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| RESEARCH ARTICLE

Choosing the Right Pediatric Footwear: A Guide to Healthy Foot Development

Nayan Kumar Kundu
Department of Footwear Engineering, University of Dhaka
Corresponding Author: Nayan Kumar Kundu, **E-mail**: nayankundudu1000@gmail.com

| ABSTRACT

The growth of healthy feet matters a lot for a child's overall health, yet many caregivers are unaware of the part pediatric footwear plays. The study explores the way parents perceive, learn about and use footwear for children and its consequences on their feet, walking and bone and muscle health. When I interviewed parents of children 0–10 years old using a semi-structured interview method, some major themes were limited understanding of biomechanics, depending on ease and cost of shoes, effects of local culture on going barefoot and the issue of consistent fitting and upgrading of shoes. The results are consistent with what other studies have described: the positive effects of flexible, fitted shoes and periodic going barefoot, but these effects are limited by social and informational challenges. Supporting healthy foot development in children is suggested by improving access to education, professional help and creativity in pediatric shoes. Such facts enable healthcare providers, parents and shoe manufacturers to choose shoes that best support good body health over time.

| KEYWORDS

Pediatric footwear, proper foot growth, parental Awareness, biomechanics, bare feet walking, musculoskeletal health.

| ARTICLE INFORMATION

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1. Introduction

Healthy foot development during childhood is a foundational aspect of overall physical well-being. The human foot undergoes significant growth and structural changes from infancy to adolescence, shaping not only walking patterns but also long-term musculoskeletal health (Wearing, 2024). During the early years, children's bones are soft and malleable, and their muscles, tendons, and ligaments are still developing. Therefore, any external influence, especially footwear, can have a profound impact on how their feet grow and function (Tedeschi et al., 2024).

Footwear is more than just protection from injury or environmental hazards. In the pediatric population, it acts as a tool that can either support or hinder normal foot development. Research shows that the right type of footwear promotes natural motion, strengthens foot muscles, and maintains proper alignment (Alfageme-García et al., 2024). Conversely, ill-fitting, rigid, or inappropriate shoes can lead to a range of foot-related problems such as flat feet, hallux valgus, in-toeing, out-toeing, and even poor posture, which may persist into adulthood. Despite this, many parents remain unaware of what constitutes appropriate footwear for children and often prioritise aesthetics, brand, or price over functionality and fit (Kadınkız et al., 2025).

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The commercial footwear market frequently lacks pediatric-specific guidance, and shoes marketed for children often prioritise style over structure. In many developing countries, where public awareness is limited and access to pediatric orthopaedic care is scarce, the risks associated with improper footwear are even greater (Bodziak, 2017).

The importance of this study lies in its potential to bridge the gap between medical knowledge, parental awareness, and commercial footwear design. By understanding the anatomical, physiological, and biomechanical needs of growing feet, stakeholders, parents, paediatricians, educators, and manufacturers can make better decisions that ensure children walk a healthy path, literally from the ground up.

1.1 Objectives of the Study

The main objectives of this research are:

1. To examine the role of pediatric footwear in children's foot development.
2. To identify common mistakes parents, make when selecting shoes for their children.
3. To judge the most important traits of proper paediatric footwear using the advice and noticing of experts and caregivers.
4. To analyse the way wearing footwear influences walking style, body positioning and muscle strength in children.
5. To recommend how parents, healthcare workers and shoe makers can make choices that favour children's foot health.

2. Literature Review

Since paediatric feet go through many changes and footwear is a part of this, this topic should be approached with experts from paediatric medicine, biomechanics, physiotherapy and footwear design (Wang et al., 2023). It looks at the current research on footsteps in growing children, the reasons for specific designs in shoes, the effects of using certain kinds of footwear and what affects parental decisions about footwear.

2.1 Pediatric Foot Development

The process of the human foot developing takes the first two decades of life. Newborns have mostly cartilage and fat where their foot structure will develop. In early childhood, an important process named ossification starts, which converts cartilage to bone and continues into adolescence (Morgan et al., 2024). The foot is being shaped, straightened and learning how to walk at this stage (Price et al., 2021).

Wang et al., 2022; Uden et al., 2017 say that the early years, especially ages 1 to 5, play a crucial role in shaping the feet and supporting good balance. Wrong or overly restrictive shoes can block healthy foot development, which might cause problems down the road.

2.2 The Biomechanical Role of Footwear in Children

Footwear somehow affects the way you walk, the movement of joints and the use of foot muscles inside one's feet. Wang et al. (2023) explain that inflexible footwear can make the feet move in ways they do not naturally which results in weaker muscles and abnormal walking patterns. According to Herbaut et al.'s study (2017), when children wear flexible, comfortable shoes, their plantar pressure and balance improve.

The article by Hodgson et al. (2020) underlines that improperly built shoes might increase a person's risk of pes planus (flat feet), overpronation and misalignment in their knees. More experts now say that shoes should support the foot's function, instead of restricting it.

2.3 Ideal Features of Pediatric Footwear

Experts think that the following things are important in children's shoes:

- Toe room: There is enough space for toes to move as they should while wearing the shoe.

- Flexibility: Especially in the forefoot to allow proper push-off during walking.
- Heel support: A firm heel counter to stabilise the rearfoot.
- Lightweight materials: To reduce muscular fatigue and encourage active play.
- Secure closures, such as laces or Velcro, to prevent slipping or imbalance.

An important finding from Kadınkız et al. (2025), supported by more recent studies, Hill et al. (2019), is that excessively supportive shoes in early childhood may do more harm than good. Instead, minimal or barefoot-style shoes promote stronger foot muscles and arch development (Cranage, 2021).

2.4 Parental Behaviour and Purchasing Trends

Despite the availability of evidence-based guidelines, studies indicate a significant gap in parental awareness. A UK-based survey found that over 70% of parents bought shoes without professional fitting advice. Factors influencing their decisions included brand popularity, appearance, price, and ease of wear, rather than orthopaedic appropriateness (Wiese & Kruger, 2016).

Moreover, in lower- and middle-income countries, economic limitations often drive families to choose cheaper, hand-me-down, or ill-fitting footwear. In many cases, children wear the same size for extended periods, despite rapid foot growth, increasing the risk of deformity and discomfort (Ali & Kerpčarová, 2019).

2.5 Cultural and Environmental Considerations

Shoe habits change a lot according to cultural customs and the climate of a place. Children in many regions of Africa and Asia tend to walk shoeless indoors and outdoors, and this practice often leads to better foot muscle strength and fewer misalignments (Seim et al., 2017; Leslie et al., 2018). For this reason, early childhood is now a time when many argue for more barefoot activities and minimalist footwear.

3. Methodology

3.1 Research Design

The research used qualitative methods to find out about parent and caregiver views, knowledge and actions related to paediatric footwear and the effect it has on child foot care. The use of qualitative research was preferred, as it is able to gather insight, feelings and true ways people think and make decisions in their daily lives which cannot always be measured with numbers.

The design looked at real life, personal views and personal observations, not at statistics, in order to meet the study's goal of discovering what guides parents' footwear decisions and their awareness (Evans, 2022).

3.2 Methods

The main way of collecting data was a semi-structured questionnaire written about the key issues found in the literature. Because the questionnaire was detailed, it collected rich data about parents' behaviours, viewpoints and decision-making.

Participants were purposively selected to ensure relevance to the topic, specifically parents or guardians of children aged 0–10 years. The questionnaire was distributed both digitally (via online forms and email) and in print format in selected community centres and pediatric clinics (Richter & Naicker, 2021).

3.3 Data Collection Procedure

Data was collected over a span of four weeks. A total of 30 respondents participated in the study, representing a diverse demographic profile in terms of socio-economic status, education level, and geographic location (urban and semi-urban areas).

Participants were informed about the purpose of the study and gave consent before participating. They were encouraged to answer openly and were assured of confidentiality. The average completion time for the questionnaire ranged from 15–30 minutes, depending on the length and depth of responses.

3.4 Data Analysis

Upon collection, responses were transcribed, categorized, and thematically analyzed using qualitative content analysis techniques. Thematic coding was used to identify common patterns, differences, and insights across participants' answers. This method allowed the researcher to extract themes such as:

- Lack of awareness regarding developmental footwear needs
- Financial limitations influencing purchasing decisions
- Reliance on informal advice over professional guidance
- Attitudes toward barefoot activity and foot observation

These themes were further supported by direct quotes from participants to maintain authenticity and contextual depth.

No software was used for analysis; instead, manual coding and thematic clustering were conducted to preserve close engagement with the data and ensure validity through reflective interpretation.

4. Findings and Discussion

4.1 Parents Lack Information about the Importance of Pediatric Footwear

It was found that many parents do not know how footwear affects their children's growing feet and bones, similarly to Williams et al. (2022), who noted over 70% of parents did not get professional advice.

> *"I knew shoes protect my foot from harm, but I did not know they could influence the growth and development of my foot."*

> *"It never crossed my mind that shoes might play a part in posture or how we walk."*

This lack of information mirrors what the literature observes, which is that parents often go for looks or ease first instead of finding what is best for their kids.

4.2 Guidelines based on various small changes rather than from a medical point of view

Many parents chose products that were comfortable, cost less, had a familiar brand and looked stylish, rather than considering the biomechanical aspects advised by Williams et al. (2022) and Applequist et al. (2017). Seeking guidance from friends and family instead of experts happened a lot throughout the study.

> *"I choose pieces that are both comfortable for my child and simple for them to put on and are nice to look at."*
> *"Since we cannot get expert advice, I decide either by what the shopkeeper says or what my friends suggest."*

This is in line with what the literature says: People tend to make less-than-optimal choices because of their socio-economic situation and lack of awareness.

4.3 Issues with Choosing Sneakers and Knowing When to Get New Ones

Measuring children's feet and noticing if the shoes are a right fit took time for parents, according to Martin-Casado et al. (2021) and González-Elena et al. (2021).

> *"My son's feet go up a size quickly; it often happens that I notice the shoes are too small once I see him limping or trying to make his feet smaller."*
> *"Every few months, needing new shoes becomes expensive."*

This shows that the literature believes proper finger room and checking the fit regularly are crucial for healthy growth.

4.4 Variety of Perspectives on Walking Barefoot

There were mixed views about barefoot time, like those of Davis & Hollander (2020), pointing out that some cultures see increased muscle strength and fewer misalignment issues when people have barefoot time.

> *"I allow my child to walk barefoot inside and outside, since I came across research saying it can strengthen the feet."*
> *"Kids in my culture rarely go barefoot, so parents usually have them wear shoes."*

It points out the effect that cultural rules and the environment have on footwear.

4.5 Mixed Perceptions on Minimalist and Flexible Shoes

It was found that not many knew much about minimalist shoes and remained suspicious, based on expert evidence that high-support shoes reduce natural foot movement, while minimalist shoes can increase muscle endurance but may not be very safe (Esculier et al., 2015).

> *"There are barefoot shoes available but I didn't know if they are right for my child's feet as they grow."*
> *"If the soles are really soft, I am afraid my child could trip and danger could be involved."*

It reflects the warning writers have given about keeping the right balance between benefits and drawbacks (Aboutorabi et al., 2014).

4.6 Wanting Reliable Advice and Well-Spelt Out Details

Parents reported a desire for convenient educational resources and the ability to get professional input, fulfilling the request in the literature to minimise the gap between experts and caregivers (Hodgson et al., 2020).

> *"Guidelines or checklists for when you go shoe shopping could be very useful."*
> *"I wish educational workshops or talks in the community would help parents with foot health issues."*

This fits with the study's goal to help people be more aware and make better decisions by sharing information better.

4.7 Discussion

In this study, parents shared their opinions, knowledge and routines relating to pediatric footwear and how this affects the normal development of children's feet. Relying on qualitative findings, this section summarises the major points in relation to the previous body of work and points out the implications for parents, healthcare providers and shoe companies.

4.6.1 Awareness Issues within Parents

Similar to earlier studies (Price et al., 2021), the data indicate that parents recognise that footwear is important, but there is still a gap in realising how specific shoe choices might affect their children's health. Various respondents were unaware of how shoes can influence foot shape, muscle growth, the way people walk and their posture, which agrees with past studies showing that shoe choices are usually based on comfort, appearance or price instead of correct medical fit (Williams et al., 2022; McRitchie et al., 2018).

It makes it clear that we have to strengthen educational interventions. It's important for pediatricians and allied healthcare staff to teach foot health to parents and children at routine health visits, using information that helps

them in everyday living (Evans, 2022). Training materials for parents, along with easy online tools for checking shoes, might be useful additions.

4.6.2 Parental Awareness and Knowledge Gaps

Based on the study, making footwear decisions largely depends on how much they cost and how easy it is to get them. Many parents noted challenges in checking their child's shoe size and replacing their child's shoes often because of rapid foot development and the cost involved. As seen in the literature for low- and middle-income areas, when children wear ill-fitting shoes because the family cannot access better ones, it makes the children more likely to suffer discomfort or negative foot changes (Reddie, 2023).

Industry experts and public health organisations should help parents provide effective, affordable and appropriate footwear for children. Support from programs subsidised by the government or partners that are community organisations might address the financial difficulties in getting good shoes (Morgan et al., 2024). Also, building shoes that allow for growth without affecting the fit may provide a scalable approach to this problem.

4.6.2 Cultural and Behavioural Influences on Footwear Practices

The differences in views on barefoot walking picked up in the literature seem to relate to cultural and environmental influences (Schlewing et al., 2025). The way parents valued walking barefoot was not the same, since some saw it as good for feet and development, whereas other parents preferred to protect their feet from harm and germs.

Because of this, advice about shoes should match the culture and situation. Promoting health for kids should keep in mind local customs and highlight the medical evidence that minimises or eliminates shoes for small children, although safety is important too. Facilitating safe walking without shoes or suggesting flexible minimalist shoes when it isn't safe to be barefoot addresses both needs (Morgan et al., 2024).

4.6.2 Biomechanical Considerations and Footwear Design

Parents do not appear to be very familiar with minimalist or flexible footwear. The research strongly confirms that flexible shoes support toe spread, natural joint use and improved muscle strength, yet parents still worry about how stable and safe they are (Leslie et al., 2018; Willwacher & Weir, 2023).

It points to manufacturers being able to research and develop innovations that mix biomechanical improvements with additional safety (Kadınkız et al., 2025). Lightweight footwear with a firm heel counter and securely closing parts is great for both safety and natural foot function. Otherwise, looking into 3D foot scanning or insoles that can detect pressure could let us design shoes that address each person's specific foot problems and development (Tedeschi et al., 2024).

5. Conclusion and Recommendations

The study concludes that appropriate pediatric footwear is a vital component of healthy foot development in children, yet it remains underemphasized among parents, caregivers, and even healthcare systems. Despite a general awareness of comfort, there is a noticeable lack of understanding regarding the anatomical, developmental, and biomechanical requirements that children's shoes must fulfil during early growth stages.

Data gathered from the open-ended questionnaire reveal that many parents prioritise affordability, aesthetics, and convenience over orthopaedic function. The frequent use of hand-me-down shoes and the delayed replacement of ill-fitting footwear further contributes to potential developmental concerns. Experts in psychology are not normally consulted or consulted themselves until the problem is obvious.

It points out cultural mistakes people make, mostly related to walking barefoot and suggests encouraging educators to use evidence to help correct these views. In their rush to satisfy the market, manufacturers of footwear tend to forget about children's growth needs and that hinders economically weaker people from providing well-suited shoes for their children.

So, proper care for children's feet can be achieved if parents, healthcare pros, manufacturers and public policy are involved in the process. If these gaps are dealt with, stakeholders have a better chance to support the physical health of children.

Recommendations

Using the research, specific steps are provided to improve each group's work and continue moving toward achievements.

For Parents and Guardians

- Educate yourself on key footwear features: flexible soles, roomy toe boxes, breathable materials, and proper heel support.
- Check children's shoe fit every 2–3 months, especially during rapid growth phases.
- Limit the use of second-hand shoes, particularly if visibly worn or deformed.
- Encourage safe barefoot activity, especially indoors or on grass, to develop balance and foot strength.

For Paediatricians and Health Educators

- Incorporate footwear education into well-child visits and health outreach programs.
- Develop guides, posters, or videos to be displayed in clinics and schools, promoting pediatric foot health.
- Screen for posture or gait issues during early years, and provide timely referrals when abnormalities are observed.

For Footwear Manufacturers and Retailers

- Design shoes tailored to children's developing feet not mini versions of adult models.
- Offer educational material with each product, guiding parents on how to assess fit and when to replace shoes.
- Consider affordable, health-conscious footwear lines for low-income families, possibly in partnership with NGOs or health programs.

For Schools and Community Health Programs

- Conduct awareness workshops for parents on foot development and shoe selection.
- Encourage school-based screening for foot problems and improper footwear.
- Partner with local healthcare providers or NGOs to distribute suitable shoes in underserved area

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