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Barriers to Accessing Clubfoot Treatment in South Africa

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ABSTRACT

This journal review critically examines the barriers to accessing clubfoot treatment within the context of South Africa. Through a comprehensive search on PubMed, four pertinent studies were identified and thoroughly analyzed based on predefined inclusion and exclusion criteria. The findings highlight significant impediments hindering access to clubfoot treatment, with prominent factors including geographical distance to treatment facilities, limited awareness regarding the severity of the condition, and logistical challenges in accessing specialized care. While these identified barriers shed light on the current challenges faced by clubfoot patients in South Africa, the review underscores the necessity for further research to comprehensively explore additional barriers and their underlying causes across diverse regions within the country. This extended analysis emphasizes the multifaceted nature of obstacles to accessing clubfoot treatment and underscores the imperative for targeted interventions to enhance accessibility and mitigate disparities in care delivery.

Introduction

Congenital talipes equinovarus (CTEV), more commonly known as clubfoot, is the most prevalent congenital musculoskeletal deformity, affecting roughly one in 1,000 newborns (Malagelada et al., 2016). In most cases, the condition presents as either one or both feet turned inward, forcing the child to walk on the upper part of the foot rather than the sole. Around 80% of clubfoot patients are born in low- and middle-income countries, often leaving them without the necessary resources to gain access to treatment (Smythe et al., 2023).

The Ponseti Method, developed and coined by Igancio Ponseti, is widely regarded as the most efficient and effective form of clubfoot treatment. In places where treatment is easily accessible, patients find themselves undergoing just one operation and having to wear braces on their feet at night after surgery for up to 5 years (Agarwal et al., 2021). In countries that largely lack the resources to implement this treatment on a national level, such as South Africa, medical care can be difficult to access, in some cases leaving clubfoot patients untreated well past infancy (*Treating Older Children with Clubfoot*, n.d.).

In South Africa specifically, at least 2000 children are born with clubfoot every year, but less than 15% of those children have access to treatment for their clubfoot (*Home - Steps | Clubfoot Support in Southern Africa*, 2023; Owen et al., 2018). Untreated clubfoot can bring about severe economic and social challenges for patients later into adulthood. Often severely limiting one's ability to move on their feet, clubfoot present in adults makes finding long-term work and financial stability extremely difficult. Further, untreated clubfoot poses unprecedented challenges in terms of building relationships–it might be difficult for adults with clubfoot to leave their houses, let alone form profound connections with those around them (*Low & Middle Income Countries – Global Clubfoot Initiative*, n.d.).

Barriers to accessing successful clubfoot treatment in South Africa are not only the result of underfunded medical programs–many more foundational issues all contribute to clubfoot patients finding themselves in positions in which a remedy for their condition is simply not an option. Various studies examining the barriers

to clubfoot treatment in South Africa have been conducted since the discovery of treatment for clubfoot. Each study has come to distinct conclusions, leaving uncertainty over the consensus of the specific barriers to receiving clubfoot treatment in South Africa and the mechanisms by which these barriers prevent patients from accessing clubfoot treatment. This literature review will synthesize the existing studies, drawing on common themes and describing the nature of findings on the barriers to clubfoot treatment in South Africa.

Methods

A search on PubMed was performed to find English articles published from the database's inception to January 2024 to find relevant studies relating to barriers to accessing clubfoot treatment in South Africa. The search terms “Ponseti Method,” “clubfoot treatment”, “barriers”, “access”, “children”, and “South Africa” were used to conduct the search.

There were 4 main inclusion criteria for the studies. The first criteria for inclusion was that studies included discussion about the Ponseti method or other forms of clubfoot treatment, given that the topic of interest focuses on the actual treatment of clubfoot and not other aspects of the condition. The second criteria for inclusion was that studies discussed what made it difficult for people to find access to treatment. The third criteria was that the studies were conducted specifically on barriers in South Africa. If studies were not conducted in South Africa, they were not included. Lastly, due to the critical period of clubfoot treatment being in childhood, studies had to have a primary population under the age of 18.

Data was abstracted by one independent reviewer, who reviewed the 40 studies regarding barriers to clubfoot treatment. A manual search was also conducted of the bibliographies of studies and relevant systematic reviews. At the end of data abstraction, 4 of those studies met the inclusion criteria.

Due to the varying methodologies used in the included studies, a narrative analysis was used to synthesize the data from included studies. Narrative analysis allows for a lens that looks past raw data and gives specific evidence of how individuals navigate the complexities of accessing clubfoot treatment in South Africa. By delving into the qualitative nuances of these studies, a narrative analysis uncovers the lived experiences, challenges, and coping strategies of patients, caregivers, and healthcare providers.

Results

The initial literature search of the databases identified in the methods yielded 40 records. From these, 18 were screened for full text eligibility. Twelve of the 18 studies were excluded due to not meeting one of the four inclusion criteria. Finally, 4 studies were included in this review for narrative analysis (Figure 1).

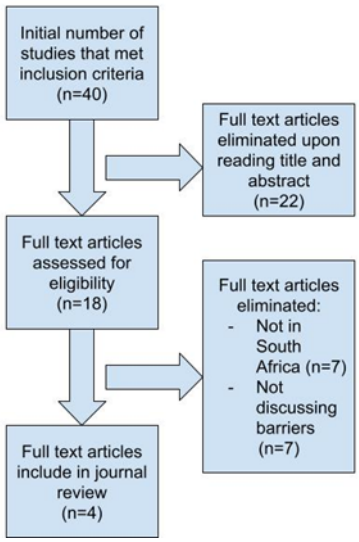

Figure 1. Flow chart of search strategy

Malagelada et al. (2016) used a cross-sectional survey design to investigate the barriers to accessing clubfoot treatment in South Africa, focusing on how these barriers impact the administering of the Ponseti method. One barrier identified in this study is the logistical difficulties associated with the Ponseti method. Specifically, the study noted that regular clinic visits, which are vital to a successful application of the treatment, are particularly challenging. For families from lower socioeconomic backgrounds or those that reside in rural areas, traveling miles to nearby clinics is often infeasible—they often do not have the time to take off from work, or the financial capacity for travel costs. With regards to the emotional and psychological impacts that are associated with a clubfoot diagnosis as a barrier to accessing treatment, families who in many cases have not heard of clubfoot before can face extreme stress and anxiety regarding potential outcomes of receiving treatment. These factors are in many cases compounded with concerns among parents surrounding their child's future mobility and quality of life. This sense of uncertainty and anxiety can lead families to decreased motivation and engagement with the treatment process (Malagelada et al., 2016).

Van Wijck, Oomen, and van der Heide's (2015) used qualitative semi-structured interviews with a mixed-methods design to explore the accessibility and implementation of the Ponseti method for clubfoot treatment, focusing on various countries around the world, one being South Africa. This study suggests that costs of transportation and wages lost from time off from work are the most significant barriers to accessing the Ponseti method of treatment. While in many places, the costs of administering the Ponseti method itself are covered by government, insurance, or non-governmental organizations, ancillary costs, such as actually getting to a clinic that can provide treatment, severely impact accessibility. These barriers are particularly heightened in less affluent communities or rural areas. Further, the study highlighted the influence of cultural beliefs and social stigma associated with clubfoot as a critical barrier to accessing clubfoot treatment. In certain regions, supernatural explanations for the condition can delay or discourage communities from seeking out proper treatment, as they may first consult spiritual or religious remedies. This delay can exacerbate the difficulty of treating clubfoot, as the Ponseti method is most effective when applied shortly after birth. Additionally, the study noted a lack of awareness and understanding of clubfoot and its treatment. This gap in knowledge contributes to a delayed initiation of treatment. In many cases, however, when families do seek out treatment, there are simply not enough trained medical practitioners equipped with the skills to administer clubfoot treatment, especially in the rural or underserved regions of South Africa (van Wijck et al., 2015).

Nadia Marais' dissertation, titled "Early Detection and Treatment of Clubfoot in a Rural Setting in South Africa," submitted for the Master of Public Health degree at the University of South Africa, used qualitative semi-structured interviews to explore the barriers to accessing clubfoot treatment in rural South Africa. A fundamental barrier that the study found is the widespread lack of awareness and understanding of clubfoot among rural communities. This knowledge gap can often lead to delayed recognition of the condition and hesitancy to seek early treatment. Marais also found that this issue is compounded by mothers' lack of knowledge regarding what to do once their child with clubfoot is born—she found that this comes as a result of inadequate information provision during antenatal care visits, where mothers are not properly educated by medical professionals. Furthermore, Marais notes that even when clubfoot is properly identified, finding proper treatment is extremely difficult. Healthcare practitioners in rural and low resourced areas often lack the necessary training and tools to administer adequate treatment. Consequently, there can be significant delays for patients needing immediate treatment. Additionally, there exist significant geographic and economic barriers for parents in rural settings. Often, clinics can be miles away from the homes of those needing treatment, leading to substantial travel costs, and the costs of missing time from work. These factors are further exacerbated by other familial responsibilities, which can make finding treatment a logistical nightmare (Marais, 2022).

Thiart, Fenn, du Toit, and Burger conducted a retrospective cohort study focused on the treatment outcomes of clubfoot treatment at a clinic in South Africa, pointing to barriers to accessing said treatment as potential causes for varying degrees of success of the treatment. Primarily, the study noted that the median age of presentation of clubfoot patients for treatment is 5 weeks, with a range extending up to 12 weeks. This time frame indicates a delay in presenting for treatment, which can be attributed to various factors, including a lack of awareness about clubfoot among parents. Furthemore, the study highlighted the distances traveled for patients receiving treatment as ranging from 2.1 to 325 km, with a median of 20.9 km. This wide range underscores the geographical challenges that those in rural areas can face when seeking out treatment. Moreover, the study revealed compliance issues in the later stages of treatment, reporting that 22.2% of patients had trouble adhering with the maintenance phase. This included difficulties in attending follow-up visits and complying with bracing instructions (Thiart et al., 2022).

Discussion

Themes

Across the four studies included in this review, several clear commonalities emerge. A shared barrier across these studies is the widespread lack of awareness about clubfoot among both the general public and healthcare professionals, which invariably leads to delayed diagnosis and treatment initiation. Another common obstacle is the logistical challenges families face in accessing specialized care for clubfoot treatment, particularly with the Ponseti method. The studies highlight the difficulties related to geographical distance to treatment centers and the financial burden associated with travel and treatment, even in settings where the treatment itself is provided at no cost. These challenges are particularly pronounced in rural or economically disadvantaged areas, pointing to a need for more accessible care options. Differences among the studies emerge in the specifics of healthcare system infrastructure and the extent of socio-economic barriers. For instance, in certain South African contexts, the studies reveal a significant struggle with healthcare system delays and referral practices, which may not be as pronounced in more developed healthcare systems.

Additionally, cultural beliefs and misconceptions about clubfoot's etiology and treatment vary significantly between regions, affecting families' willingness to seek and adhere to medical treatment. The capacity of healthcare systems to train and deploy non-specialist healthcare workers in the Ponseti method also varies, offering a potential solution in some regions but not universally applicable due to differences in healthcare education and infrastructure. In summary, evidence shows that while the barriers to accessing clubfoot treatment

share core similarities, the extent and nature of these barriers can vary greatly depending on regional, economic, and cultural contexts. Addressing these barriers requires tailored strategies that consider the specific challenges of each context to ensure the effective delivery of clubfoot treatment worldwide.

Limitations

This journal review, while comprehensive, had limitations. This review was hindered by the number of studies that exist on barriers to accessing clubfoot treatment in South Africa. With only 4 studies fitting the inclusion and exclusion criteria, there was little room for quantitative synthesis or comparison of methodological quality. Another limitation of this review was the content that appeared in the studies included. These studies came to similar conclusions by conducting similar research. If there was more methodological variety in the way studies analyzed the barriers to accessing clubfoot treatment in South Africa, different barriers may have been identified or different understandings into the existing barriers could have been revealed, giving those administering clubfoot treatment the knowledge to overcome them. Moreover, none of the studies selected in the review included first hand accounts of patients looking to find clubfoot treatment in South Africa. While some did include the contents of interviews with patients, none gave direct experiences, in their own words. In doing this, the authenticity of some of these patients' statements might have been lost, and the studies may have been conveying slightly inaccurate information.

Despite these minor drawbacks, this journal review does an effective job in collecting key similarities and differences from the 4 studies that were reviewed, pointing to notable themes that reappeared multiple times and synthesizing the existing information on barriers to clubfoot treatment in South Africa.

Recommendations for Further Research

Looking forward, research should be directed towards closely examining the barriers presented in this journal review, and working to meticulously mitigate each one to ensure that clubfoot is treatable in rural parts of South Africa. Forms of advocacy could include raising money to help transport patients to the nearest clinics, or using raised money to fund the construction of new ones closer to rural areas. Moreover, further research should be conducted with the aim of fully understanding the non-physical causes preventing access to clubfoot treatment, and implementing education programs to help families affected by clubfoot overcome these causes. For example, one study found that families believed that religion would help remedy their children's clubfoot—educating them on the realities of the condition and the actual forms of treatment would encourage them to seek out professional assistance.

In sum, there do exist significant barriers to accessing clubfoot treatment in parts of South Africa. These barriers include geographical barriers to clinics and hospitals as well as educational and social barriers to interacting with the medical system. However, with more research into these barriers we can learn how to overcome them and ensure clubfoot treatment for all patients.

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