for the patient and for the country” (SP6).

“...you see, after the operation, this child has always complained of pain around the ankle joint” (CG9)

Discussion

Ponseti is a method practiced in most of the clubfoot clinics in Kenya. However, some of the facilities still use the traditional methods of clubfoot management. This study demonstrates perceptions of the health providers, parents and caregivers on medical management of clubfoot such as the ease, cost effectiveness, convenience, and low recurrence rate of Ponseti management, consistent with findings of Pirani and Konde-Lule [1,13]. Additionally, the study found that Ponseti management was viewed to have better outcome, and has reduced risks of disability, reduced psychological and emotional trauma and improved quality of life. This is also commented in findings of Pirani [1], Harold [14], and Lehman [15].

Ponseti management used locally available material (Plaster of Paris and leather) for casting and abduction braces, hence sustainability and reduce cost. This is contrary to Halanski [16] who asserts that the cost effectiveness of the Ponseti method had not been effectively demonstrated.

The study found that, Ponseti method was easy to learn by allied health workers and is well located. This leads to early intervention in areas that lacked specialised health care, particularly in developing countries as suggested by Lehman, Harold, Pirani [1,14,15]. In Kenya, Ponseti services are made available by allied health workers and are currently available in most district hospitals that collaborate with Clubfoot care Kenya (CCK) (a non-governmental organization). However, the facilities are not enough for effective management of clubfoot in Kenya. At the time of the study, there were only 37 clinics in Kenya sponsored by CCK, which were providing Ponseti

management. For that reason, the study found an apparent lack of Ponseti service delivery at the local level.

Additionally, the study found that the parents/caregivers of children with clubfoot were faced with various challenges; financial constraints, long distances to health facilities, and lack of family support consistent with the findings of Pirani [1] and Beardsley [17]. Additionally lack of knowledge of proper clubfoot management caused avoidable delays and thus substantial complications. This is also mentioned on by Ponseti's study in Uganda [2].

The study found that few health providers utilized Kite and French methods. Kite method had greater likelihood of relapses and poor result which links with a study by Sud [18]. The method has a preponderance of varus of the heel, which result from incomplete deformity correction. French approach requires lengthy treatment, which needs cooperation from the parents/caregivers. Additionally, the study found French method not adequate to manage older babies consistent with Richards [19]. Faulks [20], affirm that elongating, passive exercises and immobilization of the foot require time and commitment from parents/caregivers to bring the child for daily treatment sessions. In spite of its limitations, the French method has proven to have good outcome in new-borns in Europe [19]. Kite and French methods are not very common in Kenya. However, few health providers that are not knowledgeable on Ponseti method utilize it.

Surgical approach is recommended for neglected and complex clubfoot consistent with the finding of Khan [21], and Sureh [22]. However, the study found that the health providers in Kenya consider surgery for clients who cannot access Ponseti method or may not be able to adhere to Ponseti protocol. At the time of study, Kenya had only thirty-seven Ponseti clinics, which prompted the use of surgical intervention. Surgical method was associated with many challenges [8]. The study found surgical intervention to be costly for the patient and the facility. There were few surgeons in Kenya to offer the service. Similarly, surgery had postoperative complications, (pain, stiffness scars, muscle wasting, anatomical changes). The findings affirm Go'ksan [23]. Also, Dietz [4] and Ippolito [24] do not advocate for surgery as the first line of clubfoot management. Ponseti, 8 in his experience while using the surgical method observed severe scars and stiffness of the ankle joints. The structures that were elongated after the first surgery were later matted and immobilized in a bulk of scar tissue. After many years experience, he was discovered that surgery was not the right approach clubfoot management.

Currently, Kenya is minimally utilizing surgery in clubfoot management, which has reduced the complication that comes with surgery. Despite paucity of proper records, it is envisaged that in ten years to come less than 3% clubfoot patients will be managed through surgery.

Limitation

Data were collected from service providers most of whom were using the Ponseti method and very few were using the older methods; a range of perception of others using older methods could therefore not be evaluated. The findings of the current study are based on a purposive and convenience sampling, and thus the study results may not be generalised except to similar settings.

Conclusion

This study highlights the considerable perceptions, which still exist to approaches of management of clubfoot. Ponseti is the most cost-effective interventions in clubfoot management. However, the effectiveness is mired by various challenges. Interventions that are disability preventing should be considered as part of public health policy and structures should be put in place to curb the challenges

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