

**KNOWLEDGE, ATTITUDE AND PRACTICE OF FOOT HEALTH AND
CARE AMONG APPARENTLY HEALTHY ADULTS IN BENIN CITY, EDO
STATE**

BY

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CERTIFICATION

This dissertation by OGBEIDE-IHAMA MARY is accepted in its present form as satisfying the dissertation requirement of the degree of Bachelor of Physiotherapy of the School of Basic Medical Sciences, College of Medical Sciences of the University of Benin.

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DEDICATION

I dedicate this work to my loving family for their unwavering support and patience throughout the course of this study. A special dedication goes to my dear mother, Mrs. Clementina Ikhuoria, for her endless love, prayers, and sacrifices, and to my wonderful grandparents, Sir and Lady Isaac Ikhuoria, whose guidance and encouragement have always inspired me to strive for excellence.

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ABSTRACT

Background: Foot health is an important but often neglected component of overall well-being. Despite the high prevalence of foot ailments globally, there is a paucity of research on the knowledge, attitudes, and practices related to foot health among the general adult population in Nigeria.

Aim: This study aimed to determine the knowledge, attitudes, and practices of foot health and care among apparently healthy adults in Benin City, Nigeria.

Methods: This cross-sectional study involved 1000 apparently healthy adults (598 males, 402 females) residing in Benin City. Data were collected using a structured questionnaire developed by the American Podiatric Medical Association (APMA). It assessed sociodemographic characteristics, knowledge of foot health, attitudes towards foot care, self-reported foot health, and foot care practices. Data collected was summarized using descriptive statistics and Chi-square test was used to determine associations between variables. Alpha level was set at $p < 0.05$.

Results: 41.7% of respondents rated foot care as 'Very Important', and 48.0% reported giving their foot health 'No thought at all'. Foot ailments were common, with pain in the ball of the feet being the most frequent (56.5%). This pain significantly impacted daily life, inhibiting sleep for most respondents (56.3%). Foot care practices were reactive, with a preference for informal information sources like specific health websites (57.5%) over professional consultation. Sociodemographic factors such as age ($p < 0.001$) and gender ($p < 0.05$) were significantly associated with knowledge and attitudes towards foot health and care.

Conclusion: Apparently healthy adults in Benin City possess fair to good knowledge and attitudes towards foot health but foot care practices are reactive. Their foot health is impacted by common among them. These findings underscore the need for targeted public health initiatives to improve foot health literacy and promote preventive care practices in Benin City.

Keywords: Foot Health, Foot Care, Knowledge, Attitudes.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The human foot is a complex and intricate system comprising numerous bones, joints, muscles, and tendons working together to support the body's weight and facilitate movement (Maffulli et al., 2019; Ficke & Byerly, 2020; Paternostro et al., 2022). With over 26 bones and 30 joints, stabilized by ligaments and muscles, the foot provides a delicate balance between mobility and stability essential for daily activities such as walking and standing (Maffulli et al., 2019; Jastifer, 2023). Its structure, including the arches, is crucial for absorbing shock and distributing weight, underscoring its vital role in overall physical function and well-being (Chan, 2021).

Foot health refers to the overall condition of the feet, encompassing aspects such as skin integrity, nail health, circulation, and sensation (Stolt et al., 2012; Genç et al., 2023). It is a critical aspect of overall well-being, influencing mobility, balance, and quality of life (Stolt et al., 2012; López-López et al., 2021; Khalid et al., 2023). Poor foot health can lead to various complications, including pain, limited mobility, and can even be linked to systemic health issues, particularly in individuals with chronic diseases like Diabetes (Abbas, 2013; El-Sedawy & Behairy, 2016; El-Afandy & Mahmoud, 2022). The domains of foot health commonly assessed include pain and function, footwear, and general foot health, which collectively impact an individual's quality of life, including their social and emotional well-being (López et al., 2016; López-López et al., 2018; Chapman et al., 2023).

Foot problems are prevalent globally, affecting a significant portion of the population, with estimates suggesting that 13% to 36% may experience some form of foot pain over their lifetime

(Gates et al., 2019). Common foot health problems include dermatological issues, nail disorders, corns, calluses, hallux valgus (bunion), toe deformities, foot pain, and plantar fasciitis (Stolt et al., 2012; Menz et al., 2018; Mullins et al., 2022). These issues are often exacerbated by factors such as age, inappropriate footwear, and chronic conditions like rheumatoid arthritis and Diabetes (Otter et al., 2010; Stolt et al., 2012; Soliman & Brogan, 2014; Menz et al., 2018). In Nigeria, studies have indicated the prevalence of specific foot abnormalities among the youth, such as hindfoot valgus (34.2% in primary school children) and hallux valgus (15.4% among youth in Lagos), with both conditions reported to be more common in females and increasing with age (Owoeye et al., 2011; Bafor & Chibuzom, 2020).

The epidemiology of foot health problems highlights significant prevalence across various populations, with specific conditions posing considerable burdens. Diabetic foot ulcers, a severe complication, affect approximately 6.3% of the global diabetic population, with varying prevalence across continents and higher risks associated with older age, disease duration, hypertension, and smoking (Zhang et al., 2017). Foot pain is also widespread, affecting nearly one in five people generally and about 38% of older adults, with higher rates in females and individuals with higher Body Mass Index (BMI) or comorbid pain (Hill et al., 2008; Thomas et al., 2011; Laslett et al., 2018). Beyond prevalence, foot problems significantly impact quality of life, leading to reduced physical activity, impaired function, and social/emotional distress, and can even contribute to health-related job loss (López-López et al., 2021; López-López et al., 2022; Jobanputra et al., 2022). Racial and geographic disparities in complications from foot problems have also been noted (Zhang et al., 2017; Hansen et al., 2022).

Foot care involves practices and interventions aimed at maintaining or improving foot health, preventing foot problems, and managing existing conditions (Somroo et al., 2012). It is

particularly critical for individuals with Diabetes to prevent complications such as ulcers and amputations (Hingorani et al., 2016). Effective foot care strategies encompass both self-care practices and professional interventions. Self-care includes regular foot inspection, washing, drying (especially between toes), moisturizing, proper nail trimming, and wearing appropriate, well-fitting footwear (Miikkola et al., 2019; Untari et al., 2024;). Professional care involves visits to podiatrists or certified foot care nurses for assessment, treatment of complex issues, and preventive care, particularly for high-risk populations (Etnyre et al., 2011; Farndon, 2021). Educational interventions, delivered through various formats including community health workers, are recognized as vital for improving knowledge, self-efficacy, and foot care practices among both diabetic and non-diabetic populations (Lael-Monfared et al., 2019; Stolt et al., 2020; Okatiranti et al., 2024). Preventive measures, such as regular foot assessments and early detection, are crucial components of comprehensive foot care (Stolt et al., 2012; Soliman & Brogan, 2014).

Despite the recognized importance of foot health and care, literature indicates varying levels of public awareness, knowledge, and self-care practices (Genç et al., 2023; Untari et al., 2024). Barriers such as lack of knowledge, perception issues, financial constraints, transportation issues, and limited access to healthcare can impede effective foot care (Oni, 2020; Blanco et al., 2023). While global studies highlight these gaps and barriers, specific data on public opinion, knowledge, and practices regarding foot health and care in diverse Nigerian populations, such as adults in Benin City, remains limited. Understanding the current state of public knowledge, attitudes, and care practices, is essential for developing targeted health education programs and improving foot health outcomes in this specific context.

1.2 Statement of the Problem

Foot health is increasingly recognized as fundamental to overall well-being and quality of life, with some studies highlighting the significant prevalence of foot problems globally across various populations (Stolt et al., 2012; Gates et al., 2019; Genç et al., 2023). Conditions ranging from common ailments like nail problems and pain to more complex pathologies can lead to functional limitations, reduced mobility, and negatively impact participation in daily activities and exercise (Owoeye et al., 2011). Research from countries like the United States has demonstrated that while the public theoretically acknowledges the importance of foot health, it often receives less attention and proactive care compared to other health areas such as dental or eye care (APMA, 2016). Furthermore, this study found that public foot care practices are often basic, and individuals tend to delay seeking professional help, resorting to self-treatment or consulting general practitioners before considering specialized foot health professionals like podiatrists, often only when problems become severe or limiting. Attitudes and behaviours towards foot health and the perceived importance of seeking professional care appear to be complex, influenced by personal beliefs, social norms, perceived needs, and understanding of the link between foot health and general physical well-being (López-López et al., 2017).

Despite the growing body of evidence globally underscoring the prevalence and impact of foot problems, and insights into public attitudes and perceptions in other countries, there is a paucity of research addressing the public's opinion on foot health and care within Nigerian populations, particularly among apparently healthy adults in Benin City, Edo State.

1.3 Research Questions

The research sought to answer the following questions:

- i. What is the self-reported foot health of apparently healthy adults in Benin City?

- ii. What is the knowledge of foot care among apparently healthy adults in Benin City?
- iii. What are the attitudes towards foot care among apparently healthy adults in Benin City?
- iv. What is the practice of foot care among apparently healthy adults in Benin City?
- v. What is the association between sociodemographic (age, gender, marital status, level of education, occupational status and footwear) and each of foot health and care among apparently healthy adults in Benin City?

1.4 Aim of the Study

This aim of this study was to determine the knowledge, attitudes and practice of foot health and care among apparently healthy adults in Benin City, Edo State, Nigeria.

1.4.1 Specific Objectives

- i. To determine the self-reported foot health of apparently healthy adults in Benin City.
- ii. To evaluate the knowledge of foot care among apparently healthy adults in Benin City.
- iii. To investigate the attitudes towards foot care among apparently healthy adults in Benin City.
- iv. To examine the practice of foot care among apparently healthy adults in Benin City.
- v. To determine the association between sociodemographic (age, gender, marital status, level of education, occupational status and footwear) and foot health and care among apparently healthy adults in Benin City.

1.5 Hypothesis

1.5.1 Main Hypothesis

There would be no significant association between apparently healthy adults' socio-demographic (age, gender, marital status, level of education, occupational status and footwear) and each of foot health and care in Benin City.

1.5.2 Sub Hypotheses

- i. There would be no significant association between age and foot health among apparently healthy adults in Benin City.
- ii. There would be no significant association between age and foot care among apparently healthy adults in Benin City.
- iii. There would be no significant association between gender and foot health among apparently healthy adults in Benin City.
- iv. There would be no significant association between gender and foot care among apparently healthy adults in Benin City.
- v. There would be no significant association between marital status and foot health among apparently healthy adults in Benin City.
- vi. There would be no significant association between marital status and foot care among apparently healthy adults in Benin City.
- vii. There would be no significant association between level of education and foot health among apparently healthy adults in Benin City.
- viii. There would be no significant association between level of education and foot care among apparently healthy adults in Benin City.

- ix. There would be no significant association between occupational status and foot health among apparently healthy adults in Benin City.
- x. There would be no significant association between occupational status and foot care among apparently healthy adults in Benin City.
- xi. There would be no significant association between footwear and foot health among apparently healthy adults in Benin City.
- xii. There would be no significant association between footwear and foot care among apparently healthy adults in Benin City.
- xiii. There would be no significant association between BMI and foot health among apparently healthy adults in Benin City.
- xiv. There would be no significant association between BMI and foot care among apparently healthy adults in Benin City.

1.6 Significance/Justification of Study

For physiotherapy educators: The findings from this study will provide invaluable insights into common public understanding, specific knowledge gaps, and prevalent attitudes towards foot health and podiatric care which will enable educators to refine their curriculum. They will be better equipped to tailor teaching modules on patient assessment, communication, and education, ensuring physiotherapy students learn how to address the actual beliefs and barriers about foot health and care present within the community they will eventually serve. This research will ultimately help educators train physiotherapists who are more competent and effective in promoting foot health.

For physiotherapy clinicians: Practicing physiotherapists will benefit significantly from the outcomes of this study. Understanding the typical perspectives and knowledge base of their

potential patient population regarding foot health will enhance their diagnostic and therapeutic interactions. Physiotherapists will be better able to anticipate patient concerns, identify potential misconceptions hindering treatment adherence, and frame their explanations and advice in ways that resonate more effectively. This knowledge will facilitate the development of stronger therapeutic alliances and will inform the tailoring of treatment plans and preventative advice, likely leading to improved patient compliance and better clinical outcomes related to foot conditions.

For researchers: This study will add to the body of evidence on the public opinion on foot health and care. It will generate essential baseline data on public perceptions of foot health, an area with a paucity of research particularly in the context of Edo state. The findings of the study will illuminate areas for further investigation, guide the development of culturally appropriate health promotion interventions, and provide a basis for future longitudinal or comparative studies exploring foot health and care as well as their determinants in Edo State and potentially other parts of Nigeria.

For the general public: Adults in Edo State, particularly people with foot problems will ultimately benefit from the findings of this study. The findings could inform the development of targeted public health campaigns or community educational resources that address specific needs and misconceptions about foot health. This improved awareness and potentially enhanced clinical care will contribute to better prevention, earlier diagnosis, and more effective management of foot problems within the community.

1.7 Scope and Delimitation

This study was delimited to apparently healthy adults aged 18 years and older residing within Egor Local Government Area in Benin City, Edo State. It was also delimited to the American Podiatric Medical Association Foot Health and Care Questionnaire.

1.8 Definition of Terms/Operational Definition of Terms

Foot Health: Refers to the self-perceived overall condition of an individual's feet, encompassing aspects like the presence or absence of pain, functional ability for mobility and daily activities, skin and nail condition, and general comfort, as reported by the study participants (Genç et al., 2023).

Foot Care: Encompasses the range of preventative and management behaviours individuals undertake to maintain or improve their foot health. This includes self-care practices (e.g., inspection, hygiene, appropriate nail trimming, moisturizing) and the seeking of professional assessment or treatment (Somroo et al., 2012).

Foot: The human foot is a highly complex and adaptable anatomical structure, fundamental to bipedal locomotion, weight-bearing, and balance. It serves as the interface between the body and the ground, required to be both rigid enough for propulsion and flexible enough to absorb shock and adapt to uneven surfaces (Drake et al., 2020).

1.9 List of Abbreviations

BMI - Body Mass Index

APMA - American Podiatric Medical Association

CHAPTER TWO

LITERATURE REVIEW

2.1 Anatomy of the Foot

The foot is a complex anatomical structure designed to support the body's weight, absorb impact, provide propulsive force during locomotion, and adapt to varied terrains (Manganaro et al., 2023). The skeletal framework of the foot is remarkably complex, typically comprising 26 bones, though this count can rise to 28 with the common inclusion of two sesamoid bones beneath the head of the first metatarsal. These bones articulate to form 33 distinct joints, all supported and mobilized by an intricate network of over one hundred muscles, tendons, and ligaments (Nazarko, 2007). Notably, the feet house approximately a quarter of all bones in the human body, underscoring their structural significance (Drake et al., 2019).

Anatomically, the foot is conventionally segmented into three primary regions: the hindfoot, the midfoot, and the forefoot (Manganaro et al., 2023). The hindfoot, consisting of the talus and calcaneus, forms the initial point of contact with the ground and facilitates adaptation to uneven surfaces through the talocrural (ankle) and subtalar (talocalcaneal) joints (Manganaro et al., 2023). The midfoot, which includes the navicular, cuboid, and three cuneiform bones (medial, intermediate, and lateral), acts as a bridge, connecting the hindfoot to the forefoot via the midtarsal (Chopart's) joint complex (comprising the talonavicular and calcaneocuboid joints) and articulating with the metatarsals at the tarsometatarsal (Lisfranc's) joints (Manganaro et al., 2023). This region is crucial for providing stability and contributing significantly to the foot's arch system. The forefoot, composed of the five metatarsals and fourteen phalanges (two for the hallux or great toe, and three for each of the lesser toes), is primarily responsible for propulsion

during gait, with key articulations at the metatarsophalangeal (MTP) and interphalangeal (IP) joints (Manganaro et al., 2023). Each of these major joints—talocrural, subtalar, talonavicular, calcaneocuboid, tarsometatarsal, metatarsophalangeal, and interphalangeal—possesses specific movement capabilities that collectively contribute to the foot's overall dynamic function (Manganaro et al., 2023).

The sophisticated movements of the foot are orchestrated by both extrinsic muscles, which originate in the leg and insert into the foot, and intrinsic muscles, which are contained entirely within the foot (Manganaro et al., 2023). Extrinsic muscles, such as the tibialis anterior, extensor hallucis longus, peroneus longus and brevis, gastrocnemius, soleus, and tibialis posterior, are generally larger and generate major movements like dorsiflexion, plantarflexion, inversion, and eversion (Drake et al., 2019). Intrinsic muscles, arranged in layers primarily on the plantar aspect, are vital for fine toe movements, dynamic stabilization of the arches, and adapting the foot to various surfaces (Drake et al., 2019). The structural integrity of the foot's numerous joints is maintained by a complex system of over 100 ligaments (Drake et al., 2019). Prominent among these are the deltoid ligament medially, the lateral collateral ligament complex (anterior talofibular, calcaneofibular, and posterior talofibular ligaments), the plantar fascia (or aponeurosis), the spring ligament (plantar calcaneonavicular), and the long plantar ligament (Drake et al., 2019). The plantar aponeurosis, a robust fibrous band, is particularly crucial for supporting the longitudinal arch and enabling the windlass mechanism, which enhances foot rigidity during push-off.

Neural control and vascular supply are critical for foot function and health. The foot receives its innervation primarily from branches of the tibial and common peroneal (fibular) nerves. The tibial nerve bifurcates into the medial and lateral plantar nerves, which innervate the intrinsic

muscles and provide sensory feedback from the sole of the foot (Manganaro et al., 2023). The common peroneal nerve divides into the superficial and deep peroneal nerves, supplying muscles in the anterior and lateral compartments of the leg and the dorsum of the foot (Manganaro et al., 2023). This rich sensory network is essential for proprioception, balance, and the detection of potentially harmful stimuli. The arterial blood supply to the foot is predominantly derived from the anterior and posterior tibial arteries. The anterior tibial artery continues onto the dorsum of the foot as the dorsalis pedis artery, while the posterior tibial artery courses behind the medial malleolus and divides into the medial and lateral plantar arteries within the sole (Manganaro et al., 2023). These arteries form extensive anastomotic networks, ensuring a robust blood supply to all pedal structures.

The biomechanical efficiency of the foot is largely attributable to its arched structure. The bones are arranged to form three principal arches: the medial longitudinal arch, the lateral longitudinal arch, and the transverse arch (Schuster et al., 2024). These arches are not static structures but are dynamically maintained by the congruent shapes of the articulating bones, the tensile strength of ligaments (notably the plantar fascia and spring ligament), and the coordinated activity of both intrinsic and extrinsic muscles (Schuster et al., 2024). The arches serve multiple vital functions: they distribute body weight effectively during static stance and dynamic movement, absorb and dissipate ground reaction forces, provide a resilient yet rigid lever for propulsion, and allow the foot to conform to irregular surfaces (Schuster et al., 2024). The medial longitudinal arch, in particular, is considered a hallmark of human bipedalism, contributing significantly to midfoot stiffness, which is essential for an efficient push-off phase of gait (Schuster et al., 2024). Age-related changes, such as decreased skin elasticity and bone deformations, can further impact foot structure and function, particularly in older individuals (Nazarko, 2007; Genc et al., 2022).

The inherent intricacy of the foot's anatomy, characterized by numerous small bones, complex joint articulations, and an extensive network of soft tissues, renders it susceptible to a diverse array of dysfunctions and pathologies (Manganaro et al., 2023). This anatomical complexity also implies that the diagnosis and effective management of foot conditions often require specialized knowledge and skills. Such expertise may not always be readily available in general healthcare settings, particularly in resource-constrained environments like those found in parts of South South Nigeria. The American Podiatric Medical Association (APMA) survey highlighted that even in a developed nation like the United States, public awareness and utilization of specialized podiatric care are limited (APMA, 2016), suggesting that the gap in access to specialized foot care is likely to be even more pronounced in less developed regions.

Furthermore, the foot's essential dual capacity—to act as a flexible structure that adapts to uneven ground and concurrently as a rigid lever for effective propulsion—presents a continuous biomechanical challenge (Schuster et al., 2024). Many common foot pathologies emerge when this delicate balance is disrupted. For instance, conditions such as excessive pronation (often associated with pes planus or flat feet) can lead to increased strain on supporting structures due to over-flexibility, while excessive rigidity (as seen in pes cavus or high-arched feet) may result in diminished shock absorption and increased stress on bones and joints. This inherent functional duality means that various factors, including inappropriate footwear, high-impact activities, or underlying anatomical variations, can easily disturb this equilibrium, predisposing individuals to a range of foot problems.

The foot's rich sensory innervation, primarily via the plantar nerves, is indispensable for proprioception, balance, and the protective sensation that guards against injury (Manganaro et al., 2023). When foot pathologies develop, this same neural network becomes a conduit for

significant pain, as exemplified by conditions like plantar fasciitis or Morton's neuroma. Conversely, the loss of this critical sensory feedback, a hallmark of peripheral neuropathy commonly seen in conditions such as diabetes mellitus, eliminates a vital protective mechanism (McDermott et al., 2023). This absence of sensation can lead to individuals sustaining severe, unnoticed injuries from mechanical stress or trauma, often resulting in ulceration, infection, and, in severe cases, amputation. This particular vulnerability is a major concern in diabetic foot care and underscores the importance of public knowledge and preventive practices, which are central to the broader scope of this dissertation.

2.2: Epidemiology of Common Foot Problems

Globally, foot problems are a common experience, with population-based studies indicating a high prevalence of foot and ankle pain, particularly in middle and old age (Thomas et al., 2011; Gates et al., 2018). A systematic review by Thomas et al. (2011) found a pooled prevalence for frequent foot pain of approximately 24% and for frequent ankle pain of around 15% in adults aged 45 and over. Gates et al. (2018), in an international consortium study, reported foot pain prevalence ranging from 13% to 36% across different cohorts, emphasizing that prevalence estimates are often affected by the case definition used. A national survey in the United States by the APMA (2016) revealed that nearly four out of five adults (77%) reported having experienced at least one foot ailment, with individuals averaging 2.6 distinct ailments (APMA, 2016). Among the most frequently cited issues were nail problems (33%), sweaty feet or foot odour (32%), heel pain, often indicative of plantar fasciitis (27%), and pain in the ball of the foot (27%) (APMA, 2016).

Specific conditions also show significant global prevalence. Onychomycosis, or fungal nail

infection, is estimated to affect approximately 10% of the worldwide population, with its prevalence notably increasing with age (Gupta et al., 2020). Genc et al. (2022) found nail problems to be highly prevalent (82.4%) among older individuals in Turkey. Plantar fasciitis, a leading cause of heel pain, is reported to occur in about 10% of the general population globally and is responsible for 11-15% of all foot symptoms that necessitate professional medical attention (Buchanan et al., 2024). This condition is particularly common among active adults aged 25-65 years and shows a higher prevalence in women and individuals with an elevated BMI (Buchanan et al., 2024). Hallux valgus (bunions) affects an estimated 23% to 35% of adults, with prevalence rates increasing in older age groups and being markedly more common in women (Paras & Park, 2025); Genc et al. (2022) identified hallux valgus in 20.6% of their elderly cohort. Other common issues noted by Nazarko (2007) include hammer toe, corns, and calluses. Genc et al. (2022) also reported dermatological problems like cracks (31.1%) and tinea pedis (22.8%) as common in older adults.

Diabetic foot ulcers (DFU) represent a severe global health challenge, with an estimated global prevalence of 6.3% among individuals with diabetes (Zhang et al., 2017). The lifetime risk of a person with diabetes developing a foot ulcer is substantial, ranging from 19% to 34% (McDermott et al., 2023). Indeed, diabetic foot disease (DFD) is a significant contributor to the global burden of disease, accounting for 2% of this burden and ranking as the 13th largest cause among over 350 conditions (Diabetes Feet Australia, 2018).

In Africa and West Africa, foot conditions also pose a considerable health burden. A systematic review, which included studies from African nations, indicated that foot disease was present in approximately one in every twenty general inpatients (Lazzarini et al., 2015). Diabetic foot complications are particularly concerning, as the continent experiences a relentless surge in

diabetes mellitus, leading to a parallel rise in associated complications such as DFU (Abbas & Archibald, 2007). The burden of DFU in Africa is substantial, exacerbated by factors prevalent in sub-Saharan Africa, including delayed diagnosis, limited patient awareness, and inadequate healthcare treatment (Ugwu et al., 2019). Consequently, amputation rates linked to DFU are alarmingly high in many parts of the continent (Ugwu et al., 2019). Peripheral Artery Disease (PAD), a critical risk factor for DFU, also shows an increasing incidence in sub-Saharan Africa, with reported prevalence rates varying widely from 1.7% to 52.5% (Giannopoulos & Armstrong, 2020).

Beyond diabetes-related issues, specific infectious and congenital conditions are also prevalent. Tungiasis, a parasitic infestation caused by sand fleas, is highly prevalent in both rural and urban slum areas across Sub-Saharan Africa, with a pooled prevalence among school-age children estimated at a significant 37.86% (Berihun et al., 2025). Clubfoot, a congenital deformity, also demonstrates a higher birth prevalence in low- and middle-income countries, with the Africa Region reporting an estimated rate of 1.31 per 1000 births (Smythe et al., 2023). Dermatophytoses, while not exclusively foot conditions, represent a significant burden in Africa. Tinea capitis, for instance, affects over 20% of school-age children in West Africa, and tinea corporis is the most commonly reported dermatophytosis among African adults (Coulibaly et al., 2018). While tinea pedis is generally considered less common in tropical Africa compared to temperate climates, comprehensive data may be limited (Roderick, 2020).

In Nigeria, studies also reveal a concerning picture for several foot health issues. Diabetic foot ulcers and their complications are a major concern; studies indicate that nearly two out of every ten outpatients with diabetes in Nigeria suffer from diabetic foot disease, and DFUs are responsible for almost a third of all diabetes-related hospital admissions (Ugwu et al., 2019).

Ikpeme et al. (2010) reported that diabetic foot gangrene accounted for 26% of diabetic emergencies in their Calabar hospital cohort, with a mean ulcer-gangrene interval of only 1.2 weeks, highlighting rapid progression. Amputation rates among hospitalized DFU patients have been reported to be as high as 52% in some Nigerian tertiary centres (Ugwu et al., 2019). Identified risk factors for amputation in this population include an ulcer duration exceeding one month prior to hospitalization, the presence of PAD, a Wagner ulcer grade of 4 or higher, osteomyelitis, proteinuria, and clinical wound infection (Ugwu et al., 2019).

For non-diabetic conditions, a study conducted in a tertiary hospital in Southern Nigeria documented 10 cases of plantar fasciitis over a five-year period, predominantly affecting females between 40 and 60 years of age, leading the authors to suggest that the condition might be more prevalent than indicated by existing published work from the region (Nottidge & Nottidge, 2020). Another Nigerian report cited an incidence of 3.5% for plantar fasciitis based on a small number of cases over five years (Nottidge & Nottidge, 2020). Research among Nigerian college students provided insights into other conditions: the majority of students reported no hallux valgus (80.9%) and no pes planus (81.0%). However, for those affected by hallux valgus, the prevalence was 8.8% for the right foot, 5.0% for the left, and 5.3% bilaterally. For pes planus, the figures were 10.2% for the right foot, 2.8% for the left, and 6.0% bilaterally, with female participants showing significantly higher scores for both conditions (Okonkwo et al., 2023). The same study found that 91.1% of these students reported no foot pain; among those experiencing pain, 7.1% described it as mild and 1.8% as moderate (Okonkwo et al., 2023).

Regarding toe nail pathologies like onychomycosis in Nigeria, a study involving primary school children (mean age 9.42 years) found a culture-positive prevalence of 0.88%, with *Epidermophyton floccosum* and *Trichophyton rubrum* identified as the primary causative agents

(Vestergaard-Jensen et al., 2022). Another study focusing on Nigerian hairdressers reported a 32.74% prevalence of unspecified nail disorders (Archibong et al., 2018). While specific prevalence data for tinea pedis in the general Nigerian adult population are not readily available from the reviewed materials, dermatophytoses are known to be common in West Africa generally (Coulibaly et al., 2018).

Current epidemiological data, supported by findings from Hill et al. (2008) in Australia (17.4% prevalence of foot pain, aching or stiffness) and Gates et al. (2018), suggests a probable significant underestimation of the true burden of common, non-communicable foot problems such as plantar fasciitis and mild hallux valgus in Nigeria and across much of Africa. This is likely due to a combination of factors including a limited number of robust population-based studies, under-reporting by individuals, and a historical research focus on more immediately severe conditions like DFU or infectious diseases such as tungiasis (APMA, 2016). Global data from regions with more developed surveillance systems and better access to healthcare consistently show a high prevalence of these common foot ailments (Thomas et al., 2011; APMA, 2016; Gates et al., 2018).

The few studies available from Nigeria on conditions like plantar fasciitis and hallux valgus in specific cohorts hint at their presence but do not provide a comprehensive picture for the general adult population (Nottidge & Nottidge, 2020). This disparity implies that the actual burden of these conditions is likely considerably higher than currently documented, often masked by limited research investment and a potential tendency for individuals to seek formal medical care only when symptoms become severe or debilitating. Furthermore, foot pain is often associated with increased age, female sex, and obesity (Hill et al., 2008; Thomas et al., 2011; Gates et al., 2018), and significantly impacts health-related quality of life (Hill et al., 2008).

The epidemiological profile of foot problems in Nigeria appears to be shaped by a complex interplay of factors. These include biomechanical and age-related degenerative issues common to all populations, conditions that are significantly exacerbated by prevailing socioeconomic factors (such as inadequate or inappropriate footwear often dictated by cost, poor hygiene practices, and occupational hazards involving prolonged standing or walking), and the presence of tropical infectious diseases (Berihun et al., 2025).

Furthermore, the persistently high prevalence of DFU and the associated high rates of amputation observed in Nigeria point towards systemic challenges within the healthcare system, particularly in diabetes management, patient education, and access to timely and appropriate specialized foot care services (Ugwu et al., 2019; Ikpeme et al., 2010). These issues are likely more influential than the mere biological inevitability of diabetes as a disease. While diabetes inherently increases the risk of foot complications, DFUs are largely preventable through proactive care and education (Manickum et al., 2021). The stark contrast between the high amputation rates in Nigeria and the reductions achieved in many Western countries underscores this point (Ugwu et al., 2019).

The contributing factors to the high amputation rates among diabetic populations in Nigeria likely include delayed presentation of patients to healthcare facilities (Ugwu et al., 2019), insufficient patient knowledge regarding essential foot care practices (Ikpeme et al., 2010; Desalu et al., 2011), a lack of routine foot screening programs, and severely limited access to specialized podiatric services, as implied by the predominant reliance on tertiary hospital-based management for advanced DFU cases (Ugwu et al., 2019). This constellation of factors highlights a critical area for intervention that must address not only patient-level factors but also broader health system strengthening and educational strategies.

2.3 Knowledge and Attitudes toward Foot Health among Adults

In developed nations like the United States, there is a general acknowledgment of the importance of foot health. The APMA (2016) survey found that a significant majority of US adults (84%) concur that it is important to pay attention to their feet and ensure they receive necessary care, with 80% agreeing that foot health is fundamental to overall well-being (APMA, 2016).

Similarly, a study in Spain by López-López et al. (2017) found that participants generally revealed a positive attitude in relation to foot health care and responsible behaviour, with factors such as podiatric behaviours, attitudinal beliefs, and the general perception of foot health influencing their views. However, despite this theoretical understanding, foot care often assumes a lower priority compared to other health concerns such as heart, eye, or dental health (APMA, 2016). This is reflected in the finding that only two in ten US adults regularly give considerable thought to their foot health (APMA, 2016). Furthermore, public awareness regarding the feet as indicators of broader systemic health issues, such as diabetes, circulatory disorders, or arthritis, is often limited (APMA, 2016). For instance, the APMA survey revealed that only 43% of US adults were aware that diabetes could be detected through a foot examination, and a mere 10% knew that heart disease could be similarly identified (APMA, 2016).

Studies conducted globally suggest that while health education interventions can enhance podiatric knowledge (Baba et al., 2015), baseline knowledge levels, especially concerning specific conditions or the intricate links between systemic diseases and foot health, can be notably low (Genc et al., 2022; Yentür et al., 2023). A study involving patients with chronic conditions like rheumatoid arthritis, for example, have documented low scores in foot health knowledge (Yentür et al., 2023). Another study on older individuals in Turkey by Genc et al.

(2022) found that while almost all (91.8%) stated that foot health is important, their overall knowledge was often insufficient, and only 7.7% had received any foot care education.

In African populations, research on foot health knowledge and attitudes, while often concentrated on individuals with diabetes, indicates varying levels of awareness. A comprehensive scoping review that included studies from several African countries highlighted these variable degrees of foot care knowledge among diabetic patients (Manickum et al., 2021). Across sub-Saharan Africa, the substantial burden of Diabetic Foot Ulcers (DFUs) is partly attributed to low patient awareness regarding risk factors and preventive measures (Feleke et al., 2025). Studies conducted in Ethiopia, for example, have demonstrated that adequate knowledge of foot care is a significant predictor of good foot self-care practices among diabetic individuals (Feleke et al., 2025). Nevertheless, the overall prevalence of good practice was around 51% in one systematic review, implying that a considerable proportion of the diabetic population may possess less than adequate knowledge or may not translate knowledge into practice effectively (Feleke et al., 2025). Furthermore, research from South Africa has underscored the association between lower literacy levels and poorer socioeconomic circumstances with diminished foot care knowledge (Manickum et al., 2021).

Within Nigeria, studies focusing on foot health knowledge and attitudes have predominantly centred on diabetic populations, revealing significant knowledge deficits. A study by Desalu et al. (2011) found that 46% of diabetic patients in their Nigerian cohort had poor knowledge of diabetic foot care. Specific gaps included a lack of awareness that smoking adversely affects circulation in the feet (75% unaware), uncertainty about the appropriate initial response to redness or bleeding between the toes (68.8% unaware), and similar uncertainty regarding the management of a corn or hard skin lesion (62.2% unaware) (Desalu et al., 2011). Critically,

Ikpeme et al. (2010) found that among Nigerian diabetic patients presenting with foot gangrene, only 33% had been exposed to any form of foot care education, underscoring a severe knowledge gap in a high-risk group. The work of Ekore et al. (2010) also investigated knowledge and attitudes towards foot care among type 2 diabetes patients attending a primary care clinic in Nigeria, likely uncovering similar trends of knowledge gaps (Manickum et al., 2021). General findings from comparable studies, such as those citing Pollock et al. (2004) regarding UK patients' unawareness of the effects of smoking on foot circulation, suggest that such knowledge deficits are not uncommon (Pollock et al., 2004). More recent research from South-Western Nigeria (conducted in 2022) involving patients with diabetes found that while a high percentage (82.9%) were aware of their diabetic condition, only a small fraction (23.2%) were aware of its potential complications (Taksande et al., 2017). Critically, 63% of these patients reported that foot care examination and education regarding foot complications had not been suggested to them by their treating physicians (Taksande et al., 2017).

These findings point to a significant shortfall in health professional communication and patient education concerning foot health. Qualitative studies exploring the reasons for delayed presentation for DFU care in Nigeria have consistently identified limited knowledge and awareness of diabetic foot complications as a prominent underlying theme (Ogunlana et al., 2021). Many participants in these studies reported either not having received adequate information on foot care or failing to comprehend the risks associated with their condition.

These findings also reveal a gap between a general, often superficial, acknowledgment of the importance of foot health (an attitude) and the possession of specific, actionable knowledge regarding common foot conditions, their risk factors, and effective preventive measures. This gap appears to be particularly wide in populations characterized by lower health literacy or

restricted access to comprehensive health education (APMA, 2016). Even if individuals hold a general positive attitude that feet are "important," as noted by López-López et al. (2017) and Genc et al. (2022), this often does not translate into proactive preventive behaviours due to a lack of detailed understanding of what those behaviours should entail or why they are necessary.

The attitudes and practices of healthcare providers also play a pivotal role in shaping patients' knowledge and their subsequent attitudes towards their own foot health. When healthcare professionals do not consistently prioritize foot health education and routine foot examinations, patients are less likely to perceive these aspects of care as important or to acquire the necessary knowledge to manage their foot health effectively. A study in Nigerian found that 63% of diabetic patients reported that their physicians had never suggested foot care examination or education (Taksande et al., 2017). Similarly, Genc et al. (2022) found that only 24.7% of older individuals in their Turkish study had a prior foot examination. Such omissions by healthcare providers can perpetuate a cycle wherein patients remain unaware of potential risks and fail to develop proactive attitudes towards maintaining their foot health. Even in developed settings, primary care physicians are often the first point of contact for foot problems, rather than specialists (APMA, 2016), highlighting the critical role of primary care in disseminating foot health information. If this primary source of medical advice does not actively engage in foot health education, a significant opportunity for improving public knowledge and attitudes may be missed.

Furthermore, socioeconomic factors and levels of educational attainment emerge as strong determinants of foot health knowledge. Studies done in South Africa (Manickum et al., 2021) and in Nigerian among diabetic patients found that poor educational attainment and low socioeconomic status were significantly associated with lower knowledge scores (Desalu et al.,

2011) suggesting that generic public health messages may not effectively reach or resonate with all segments of the population. Genc et al. (2022) also found that foot care behaviour in older Turkish individuals differed according to education level.

2.4 Knowledge and Attitudes Toward Foot Care Among Adults

There is often a disconnect between understanding the general importance of foot care and possessing detailed knowledge of correct practices, which in turn influences attitudes towards adherence. A survey by APMA in the US found that while a majority (74%) of adults trim their toenails, adherence to other recommended foot care regimens, such as regularly applying lotions (46%) or following a specific foot cleaning routine (33%), is considerably less common (APMA, 2016). Despite these practice gaps, positive attitude towards learning more is evident, with 63% of US adults expressing a desire for more information on how to properly care for their feet (APMA, 2016). Studies involving diabetic patients globally often reveal a similar pattern: a generally positive attitude towards the concept of self-care, but significant deficiencies in the specific knowledge required to perform these practices correctly. For instance, a study in Brazil by Pinto et al. (2014) found that while 80% of diabetic patients expressed a willingness to engage in self-care, many harboured substantial knowledge deficits concerning correct foot hygiene techniques, appropriate nail care, and the characteristics of ideal footwear (Policarpo et al., 2014).

Similarly, López-López et al. (2017) in Spain identified that while general attitudes towards foot health were positive, specific beliefs around self-care and the intention to carry out protective behaviours were distinct factors influencing overall perception. Attitudes towards specific foot care practices, such as the use of therapeutic footwear, may also vary. A study on a diabetic

population suggests that diabetic women may hold more negative attitudes towards the use of appropriate therapeutic footwear, although their actual compliance rates may not significantly differ from those of men (Costa et al., 2022). Nonetheless, adherence to preventive foot care recommendations is often low, even when individuals report adequate knowledge and self-efficacy (Jongebloed-Westra et al., 2022). Identified barriers to adherence include perceiving foot self-care as a lower priority compared to other health management tasks or a general lack of motivation (Zhu et al., 2024).

In Africa, knowledge about and attitudes towards specific foot care regimens also present a mixed picture, largely informed by studies on diabetic populations. A scoping review by Manickum et al. (2021), which included numerous studies from countries in Africa, suggested that while many individuals possessed some knowledge regarding various aspects of foot care, fewer translated this knowledge into consistent and correct practice (Manickum et al., 2021). This points to a potential gap between awareness and implementation, possibly influenced by attitudes that certain practices are not essential or by practical barriers. In Ethiopia, a systematic review focusing on diabetic patients found that possessing knowledge of foot care was significantly associated with good diabetic foot self-care practices (Feleke et al., 2025).

However, the overall prevalence of good practice was reported at only 51%, implying that for nearly half of this population, attitudes towards the consistent implementation of all necessary care components, or a complete understanding thereof, might be suboptimal (Feleke et al., 2025). Similarly, inadequate foot self-care practices are a significant contributor to the high burden of DFUs (Feleke et al., 2025). This deficiency could stem from a lack of detailed knowledge, negative attitudes towards certain recommended practices (perhaps due to inconvenience or cultural factors), or practical limitations (Suglo, 2024). Genc et al. (2022) found that among older

adults in Turkey, foot care behaviour was influenced by education level and regular exercise, suggesting these factors might also shape attitudes towards consistent care.

Among adults in Nigeria, particularly those with diabetes, studies reveal significant gaps in knowledge regarding specific foot care practices, which invariably shape their attitudes. Desalu et al. (2011) documented substantial deficiencies in Nigerian diabetic patients' knowledge about crucial foot care details; for example, only 38.6% were aware of how often they should inspect the inside of their footwear, and just over half (51.1%) knew the correct water temperature for washing their feet (Desalu et al., 2011). Attitudes towards seeking professional advice for footwear selection were notably poor, with a staggering 89.2% of patients reporting that they had not received any advice when they last purchased footwear (Desalu et al., 2011). This could reflect a combination of factors: a lack of knowledge about the importance of appropriate footwear, negative attitudes towards the necessity or feasibility of seeking such advice, or issues related to the accessibility of knowledgeable professionals. A study by Ikpeme et al. (2010) further highlighted this, as only 33% of their cohort of Nigerian diabetic patients with foot gangrene had received any foot care education. Another study by Ekore et al. (2010) also assessed attitudes towards foot care among Nigerian diabetic patients, and it is probable that their findings align with the general trend of positive overall attitudes but specific knowledge deficits that temper these attitudes in practice (Manickum et al., 2021).

Furthermore, the finding from a study conducted in South-Western Nigeria found that 63% of diabetic patients reported their physicians did not suggest foot care examination or education is critical (Taksande et al., 2017). This lack of professional guidance and reinforcement from healthcare providers likely has a profound impact on patients' acquisition of knowledge about specific care regimens and, consequently, their attitude towards the perceived necessity and

importance of these practices. Encouragingly, patients in Zanzibar (a region with some cultural similarities to coastal Nigerian communities) expressed an awareness of the importance of avoiding DFUs and a clear desire for effective health education on foot care (Muhsin et al., 2024), indicating a generally positive underlying attitude towards receiving information and engaging in preventive measures if properly guided.

Similar studies also show that although individuals may articulate positive attitudes towards the general concept of foot care, their specific knowledge about correct and effective practices is often deficient. This deficiency, in turn, leads to suboptimal or even potentially harmful foot care behaviours. This pattern is evident in developed countries, as seen in the APMA survey which showed that while people desire more knowledge, their practices beyond basic toenail trimming are limited (APMA, 2016), and it is mirrored in developing country contexts like Brazil, where high willingness for self-care coexisted with poor knowledge of correct nail cutting or appropriate footwear, resulting in incorrect practices (Policarpo et al., 2014). The findings from a study by Desalu et al. (2011) in Nigeria align with this, showing poor practice scores despite some level of knowledge, and a strong correlation between poor knowledge and poor practice (Desalu et al., 2011). This might suggest that a positive attitude alone, as highlighted by López-López et al. (2017), is insufficient to ensure good foot care; it must be underpinned by accurate, specific, and actionable knowledge to guide effective preventive and maintenance behaviours.

Attitudes towards seeking professional foot care, whether from specialized podiatrists or physiotherapists, for guidance on appropriate footwear, often appear to be suboptimal or negative. In Nigeria, this reluctance can be attributed to a variety of factors, including a lack of awareness regarding the benefits of professional care, perceived high costs, issues with physical accessibility of services, or cultural norms that may favour self-management, traditional

remedies, or informal advice (Ayeniyi et al., 2018). The APMA survey indicated that US adults are more inclined to consult a primary care physician or search online for foot-related issues rather than directly seeking a podiatrist (APMA, 2016). In Nigeria, the study by Desalu et al. (2011) found that very few diabetic patients received professional advice when purchasing footwear (Desalu et al., 2011). The general scarcity of podiatry services in many parts of Africa, including Nigeria means that the societal attitude towards seeking such specialized care may not even have the opportunity to develop, or it might be perceived as an unnecessary or unattainable luxury (Abbas & Archibald, 2007). This can lead to an over-reliance on self-care or advice from non-professionals, which, if not guided by proper knowledge, can be detrimental to foot health, as seen in the high rate of unorthodox treatment among Nigerian patients with DFU (Ikpeme et al., 2010).

Globally, and in some African contexts, women tend to report greater engagement in, or more positive attitudes towards, certain foot care practices compared to men. A survey by APMA (2016) showed that women in the US report higher levels of engagement in a variety of foot care activities (APMA, 2016). Similarly, a study in Brazil found that women demonstrated a greater willingness to incorporate self-care into their routines and exhibited better practices in drying, moisturizing, and massaging their feet (Policarpo et al., 2014). A study in Ethiopia also found that being female was associated with good diabetic foot self-care practice (Feleke et al., 2025). These observations suggest that men might harbour different attitudes, perceive less personal need for detailed foot care, or face different barriers to adopting recommended practices.

2.5 Practice of Foot Care Among Adults

A survey by APMA (2016) conducted in the United States revealed that the most widespread

foot care activity is trimming toenails, reported by 74% of adults. Other practices, such as applying lotions (46%), purchasing supportive footwear (43%), adhering to a specific cleaning regimen for the feet (33%), and using over-the-counter (OTC) insoles (29%), are less consistently performed. Notably, only a small minority (10%) reported the use of doctor-prescribed orthotics (APMA, 2016). When faced with foot ailments, self-medication with OTC products is a common first response (33% in the US), followed by visiting a primary care physician (PCP) (25%), or, concerning, choosing to do nothing and endure the problem (24%) (APMA, 2016). Direct consultation with a podiatrist is less frequent. In the context of chronic conditions like diabetes, a systematic review focusing on diabetic foot self-care practices in Ethiopia indicated a pooled prevalence of good practice at 51% (Feleke et al., 2025). Key practices typically assessed in such studies include regular foot inspection, appropriate hygiene measures, and suitable footwear choices. However, a broader look at adherence reveals that non-adherence to recommended foot care practices, especially for individuals with diabetes, is alarmingly high worldwide, with reported rates ranging from 23% to as high as 93.9% (Zhu et al., 2024). Specific behaviours like daily foot inspection and checking footwear before wearing are often poorly adhered to, despite their importance in preventing complications (Zhu et al., 2024). Genc et al. (2022) found that among older adults in Turkey, more than half (57.7%) had inadequate foot hygiene, only 40.1% usually/always checked their feet, and only 11% usually/always used cream/lotion on their feet.

In African populations, studies focusing on individuals with diabetes frequently uncover suboptimal foot care practices. For instance, a comprehensive scoping review by Manickum et al. (2021) concluded that while many diabetic patients in African settings possessed some knowledge about foot care, significantly fewer translated this knowledge into consistent and

proper practice (Manickum et al., 2021). In Ethiopia, factors found to be associated with good diabetic foot self-care practices included having adequate knowledge of foot care, being female, and residing in a rural area (Feleke et al., 2025). This latter finding is somewhat counterintuitive and may reflect specific local program effectiveness or cultural factors, but it also suggests that urban residents or males might, on average, exhibit poorer practices. Commonly assessed foot care practices in African studies (which are predominantly diabetes-focused) include daily visual inspection of the feet, meticulous washing and drying (particularly between the toes), regular moisturizing, appropriate nail care techniques, informed footwear choices (such as avoiding walking barefoot and inspecting shoes for foreign objects or rough seams before wearing), and seeking timely medical attention for any lesions or unusual changes (Nazarko, 2007; Feleke et al., 2025). A significant systemic barrier to optimal foot care practice in much of Sub-Saharan Africa is the extremely limited access to professional podiatry services (Abbas & Archibald, 2007). This scarcity means that specialized professional foot care is often unavailable or financially inaccessible for a large segment of the population, leading to a greater reliance on self-care (which may be ill-informed) or care from general healthcare providers who may lack specialized training in foot conditions.

Specific foot care practices in Nigeria, particularly among diabetic patients, reflect these broader trends of suboptimal care. The study by Desalu et al. (2011) found that nearly half (49.4%) of the diabetic patients surveyed had poor foot care practice scores. Detailing these poor practices, the study revealed that only 40.9% regularly inspected their feet, only 46% consistently washed their feet with warm water, and a mere 33.5% trimmed their toenails straight across as recommended. Furthermore, a striking 88.6% had not had their feet measured when last purchasing footwear, and an almost identical 89.2% had received no professional advice regarding footwear selection.

Alarmingly, 38.1% of these patients reported regularly walking barefoot, a high-risk behaviour for individuals with diabetes (Desalu et al., 2011). Ikpeme et al. (2010) found that 63% of Nigerian diabetic patients presenting with foot gangrene practiced no significant foot care, and 55% treated their ulcers by unorthodox means. A more recent study from South-Western Nigeria corroborated these findings, noting that while 94% of diabetic respondents claimed to perform daily foot inspection at home, a concerning 77% were not receiving yearly comprehensive professional foot examinations. Only 11% wore footwear specifically recommended for their condition (though 88% did inspect their shoes before wearing them), and 11% admitted to walking barefoot at home. These practices were collectively deemed sub-standard by the researchers (Pollock et al., 2004).

Footwear choices in Nigeria are a significant concern. While not exclusively focused on foot health, a study in Rivers State, Nigeria, involving patients with low back pain, found that 90% of participants emphasized affordability as a primary consideration in their footwear choices, while 40% prioritized comfort/style (Ubom et al., 2024). This highlights the powerful influence of economic drivers on footwear selection, which may often lead to choices that are not conducive to good foot health, potentially overriding considerations of support, protection, or proper fit. The use of "chappals" (a type of open sandal with no heel counter), noted as risky for diabetic patients in an Indian context (Taksande et al., 2017), is relevant as similar inexpensive, open footwear is common in Nigeria due to socioeconomic and cultural factors, posing risks for both diabetic and non-diabetic individuals. Nazarko (2007) emphasizes the importance of well-fitting shoes and avoiding tight footwear to prevent problems like bunions and hammer toes.

Self-treatment and health-seeking behaviours for foot ailments in Nigeria also warrant attention. For musculoskeletal disorders, which can encompass foot pain, a study among Nigerian road

construction workers found that self-medication was the most frequently adopted management strategy (44%), whereas visits to a hospital were the least common (22%) (Egwuonwu et al., 2016). This suggests a cultural or practical inclination towards self-treatment for pain-related conditions. Delayed presentation for diabetic foot ulcers is a well-documented and critical issue in Nigeria, influenced by factors such as limited knowledge of the severity of early symptoms, poor risk perception, competing life priorities, and initial health-seeking behaviours that may involve traditional remedies or informal advice rather than prompt consultation with formal medical services (Ikpeme et al., 2010; Ogunlana et al., 2021). Patients often delay seeking hospital care until the condition has become severe, significantly worsening prognosis. It is also worth noting that practices can vary even within similar low and middle-income country (LMIC) contexts; for example, a study on diabetic patients in Bangladesh reported that 70.66% maintained foot self-care practices, while 29.33% did not (Baral et al., 2024), indicating a spectrum of adherence.

The pervasive influence of economic constraints on footwear choices in settings like South South Nigeria cannot be overstated. For many adults, the cost of shoes is likely a primary determinant, often leading to the selection of inappropriate or poor-quality footwear that may offer inadequate support or protection, thereby contributing to or exacerbating a variety of foot problems (Ubom et al., 2024). This economic pressure means that health-conscious footwear choices may be perceived as a luxury rather than a necessity, particularly when individuals are faced with more immediate financial concerns.

A prevalent approach to managing common foot ailments in Nigeria is likely to involve self-treatment, utilizing over-the-counter medications, traditional remedies, or simply enduring the discomfort, with formal healthcare consultation often delayed, especially for conditions

perceived as non-acute or non-debilitating (Ikpeme et al., 2010; Ogunlana et al., 2021). This pattern is driven by a confluence of factors including the direct and indirect costs associated with formal healthcare, limited physical access to services (especially specialized foot care, which is scarce (Abbas & Archibald, 2007)), and cultural beliefs or past experiences that may favour self-reliance or traditional healing practices. Even in developed countries like the US, a notable percentage of individuals with foot pain either live with it or self-treat before seeking professional help (APMA, 2016), a tendency that is likely amplified in resource-constrained environments.

Furthermore, while daily foot inspection is a widely promoted preventive practice, particularly for at-risk groups like individuals with diabetes, the quality of this inspection and the individual's understanding of what to look for may be critically low. Patients might report looking at their feet, but if they do not know how to identify early warning signs of problems (e.g., subtle changes in skin colour, temperature, presence of small blisters or calluses that could indicate pressure points) or fail to appreciate the significance of these signs, the practice of inspection itself becomes far less effective (Desalu et al., 2011). This highlights a crucial link back to the knowledge deficits discussed earlier; practice without understanding may offer a false sense of security.

2.6 Outcome Measures for Assessing Knowledge, Attitudes, and Practice of Foot Health and Care Among Adults

American Podiatric Medical Association Foot Health and Care Questionnaire

The American Podiatric Medical Association Foot Health and Care Questionnaire was developed by the American Podiatric Medical Association (APMA, 2016). This instrument covers multiple

domains including Importance of Health and Care (assessing the perceived importance of caring for various body parts, including feet, and the thought given to foot health); Foot Ailments and General Health (inquiring about experience with specific foot ailments, frequency of foot pain, experience of other general health ailments, and how foot/ankle pain inhibits activities); Foot Care Practices (comparing regularity of foot care to care for other body parts and identifying specific foot care activities performed); Information Seeking and Podiatry (exploring desire for more foot care information, sources of health information, actions taken for foot ailments, history of visiting medical professionals including podiatrists, familiarity with different medical professionals, and triggers for seeing a podiatrist); and Footwear (desires regarding shoe comfort and appearance, types of shoes owned, and pain experienced with different shoe types). Scoring is based on responses to individual questions, which utilize a variety of formats including categorical choices (e.g., "Very Important," "Agree," "Yes/No"), multiple-selection options, and Likert-type scales (e.g., a 1-10 scale for thought given to foot health).

Foot Health Status Questionnaire (FHSQ)

The Foot Health Status Questionnaire (FHSQ), developed and validated in Australia by Bennett et al. (1998), is a prominent instrument designed to measure an individual's foot health status and the impact of foot conditions on their health-related quality of life. The questionnaire is divided into two sections. Section 1 comprises 13 questions evaluating four foot-specific health domains: Foot Pain, Foot Function, Footwear, and General Foot Health. These items were developed based on patient consultations and expert panels to ensure content coverage and relevance (Bennett et al., 1998). Section 2 consists of items assessing broader general health domains, often mirroring components of general health questionnaires like the SF-36, such as General Health, Physical Activity, Social Capacity, and Vigour. For each of these domains, scores are

transformed to a scale ranging from 0 to 100, where 0 represents the worst possible health status and 100 indicates the best (Bennett et al., 1998). The FHSQ has demonstrated "remarkable validity and reliability" (Bennett et al., 1998, p. 419). A Persian validation study reported internal consistency (Cronbach's α) for the domains ranging from 0.773 to 0.801, and excellent test-retest reliability (Intraclass Correlation Coefficient - ICC) for the total score at 0.911. The FHSQ has also shown high responsiveness to changes, particularly in the context of plantar heel pain (Bennett et al., 1998).

Manchester-Oxford Foot Questionnaire (MOXFQ)

The Manchester-Oxford Foot Questionnaire (MOXFQ) is a 16-item patient-reported outcome (PRO) measure developed by Dawson et al. in 2006. Its development involved adaptation of the Manchester Foot Pain and Disability Index and integrated inputs from patient interviews to ensure it reflected problems associated with conditions like hallux valgus. This self-administered questionnaire groups its 16 items into three distinct domains: Walking/Standing (W/S, 7 items), Pain (P, 5 items), and Social Interaction (SI, 4 items). Each item is rated on a 5-point Likert scale (0-4, where 4 is most severe). Raw domain scores are transformed to a 0-100 scale, where 100 indicates the worst outcome. These can be summed for a MOXFQ Summary Index Score. The MOXFQ has shown good internal consistency (Cronbach's α : W/S 0.92, Pain 0.86, SI 0.73, Index 0.93) and test-retest reliability (ICCs ≥ 0.89). It has established content and construct validity and is responsive to changes post-surgery (Dawson et al., 2006; Dawson et al., 2007).

Nottingham Assessment of Functional Foot Care (NAFF)

The Nottingham Assessment of Functional Foot Care (NAFF) was developed by Lincoln et al. in 2007. This validated instrument was designed to assess practical aspects of foot care practices and behaviours, particularly for individuals with diabetes. The refined version of the NAFF

comprises 29 items that cover domains of protective footcare behaviour and functional footcare, including aspects like the ability to inspect feet, perform nail care, and assess footwear suitability. Responses are typically given on a Likert scale ranging from 0 to 3. Higher scores on the NAFF generally indicate a higher frequency of reported positive foot care behaviours. While the original 29-item, 0-3 Likert scale structure implies a maximum possible score of 87, a score of $\geq 50\%$ of this maximum as indicative of "good practice." The original 29-item version by Lincoln et al. (2007) reported a Cronbach's alpha for internal consistency of 0.53, while another study by Senussi et al. (2011) reported an alpha of 0.61. The Lincoln et al. (2007) validation study found good test-retest reliability with a significant correlation between test and retest scores ($r_s = 0.83$). The NAFF also demonstrated known-groups validity, with individuals with neuropathy scoring significantly higher than those without (Lincoln et al., 2007).

Foot Self-Care Behaviour Questionnaire (FSBQ)

The Foot Self-Care Behaviour Questionnaire (FSBQ) was developed by Vileikyte et al. in 2006. Its development was theory-based, and its content was informed by international foot care guidelines. This 17-item, self-reported questionnaire was designed to assess and differentiate between various foot self-care behaviours, categorizing them into two primary domains: Preventive Behaviour (actions to prevent foot complications like inspection and hygiene) and Potential Damaging Behaviour (actions that could cause harm, such as walking barefoot). The FSBQ employs two different rating scales: a six-point scale (ranging from "twice a day" to "never") for questions about behaviours "during the past week", and a four-point scale (ranging from "always" to "never") for questions about behaviours in general. Each item's response is converted to a 0–1 scale, and mean scores are then computed for each of the two subscales. Higher scores (closer to 1) indicate a greater frequency or endorsement of behaviours within both

the preventive and the potentially foot-damaging categories (Vileikyte et al., 2006).

Self-Developed Questionnaire for DFU Prevention (Pourkazemi et al., 2020)

This semi structured questionnaire was developed by Pourkazemi et al. (2020). It primarily focuses on two domains related to Diabetic Foot Ulcer (DFU) prevention and care: Knowledge (assessed through 15 items) and Practice (also assessed through 15 items). Correct answers in both the knowledge and practice sections received 1 point, while incorrect answers or "I do not know" responses scored 0 points. The total score for each domain was out of 15. A score greater than 11.25 (which is 75% of the maximum score) was categorized as "good," and scores lower than 11.25 were categorized as "poor." The questionnaire achieved mean Content Validity Ratio (CVR) and Content Validity Index (CVI) scores exceeding 0.80, indicating good content validity when tested on a sample of 15 medical and nursing professionals. The internal consistency was reported with Cronbach's alpha coefficients of 0.80 for the knowledge subscale and 0.85 for the practice subscale.

Knowledge, Attitudes and Practice of Diabetic Foot Prevention Questionnaire (Awwad & Abu-Khader 2022)

This instrument assesses knowledge, attitude, and practice concerning DFU prevention and was developed by Awwad & Abu-Khader (2022). The scoring criteria were category-based: for Knowledge, a score of ≥ 8 points was considered "Good," 4–7 points "Satisfactory," and ≤ 3 points "Poor." For Attitude, a score of ≥ 4 points was deemed Favourable, while ≤ 3 points was Unfavourable. For Practice, a score of ≥ 8 points indicated "Good" practice, 4–7 points Satisfactory, and ≤ 3 points Poor.

Knowledge and Practice of Foot Care Questionnaire (Desalu et al., 2011)

The Knowledge and Practice Questionnaire used by Desalu et al. in a study in Nigeria was

developed based on recommendations from the American College of Foot and Ankle Surgeons and Diabetes UK, and had been employed in similar previous studies. It was adapted and translated into local languages (Hausa and Yoruba) for participants unable to communicate in English. The questionnaire focused on two main domains: Knowledge of foot care, assessed with 11 questions, and Practice of foot care, also assessed with 11 questions. The knowledge domain questions probed various aspects of diabetic foot care knowledge, including the rationale for special foot attention in diabetes, the adverse impact of smoking on foot circulation, recommended frequency for foot inspection and washing, correct water temperature, appropriate actions for skin lesions, and the importance of inspecting footwear. Each domain had a maximum possible score of 11. Scores were categorized as: "Good" if the score was $\geq 70\%$ of the maximum, "Satisfactory" for scores between 50-69%, and "Poor" for scores $< 50\%$.

Structured Questionnaire on knowledge of foot care (Ali et al., 2016)

This questionnaire was developed by Ali et al. in 2016. It was designed to assess knowledge of important foot care practices among diabetic patients. It consists of 11 statements relating to key foot care behaviours. These include inspecting feet daily, washing feet daily with gentle warm water, drying feet thoroughly (especially between toes), keeping foot skin soft and smooth, observing precautions when cutting toenails, observing precautions when choosing footwear, avoiding walking barefoot, checking shoes before wearing, protecting feet from extreme temperatures, managing corns or calluses, and understanding that smoking affects the feet. Each statement is rated on a 5-point Likert scale: "Strongly Disagree," "Disagree," "Neither agree nor disagree," "Agree," or "Strongly agree". These questions were developed using guidelines from the American Diabetes Association Guidelines about foot care (Ali et al., 2016).

Semi structured Questionnaire on Attitudes and perceptions towards foot care

This questionnaire was developed by López-López et al. in 2017. This instrument aims to assess attitudes and perceptions concerning foot care, foot health, and the role of podiatry. It comprises of 6 domains including attitudinal beliefs, health perception related to moving around on foot, real needs, behavioural intention and foot care behaviours. Each statement is rated on a 5-point Likert scale: "Totally Disagree," "Disagree," "Neither agree nor disagree," "Agree," or "Totally agree" (López-López et al., 2017).

Foot Care Knowledge Level Form and Foot Care Behaviour Scale (as used by Genc et al., 2022)

Genc et al. (2022) utilized a self-developed "Foot care knowledge level form" with 10 questions on foot health, changes, ailments, care, and footwear. For behaviour, they used the Turkish validity and reliability version of the "Foot Care Behaviour Scale" originally by Borges & Ostwald (2008), which comprises 15 items on nail cutting, hygiene, care, and footwear materials, with a reported Cronbach alpha of 0.85 for the Turkish version (Bicer & Enc, 2014). These demonstrate tools used in recent international research on older adults.

2.7 Empirical Review of Literature

AUTHOR/ YEAR/COUNTRY	TITLE	SAMPLE SIZE	AIM OF STUDY	STUDY TYPE	OUTCOME/MEAS URE	FINDINGS
Ali et al./2016/Pakistan	ARE WE TELLING THE DIABETIC PATIENTS ADEQUATEL Y ABOUT FOOT CARE?	139 diabetic patients	To assess the level of knowledge about foot care in diabetic patients and how much information is imparted by doctors.	Cross-sectional study	Knowledge about foot care (structured questionnaire based on American Diabetes Association Guidelines); source of information about foot care.	Only 36.7% of patients said their doctor told them about foot care. 63% had less than 50% knowledge of 11 points regarding foot care. Deficiency in knowledge among diabetic patients regarding foot care identified.
Bennett et	Development	111	To apply the	Validation	Foot Health Status	Presented a

al./1998/Australia	and Validation of a Questionnaire Designed to Measure Foot-Health Status	subjects	principles of content, criterion, and construct validation to a new questionnaire designed to measure foot-health status.	study	Questionnaire (FHSQ) and Foot Function Index (FFI).	psychometrically evaluated questionnaire with 13 items covering foot pain, foot function, footwear, and general foot health, demonstrating high validity and reliability.
Bossman et al./2021/Ghana	Patients' knowledge of diabetes foot complications and self-management practices in Ghana: A phenomenological study	20 patients with Diabetes	To assess the knowledge and experiences of adult patients with Diabetes on diabetes complications and self-management practices	Phenomenological study	Semi-structured interviews analyzed thematically.	Most participants correctly defined diabetes but had limited knowledge of risk factors and complications. Stroke and hypertension were better known than

			with emphasis on foot care.			foot complications . Dietary knowledge was good, but foot care knowledge was limited.
Desalu et al./2011/Nigeria	DIABETIC FOOT CARE: SELF REPORTED KNOWLEDGE AND PRACTICE AMONG PATIENTS ATTENDING THREE TERTIARY HOSPITAL IN NIGERIA	352 diabetes patients	To determine the knowledge and practice of foot care among diabetes patients attending three tertiary hospitals in Nigeria.	Cross-sectional study	Structured questionnaire with 11 knowledge and 11 practice items.	30.1% had good knowledge, 10.2% had good practice of DM foot care. 78.4% of patients with poor practice had poor knowledge. Illiteracy and low socioeconomic status were significantly associated with poor

						knowledge and practice.
Ekore et al./2010/Nigeria	KNOWLEDGE OF AND ATTITUDE TO FOOT CARE AMONGST TYPE 2 DIABETES PATIENTS ATTENDING A UNIVERSITY-BASED PRIMARY CARE CLINIC IN NIGERIA	137 Type 2 diabetes patients	To determine the level of awareness and attitude to foot care among adult diabetic patients and to emphasize the need for health education.	Descriptive cross-sectional study	Self-administered structured questionnaires.	92% of patients had never received any education on foot care. Awareness of specific foot care measures was very low (e.g., only 25.5% knew to wash feet daily).
Feleke et al./2024/Ethiopia	Diabetic foot self-care practices and its predictors among diabetes	20 studies (6903 participants)	To determine the self-care practices related to diabetic	Systematic review and meta-analysis	Pooled prevalence of good diabetic foot self-care practice and predictors (knowledge, gender, residence).	The pooled prevalence of good diabetic foot self-care practice was 51%.

	mellitus patients in Ethiopia: systematic review and meta-analysis		foot care and identify their predictors among DM patients in Ethiopia.			Knowledge of foot care, being female, and rural residency were significant predictors.
Gates et al./2018/International	Prevalence of Foot Pain Across an International Consortium of Population-Based Cohorts	5 cohorts (total participants varied)	To investigate the prevalence of foot pain in several international population-based cohorts and explore differences in case definitions.	Cross-sectional analysis of cohort data	Foot pain variables from 5 international cohorts (e.g., "pain on most days").	Prevalence of foot pain ranged from 13% to 36%. Pain was generally more prevalent in women and obese individuals and increased with age. Estimates were likely affected by the specific case definition

						used.
Genc et al./2022/Turkey	Determination of Foot Health Problems, Foot Care Knowledge and Behaviour in Older People	364 older individuals (community-dwelling and nursing home residents)	To identify foot health problems, foot care knowledge, and behaviours of community-dwelling older people and nursing home residents.	Descriptive study	Foot health problems form, foot care knowledge level form, foot care behaviour scale. Data on chronic diseases, foot examination history, and foot care education.	70.6% community-dwellers. Most common foot problems: dermatological (93.7%), nail problems (82.4%), hallux valgus (20.6%). Only 7.7% received foot care education. >50% had inadequate foot hygiene. Care behaviour differed by education level and regular exercise.

Hijji et al./2019/USA	The Popularity of Outcome Measures Used in the Foot and Ankle Literature	541 foot & ankle articles	To determine the number of outcome measures reported in recent foot & ankle literature and associations with study characteristics.	Review	Analysis of outcome measures used in 6 major orthopaedic journals (2013-2017).	52 different outcome measures were used. The most popular was the AOFAS score (56.9%). Many studies utilized non-validated measures. Use of generic and disease-specific measures was associated with a higher level of evidence.
Hill et al./2008/Australia	Prevalence and correlates of foot pain in a population-based study:	3,206 adults	To determine the prevalence, correlates	Cross-sectional cohort study	Self-reported pain, aching or stiffness on most days in either foot; SF-36 for	17.4% reported foot pain. Females, those aged

	the North West Adelaide health study		and impact of foot pain in a population-based sample.		quality of life.	50+, obese individuals, and those with other joint pain were more likely to report foot pain. Foot pain was associated with lower scores on all domains of the SF-36.
Idowu et al./2024/Nigeria	Assessment of foot care practice among adults with diabetes mellitus in Ogbomoso, Nigeria	384 adults with DM	To assess foot care practices among adults with diabetes mellitus accessing care at an outpatient clinic.	Cross-sectional study	Nottingham Assessment of Functional Foot Care (NAFFC) questionnaire.	83.6% had good foot care practice. Gender, level of education, and medication use had a significant association with foot care

						practice.
Ikpeme et al./2010/Nigerian	Footcare practices among Nigerian diabetic patients presenting with foot gangrene	27 diabetic patients presenting with foot gangrene	To examine potential preventive footcare practices and awareness in a cohort of diabetic patients presenting with foot gangrene.	Prospective questionnaire-based study	Awareness and practice of 11 footcare modalities; exposure to footcare education; methods of ulcer treatment (orthodox vs. unorthodox). Wagner wound classification.	Only 33% had been exposed to any form of footcare education. 55% treated ulcers by unorthodox means. 63% practiced no significant footcare. Late presentation was a significant cause of morbidity.
Jia et al./2022/China	Knowledge, Attitudes, and Practices Associated With Diabetic Foot	1,080 rural adults with diabetes	To assess the existing knowledge, attitudes and practices	Cross-sectional survey	Self-administered knowledge and attitude questionnaire and the Chinese version of the Nottingham	51.6% had moderate knowledge, 63.9% had a positive attitude, and

	Prevention Among Rural Adults With Diabetes in North China		associated with diabetic foot prevention among adults with diabetes in rural North China.		Assessment of Functional Foot-care Questionnaire.	71.4% had poor practice scores. Knowledge and attitudes were significantly associated with good practices.
López-López et al./2017/Spain	Attitude and knowledge about foot health: a Spanish view	282 participants from a health centre	To explore attitudes towards patients' self-reported data about foot health-related beliefs from a behavioural and attitudinal perspective.	Cross-sectional study	8-factor structure of beliefs about foot health: podiatric behaviours, intention for protective behaviour, attitudinal beliefs, normative beliefs, needs, apathy, self-care, general perception of foot health.	Participants revealed a positive attitude in relation to foot health care and responsible behaviour. Importance attributed to foot health was influenced by foot care behaviours, attitudinal

						beliefs, health perception, and real needs.
Manickum et al./2021/Global	Knowledge and practice of diabetic foot care - A scoping review	58 studies	To systematically map global evidence on foot-care knowledge and practices in relation to diabetes mellitus (DM).	Scoping review	Thematic analysis of foot-care knowledge and practice (foot inspection, hygiene, glycaemic control, foot protection).	Participants had varying degrees of foot-care knowledge and practice. Many had knowledge but fewer practiced proper foot care. A need for intervention on foot care was highlighted.
Miikkola et al./2019/Finland	Challenges of foot self-care in older people: a	17 older people	To gather knowledge about experiences	Qualitative descriptive design with focus groups	Inductive content analysis of focus group transcripts.	Foot self-care was hindered by physical, external, and

	qualitative focus-group study		of foot self-care from the perspective of healthy older people.			internal factors. It was considered important but not systematically carried out. Participants felt healthcare professionals neglected patients' feet.
Nazarko/2007/UK	Care of the feet: common problems and how to treat them	Not applicable (Review article)	To provide guidance for healthcare assistants and assistant practitioners in the care of the feet.	Review article	Discussion of common foot problems (bunions, hammer toe, corns, fungal infections) and general foot care.	Foot care can be a neglected area. Older people and those with chronic diseases are at higher risk. Proper hygiene, nail care, and appropriate footwear are crucial. Women are

						more likely to suffer from foot problems than men.
Ogunlana et al./2021/Nigeria	Qualitative exploration into reasons for delay in seeking medical help with diabetic foot problems	8 participants with diabetes	To explore the causes of delayed presentation in a Nigerian sample of patients with diabetic foot ulcers.	Explorative qualitative design	Thematic analysis of in-depth interviews.	Four themes identified: knowledge and awareness, risk perception, health-seeking triggers and behaviours, and competing priorities (financial, comorbidities, healthcare system delays).
Okafor et al./2024/Nigeria	Self-Care Practices and	382 persons	To assess the self-care	Cross-sectional study	Summary of Diabetes Self-Care Activities	Good self-care was

	the Associated Socio-Demographic Variables of Persons With Type 2 Diabetes Mellitus (T2DM) in Southeast, Nigeria	with T2DM	practices and the associated socio-demographic variables of persons with T2DM in South East, Nigeria.		(SDSCA) and a researcher-developed questionnaire.	observed in diet (51.3%) and medication (89.8%), but poor in foot care (75.1%), self-blood sugar testing (37.7%), and exercise (37.2%). Age, gender, marital status, education, and occupation significantly influenced practices.
Osunde & Olorunfemi/2023/Nigeria	Knowledge, practice, and challenges of diabetes foot care among patients at the University of	220 diabetic patients	To assess the knowledge, practice, and challenges of diabetes	Descriptive cross-sectional study	Self-structured questionnaire.	Good knowledge of foot care was found in 50.0% of patients, but the practice of

	Benin Teaching Hospital, Benin City: A cross-sectional study		foot care among patients with diabetes mellitus.			foot care was poor. Forgetfulness (90.0%) and fatigue (91.4%) were major challenges. Not receiving foot care education was a significant predictor of foot ulcers.
Qadi et al./2011/Saudi Arabia	Foot Care Knowledge and Practice among Diabetic Patients Attending Primary Health Care Centres in Jeddah City	747 diabetic patients	To identify the present status of foot care knowledge and practice among diabetic patients in Jeddah city.	Cross-sectional study	Foot care knowledge (9 questions) and practice (11 questions) Questionnaire adapted from Meijer et al.	Median knowledge score 7/9; median practice score 14/33. Weakness in knowledge of daily observation to detect ulcers and shoe specifications.

						Weakness in practice of using a mirror for foot checkup and footwear-related practices.
Thomas et al./2011/Global	The population prevalence of foot and ankle pain in middle and old age: A systematic review	31 studies (75,505 participants)	To determine the prevalence of foot and ankle pain in middle and old age.	Systematic review and meta-analysis	Pooled prevalence estimates for frequent foot pain and frequent ankle pain.	Pooled prevalence for frequent foot pain was 24% and for frequent ankle pain was 15%. Pain was more prevalent in females and showed an age-related increase in women.
Whittaker et al./2020/Global	Measures of Foot Pain,	Not applicable	To provide an overview	Review article	Critical appraisal of 10 common patient-	Provides a summary and

	Foot Function, and General Foot Health	(Review of outcome measures)	of the most common outcome measures used to evaluate foot pain, foot function, and general foot health.		reported outcome measures for foot and ankle conditions.	critique of instruments like AOFAS, FAAM, FFI-R, FHSQ, MFPDI, MOXFQ, etc., outlining their strengths, weaknesses, and appropriate use in clinical and research settings.
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CHAPTER THREE

MATERIALS AND METHODS

3.1 Materials

3.1.1 Population

Male and female adults aged 18 years and above residing within Egor Local Government Area, Benin City, Edo State, Nigeria was sought to participate in this study.

3.1.2 Selection Criteria

3.1.2.1 Inclusion Criteria

Included participants for this study met the following criteria:

- i. Be at least 18 years of age.
- ii. Be resident within Benin City, Edo State, Nigeria.
- iii. Be able to provide informed consent to participate in a survey.
- iv. Ability to read and understand English Language.

3.1.2.2 Exclusion Criteria

The study excluded:

- i. People with foot deformities and major foot problems.
- ii. Individuals unwilling to participate in the study.
- iii. Incompletely filled questionnaires.

3.1.3 List of Instruments

- i. Weighing Scale (Camry, model BR9204, Hong Kong).
- ii. Stadiometer (SECA, model 220, Germany).

- iii. American Podiatric Medical Association Foot Health and Care Questionnaire (Appendix II).

3.1.4 Description of Instruments

Weighing Scale: A portable weighing scale (Camry, model BR9204, Hong Kong) calibrated from 0 – 120 kilograms and 0 - 260 pounds was used in taking participants' weight to the nearest 1.0kg.

Stadiometer: A portable stadiometer (SECA, model 220, Germany) with calibration ranging from 20 to 210 centimetres was used to measure participants' heights. The measurements in centimetres was then converted to metres.

American Podiatric Medical Association Foot Health and Care Questionnaire: The American Podiatric Medical Association Foot Health and Care Questionnaire developed by the American Podiatric Medical Association was used in this study (APMA, 2016). It is a 32-item questionnaire comprising Likert scale questions and Multi Choice Questions (MCQ). It is used to assess respondents' knowledge, attitudes and practice of foot health and care. It is divided into 5 domains namely importance of foot health and care, foot health and ailments, foot care practices, information seeking and podiatry and footwear. The questionnaire is divided in 6 sections. Section A collects respondents' sociodemographic characteristics. Section B – E collects participants' responses to questions under the 5 domains covered by the questionnaire.

3.2 Methods

3.2.1 Research Design

This is a cross-sectional survey design.

3.2.2 Sampling Technique

A multi-stage sampling technique comprising four stages was employed in the selection of participants for this study. In the first stage, simple random sampling technique by balloting was used to select one LGA (Egor) from the three LGAs (Egor, Ikpoba-Okha and Oredo LGAs) which make up Benin City. In the second stage, simple random sampling by balloting was done to select one ward (Ugbowo) from the 10 wards in Egor LGA: Otubu, Oliha, Ogida/Use, Egor, Uwelu, Evbareke, Usele I, Usele II, Okhoro, and Ugbowo. Stage three comprised selection of communities. Two of the four communities in Ugbowo was selected using simple random sampling method by balloting. The fourth stage involved consecutive sampling to select eligible participants within the two communities in Ugbowo.

3.2.3 Sample Size

The sample size for this study was calculated using the Cochran formula:

e = desired level of precision, the margin of error

p = the fraction of the population (as percentage) that displays the attribute

z : the z -value, extracted from a z -table

$z = 1.96$, $p = 0.5$, $e = 0.05$

A minimum sample size of 1000 participants was used to ensure robustness and generalizability of the results obtained.

3.2.4 Ethical Consideration

Ethical approval for this study was obtained from the Edo State Ministry of Health, before the commencement of this study. Informed consent was also obtained from all participants, ensuring that the purpose of the study was understood and that their privacy and confidentiality were protected.

3.2.5 Procedure for Data Collection

The approval of the Edo State Ministry of Health was sought and obtained before the commencement of the study. Participants for this study were recruited through face-to-face contact within two communities in Egor, Benin City, Edo State, Nigeria. The purpose and procedure of the study was explained in detail to all participants. All their questions were satisfactorily addressed and their informed consent was sought and obtained. All participants were encouraged to participate voluntarily and their right to withdrawal at any time and for any reason was upheld.

The questionnaire used in this study was self-administered by participants in 10 minutes. Completed questionnaires was retrieved by the researcher on the same day. Participants' height and weight was also taken using a stadiometer and weighing scale respectively. Participants' BMI was then calculated by dividing their weight in kilograms (kg) by the square of their height in metres (m).

3.2.6 Data Analysis

The data collected from responses was entered onto Microsoft Excel and will be analysed by the Statistical Package for Social Sciences (SPSS version 26). The sociodemographic data (age, gender, marital status, level of education, occupational status and footwear) collected were subjected to a normality test. If the data was normally distributed, it would be summarized using descriptive statistics such as frequencies, percentages, means, and standard deviations. If the data was not normally distributed, descriptive statistics of median would be used to summarize the data. Scores obtained from the questionnaires administered (e.g. The Foot Health Status Questionnaire) would also be summarized using descriptive statistics including frequencies and percentages.

Inferential statistics of Chi-square would be used to determine the association between respondents' knowledge and each of age, gender, marital status, level of education, occupational status and footwear. Inferential statistics of Chi-square would also be used to determine the association between respondents' attitude and each of age, gender, marital status, level of education, occupational status and footwear. Inferential statistics of Chi-square would also be used to determine the association between respondents' practice and each of age, gender, marital status, level of education, occupational status and footwear. A p-value of less than 0.05 would be considered statistically significant.

CHAPTER FOUR

RESULTS

4.1.1 Respondents' Sociographic Characteristics

The gender distribution of the respondents in this study showed a majority of males, who constituted 59.8% of the sample, while females accounted for the remaining 40.2%.

Regarding the age of the respondents, the largest group was those aged 56–65 years, representing 19.9% of the sample. This was followed by the 46–55 years age bracket at 19.3%. The smallest age group was 36–45 years, which made up 13.4% of the respondents.

In terms of marital status, the largest group was single respondents, accounting for 29.7%, followed closely by married respondents at 27.8%. Widowed respondents comprised 19.3%, separated were 15.7%, and divorced respondents were the smallest group at 7.5%.

The vast majority of respondents, 46.4%, had a university education as their highest educational qualification. Respondents with no formal education constituted 17.2% of the sample, while those with a primary school education were 16.2%.

The occupational status of the respondents showed that self-employed individuals were the largest group, at 38.9%. This was followed by those in private employment at 25.8%, and civil servants at 18.4%. Retired and unemployed individuals represented 8.9% and 8.0% of the sample, respectively.

The mean height of the respondents was 1.71 ± 0.08 meters, with a range of 1.53 to 1.91 meters.

The mean weight was 70.31 ± 8.82 kilograms, with a range of 50.00 to 87.00 kilograms. The mean Body Mass Index (BMI) was 24.01 ± 2.66 kg/m². Based on BMI categories, 65.0% of respondents were of normal weight, 30.9% were overweight, 2.2% were obese, and 1.9% were underweight. (Table 1)

Table 1: Descriptive Statistics of Respondents' Sociodemographic Characteristics

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	598	59.8
	Female	402	40.2
Age (Years)	18–25	161	16.1
	26–35	158	15.8
	36–45	134	13.4
	46–55	193	19.3
	56–65	199	19.9
	>65	155	15.5
Marital Status	Single	297	29.7
	Married	278	27.8
	Divorced	75	7.5
	Widowed	193	19.3
	Separated	157	15.7
Level of Education	No formal education	172	17.2
	Primary school	162	16.2
	Secondary school	202	20.2
	University education	464	46.4
Occupational Status	Unemployed	80	8.0
	Self Employed	389	38.9
	Civil Servant	184	18.4
	Private Employment	258	25.8
	Retired	89	8.9
BMI Category	Underweight (<18.5)	19	1.9
	Normal weight (18.5–24.9)	650	65.0
	Overweight (25.0–29.9)	309	30.9
	Obese (≥ 30.0)	22	2.2
Variable	Mean $\pm$ SD	Minimum	Maximum
Height (m)	1.71 $\pm$ 0.08	1.53	1.91
Weight (kg)	70.31 $\pm$ 8.82	50.00	87.00
BMI (kg/m ²)	24.01 $\pm$ 2.66	17.56	30.32

4.1.2 Respondents' Perceived Importance of Various Health Aspects

Respondents were asked to rate the importance of caring for various aspects of their health. The care of feet received the highest rating of 'Very Important' from 41.7% of the respondents. This was followed by nutrition, which 37.4% rated as 'Very Important', and teeth, rated as 'Very Important' by 37.3%. In contrast, the care of the eyes was rated as 'Very Important' by the fewest respondents at 27.5%. A detailed breakdown of the responses is provided in Table 2.

Table 2: Respondents' Perceived Importance of Various Health Aspects

Aspect of Health	Not at All Important n (%)	Slightly Important n (%)	Very Important n (%)
The Heart	348 (34.8)	305 (30.5)	347 (34.7)
The Eyes	336 (33.6)	389 (38.9)	275 (27.5)
The Teeth	312 (31.2)	315 (31.5)	373 (37.3)
The Skin	324 (32.4)	339 (33.9)	337 (33.7)
Nutrition	321 (32.1)	305 (30.5)	374 (37.4)
The Feet	303 (30.3)	280 (28.0)	417 (41.7)
Regular Exercise	376 (37.6)	264 (26.4)	360 (36.0)

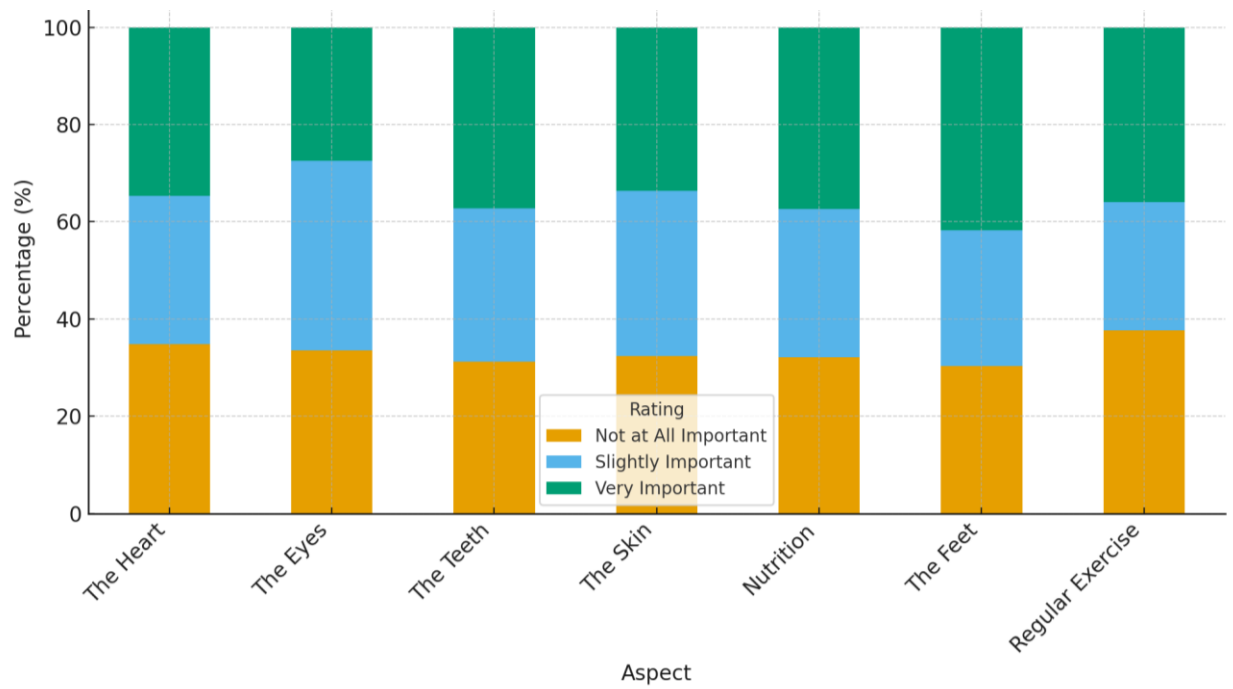


Figure 1: Bar Chart Showing Respondents' Perceived Importance of Various Health Aspects

4.1.3 Respondents' Consideration Given to Foot Health

When asked how much thought they give to the health of their feet, the most frequent response was 'No thought at all', selected by 48.0% of the respondents. 'Some thought' was indicated by 28.8%, while 23.2% reported giving 'A lot of thought' to their foot health. The detailed responses are presented in Table 3.

Table 3: Respondents' Consideration Given to Foot Health

Question	A lot of thought n (%)	Some thought n (%)	No thought at all n (%)
How much thought do you give to the health of your feet?	232 (23.2)	288 (28.8)	480 (48.0)

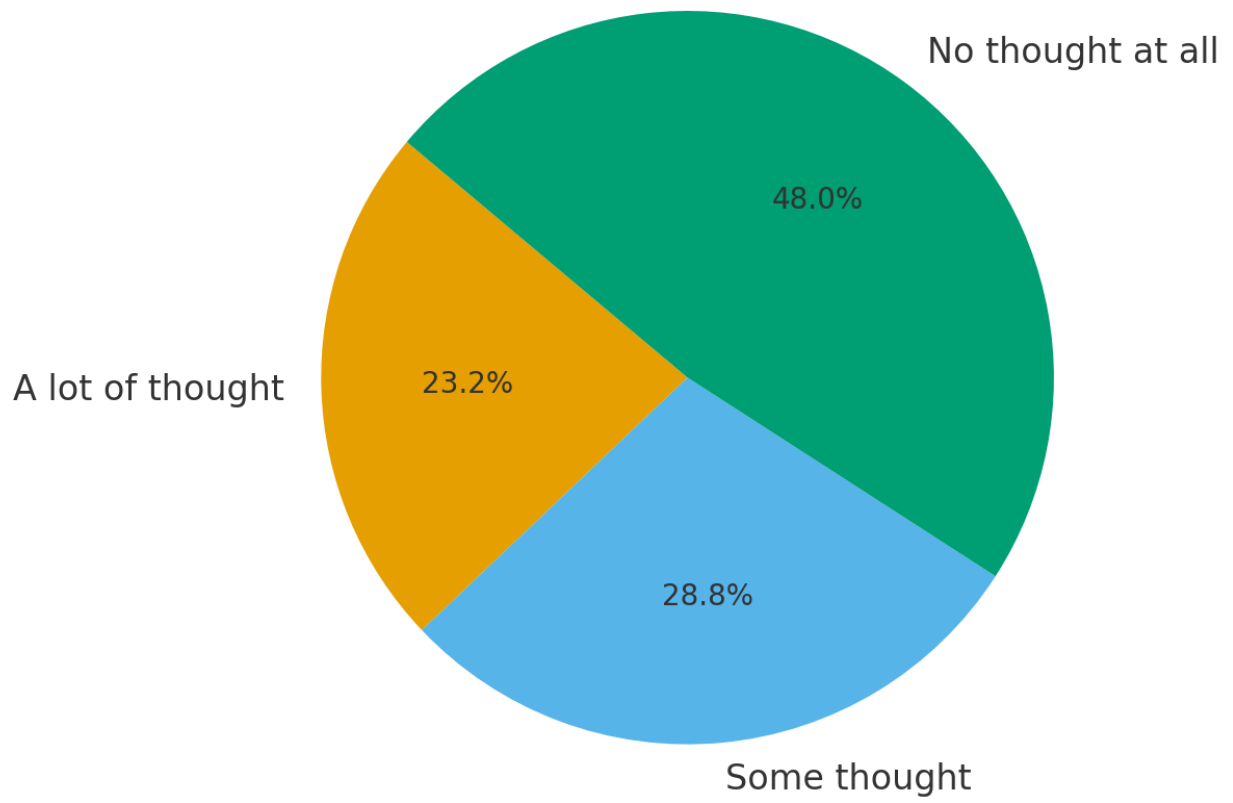


Figure 2: Pie Chart Showing Respondents' Consideration Given to Foot Health

4.1.4 Respondents' Attitudes Towards Foot Health

The study assessed the respondents' agreement with several statements about foot health. The statement "Foot health is fundamental to your overall well-being" had the highest level of agreement, with 40.7% of respondents agreeing. In contrast, the statement "Feet can be an important indicator of other serious health problems" received the highest level of disagreement at 47.2%. Detailed responses are presented in Table 4.

Table 4: Respondents' Attitudes Towards Foot Health

Variable	Disagree n (%)	Neutral n (%)	Agree n (%)
It is important to pay attention to feet and get them the care they need	276 (27.6)	467 (46.7)	257 (25.7)
Foot health is fundamental to your overall well-being	277 (27.7)	316 (31.6)	407 (40.7)
Feet can be an important indicator of other serious health problems	472 (47.2)	317 (31.7)	211 (21.1)
Feet are incredibly complex and require expert care by a podiatrist	341 (34.1)	404 (40.4)	255 (25.5)

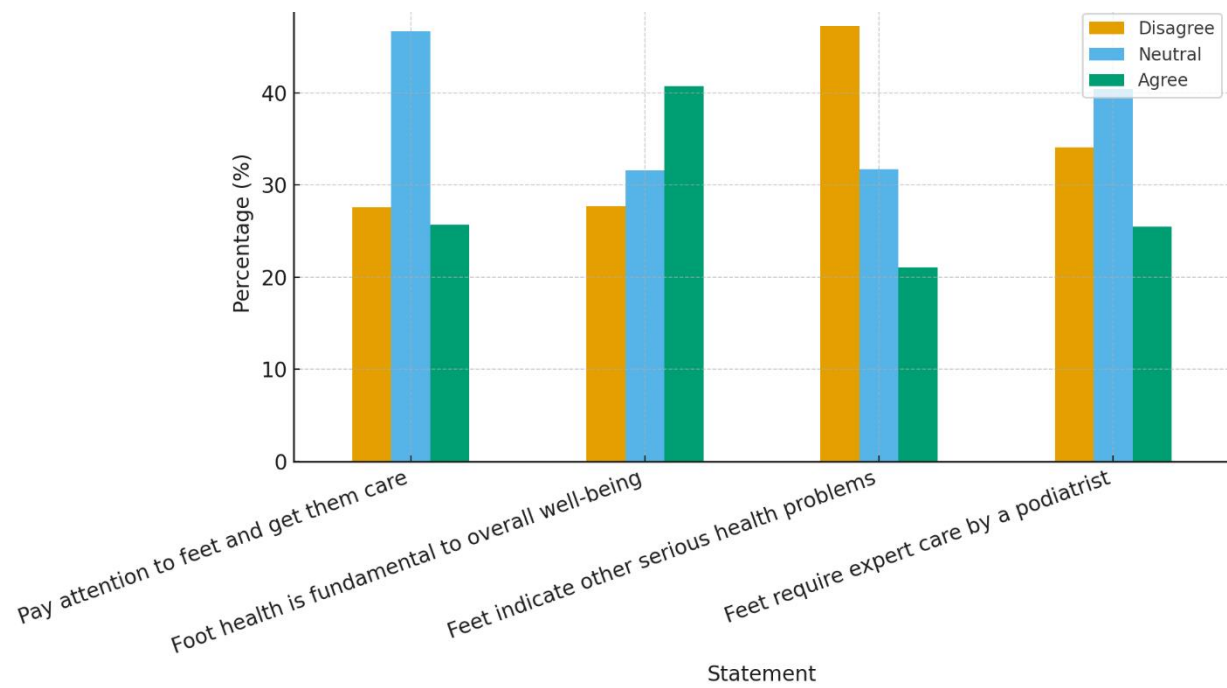


Figure 3: Bar Chart Showing Respondents' Attitudes Towards Foot Health

4.1.5 Prevalence of Foot Ailments among Respondents

Respondents were asked to indicate if they had ever experienced a range of common foot ailments. The most commonly experienced ailment was pain in the ball of the feet, reported by 56.5% of respondents. This was followed by nail problems (54.9%) and heel pain/plantar fasciitis (52.9%). The least prevalent issue was bunions, which was reported by 45.7% of the sample. Detailed responses for all listed ailments are provided in Table 5.

Table 5: Prevalence of Foot Ailments among Respondents

Foot Ailment	Yes n (%)	No n (%)
Nail problems	549 (54.9)	451 (45.1)
Sweaty feet/foot odor	478 (47.8)	522 (52.2)
Heel pain/plantar fasciitis	529 (52.9)	471 (47.1)
Pain in the ball of feet	565 (56.5)	435 (43.5)
Pain from high heels	494 (49.4)	506 (50.6)
Bunions	457 (45.7)	543 (54.3)
Bone spurs	496 (49.6)	504 (50.4)
Tendinitis	511 (51.1)	489 (48.9)
Stress fractures	476 (47.6)	524 (52.4)
Hammer toes	499 (49.9)	501 (50.1)
Pinched nerve/neuroma	506 (50.6)	494 (49.4)
Other	0 (0.0)	1000 (100.0)
None of the above	0 (0.0)	1000 (100.0)

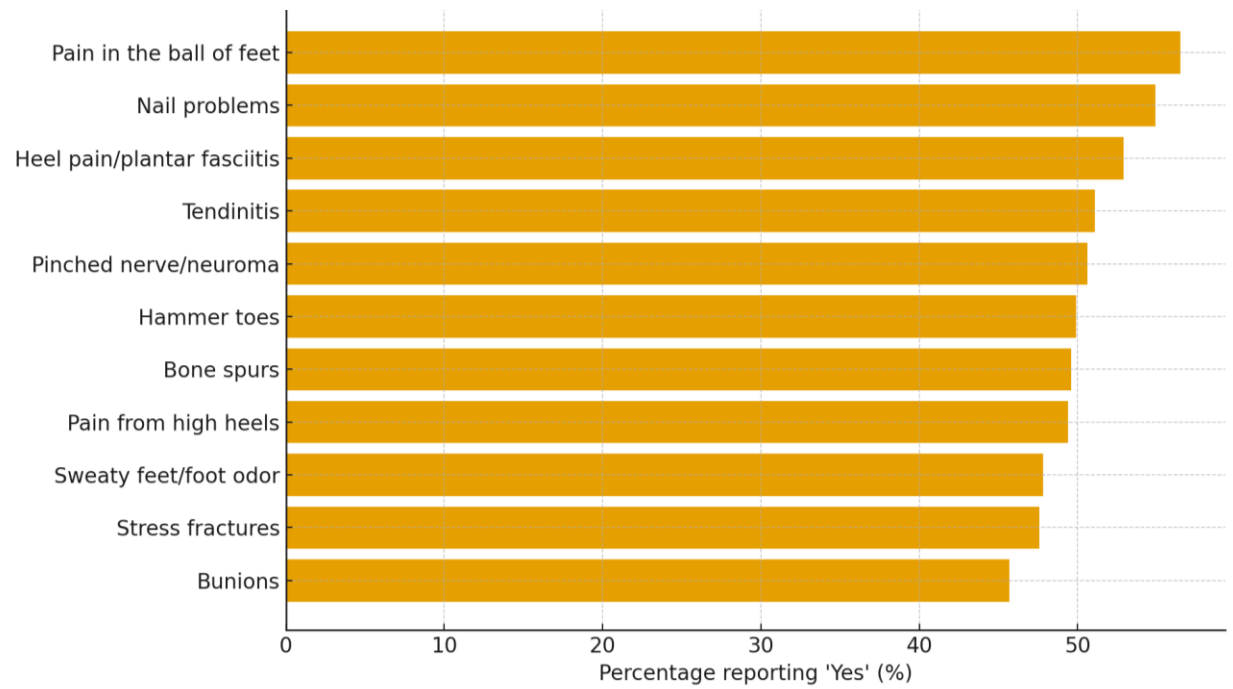


Figure 4: Bar Chart Showing Prevalence of Foot Ailments among Respondents

4.1.6 Prevalence of Foot Pain among Respondents

When asked about the frequency of foot pain, respondents were closely divided. A slight majority of 51.0% reported experiencing foot pain "Some of the time," while the remaining 49.0% experienced it "Most of the time." Table 6

Table 6: Prevalence of Foot Pain among Respondents

Response Category	Frequency (n)	Percentage (%)
Some of the time	510	51.0
Most of the time	490	49.0
Total	1000	100.0

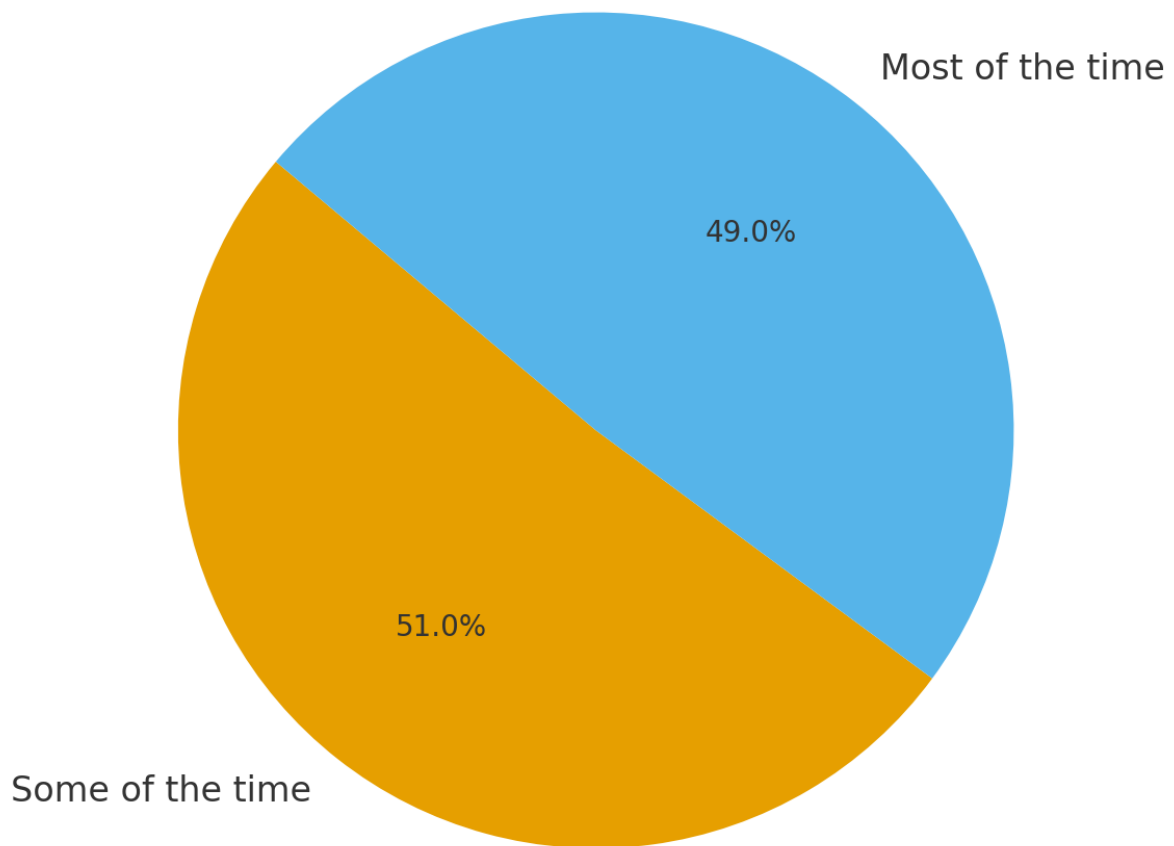


Figure 5: Pie chart Prevalence of Foot Pain among Respondents

4.1.7 Prevalence of Other Health Ailments among Respondents

Respondents were also asked about the frequency of other general health ailments. Joint pain/arthritis was the most frequently reported issue, with 45.0% of respondents experiencing it frequently. This was followed by back pain/discomfort (41.9%). Conversely, dental pain/discomfort was the ailment most commonly reported as not experienced at all (46.0%). The detailed breakdown for all ailments is shown in Table 7.

Table 7: Prevalence of Other Health Ailments among Respondents

Ailment	Not at all n (%)	Slightly often n (%)	Frequently n (%)
Weight issues	304 (30.4)	298 (29.8)	398 (39.8)
Back pain/discomfort	353 (35.3)	228 (22.8)	419 (41.9)
Eyesight issues	275 (27.5)	404 (40.4)	321 (32.1)
Joint pain/arthritis	296 (29.6)	254 (25.4)	450 (45.0)
Knee pain/discomfort	335 (33.5)	324 (32.4)	341 (34.1)
Skin issues/acne	410 (41.0)	215 (21.5)	375 (37.5)
Dental pain/discomfort	460 (46.0)	197 (19.7)	343 (34.3)
Circulatory issues/ailments	253 (25.3)	352 (35.2)	395 (39.5)
Heart issues	315 (31.5)	311 (31.1)	374 (37.4)

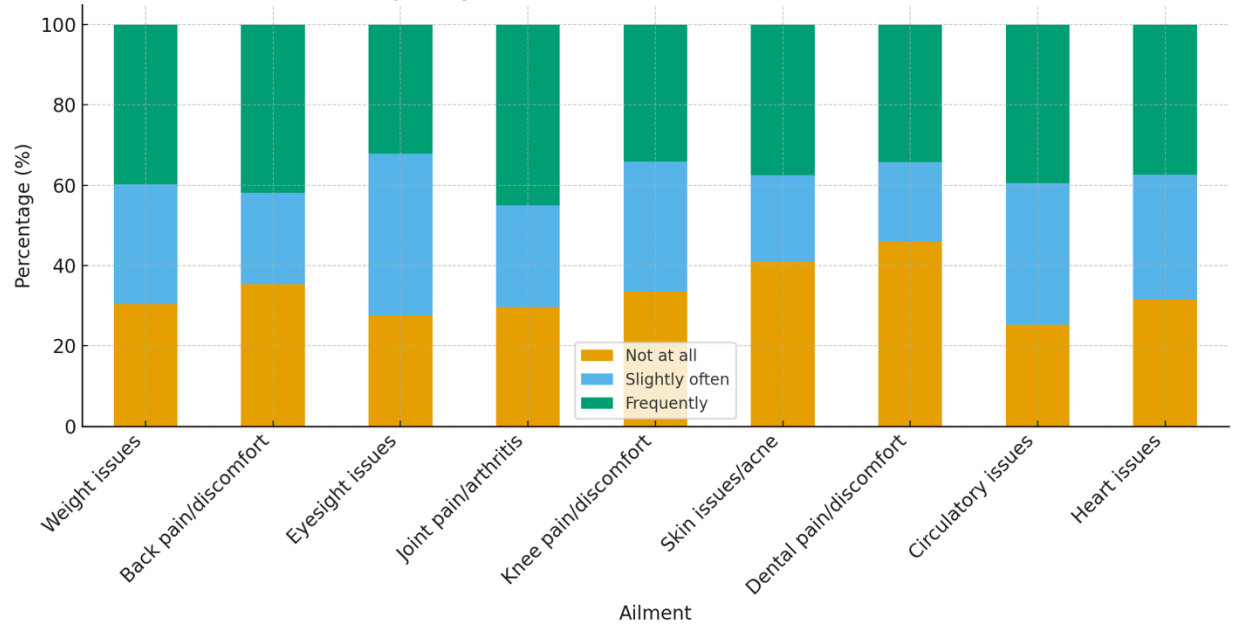


Figure 6: Bar Chart Showing Prevalence of Other Health Ailments among Respondents

4.1.8 Impact of Foot and Ankle Pain on Activities among Respondents

Respondents were asked whether foot or ankle pain had ever prevented them from performing various activities. The most frequently inhibited activity was sleeping, with 56.3% of respondents reporting this. This was followed by going to work/doing your job (54.6%) and playing with children/grandchildren (51.6%). Conversely, standing for long periods (42.2%) and exercising (42.7%) were the least affected activities among those reported. Detailed results are shown in Table 8.

Table 8: Impact of Foot and Ankle Pain on Daily Activities among Respondents

Activity Inhibited by Pain	Yes n (%)	No n (%)
Walking	492 (49.2)	508 (50.8)
Standing up for long periods of time	422 (42.2)	578 (57.8)
Exercising	427 (42.7)	573 (57.3)
Sleeping	563 (56.3)	437 (43.7)
Going to work/doing your job	546 (54.6)	454 (45.4)
Playing with children/grandchildren	516 (51.6)	484 (48.4)
Traveling for leisure or business	482 (48.2)	518 (51.8)

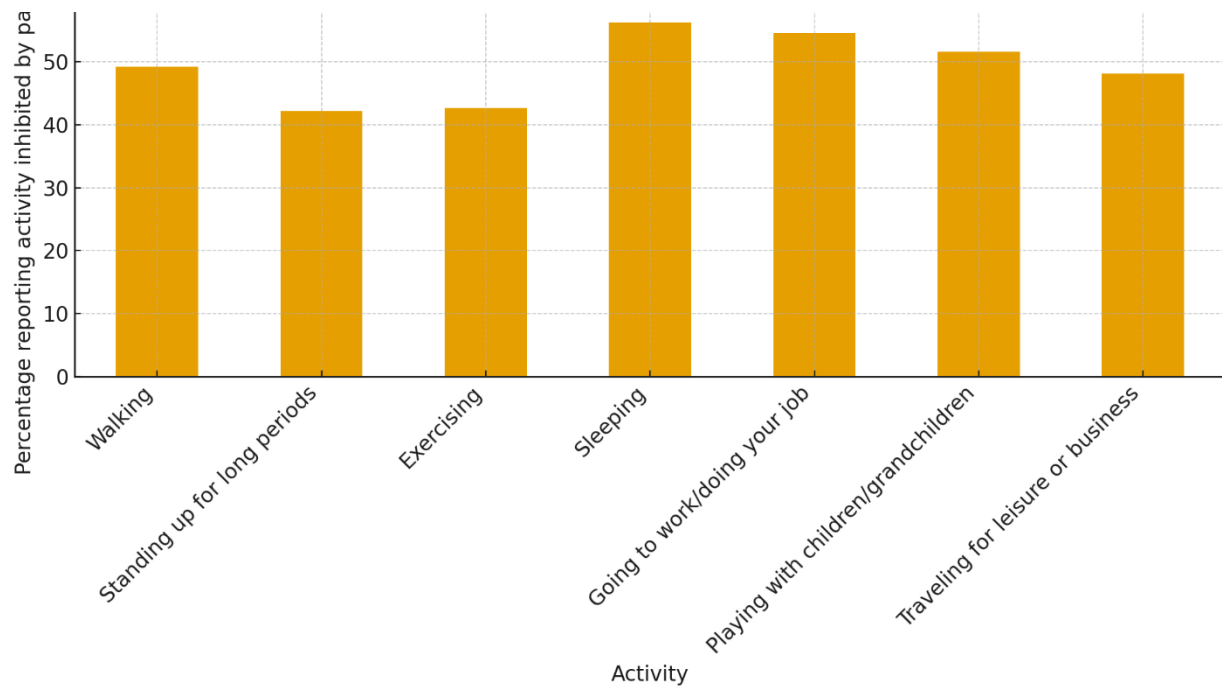


Figure 7: Bar Chart Showing Impact of Foot Pain on Activities among Respondents

4.1.9 Respondents' Perceived Impact of Pain-Free Feet on Lifestyle

Respondents were asked to consider how their lifestyle might change if they did not experience foot pain. When asked if they would 'walk more,' the responses were fairly evenly distributed, with 34.6% stating this would describe them 'perfectly well', 34.2% 'somewhat well', and 31.2% 'not at all'. A similar pattern was seen for participating in more activities. Regarding exercising more, the most common response was 'somewhat well' (37.3%). Table 9

Table 9: Respondents' Perceived Lifestyle Changes with Pain-Free Feet

Statement: "If my feet did not hurt..."	Not at all n (%)	Somewhat well n (%)	Perfectly well n (%)
"I would exercise more"	336 (33.6)	373 (37.3)	291 (29.1)
"I would walk more"	312 (31.2)	342 (34.2)	346 (34.6)
"I would participate in more activities"	398 (39.8)	367 (36.7)	235 (23.5)

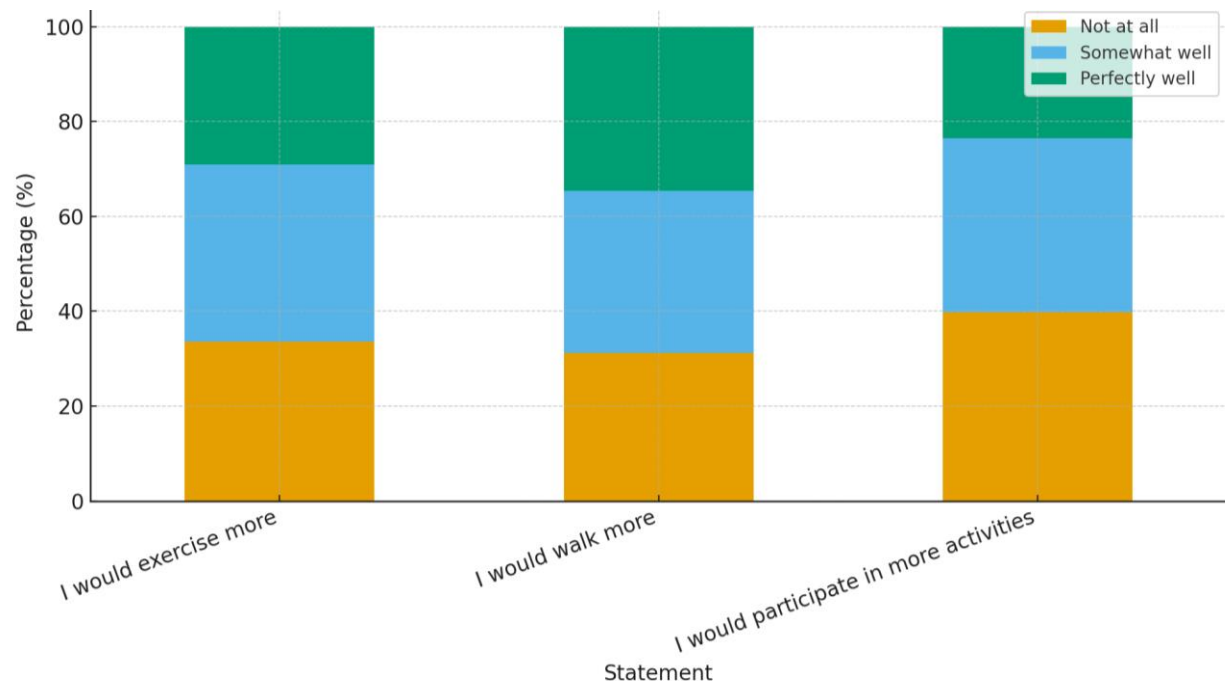


Figure 8: Bar Chart Showing Respondents' Perceived Lifestyle Changes with Pain-Free Feet

4.1.10 Respondents' Self-Care Practices of Body Parts commonly Care For

Respondents were asked about the regularity of various self-care practices. Care for feet was the practice most frequently reported as being performed "all the time" (44.5%). This was followed by care for skin (41.5%). In contrast, engaging in regular exercise was most frequently reported as "never" (31.2%). Detailed responses are shown in Table 10.

Table 10: Respondents' Self-Care Practices of Body Parts commonly Care For

Self-Care Practice	Never n (%)	Some of the time n (%)	All the time n (%)
Care for your teeth	310 (31.0)	386 (38.6)	304 (30.4)
Care for your eyes	279 (27.9)	373 (37.3)	348 (34.8)
Care for your heart	337 (33.7)	296 (29.6)	367 (36.7)
Care for your skin	339 (33.9)	246 (24.6)	415 (41.5)
Care for your feet	222 (22.2)	333 (33.3)	445 (44.5)
Engage in regular exercise	312 (31.2)	237 (23.7)	451 (45.1)
Follow a nutritious diet	269 (26.9)	365 (36.5)	366 (36.6)

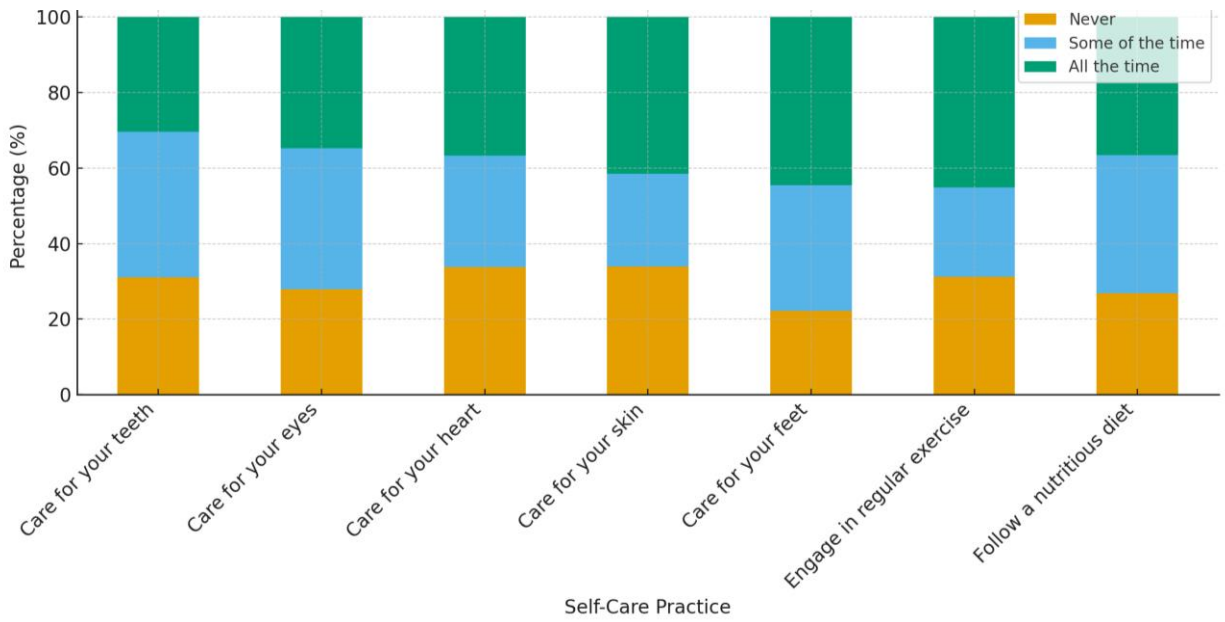


Figure 9: Bar Chart Showing Respondents' Self-Care Practices of Body Parts commonly Care For

4.1.11 Respondents' Selected Foot Care Activities

Respondents were asked to select which specific foot care activities they perform. The most common activity was using doctor-prescribed orthotics for shoes, reported by 58.5. This was followed by having a cleaning regimen for feet (54.9%) and using over-the-counter insoles for shoes (54.0%). The least common practice was doing leg/ankle/foot exercises (39.6%). The detailed breakdown of responses is provided in Table 11.

Table 11: Respondents' Selected Foot Care Activities

Foot Care Activity	Yes n (%)	No n (%)
Keep toenails trimmed	468 (46.8)	532 (53.2)
Apply over-the-counter lotions/creams to your feet	490 (49.0)	510 (51.0)
Purchase supportive/comfortable footwear	549 (54.9)	451 (45.1)
Have a cleaning regimen for feet	493 (49.3)	507 (50.7)
Do leg/ankle/foot exercises	454 (45.4)	546 (54.6)
Use over-the-counter insoles for shoes	396 (39.6)	604 (60.4)
Reduce the amount of time standing	426 (42.6)	574 (57.4)
Use an at-home foot bath	585 (58.5)	415 (41.5)
Use doctor prescribed orthotics for shoes	540 (54.0)	460 (46.0)
Other	0 (0.0)	1000 (100.0)
None of the above	0 (0.0)	1000 (100.0)

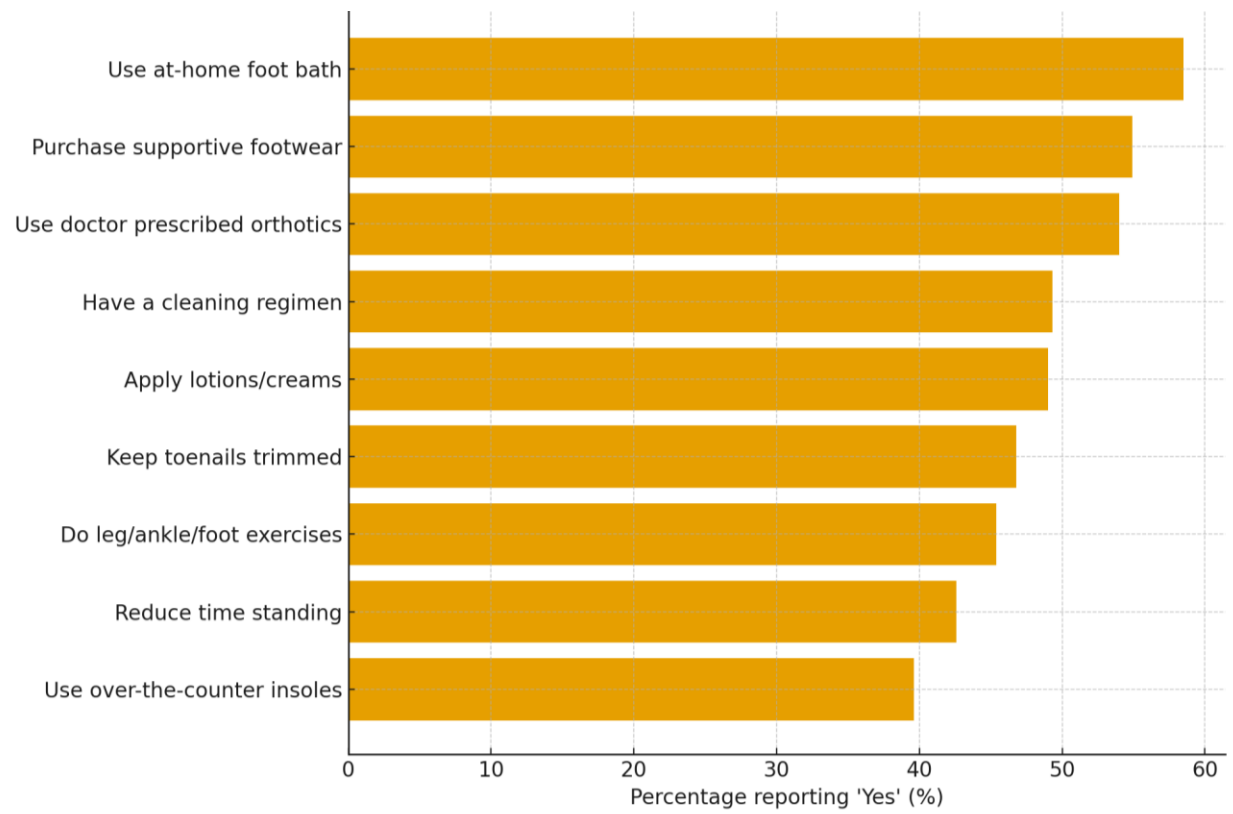


Figure 10: Bar Chart Showing Respondents' Selected Foot Care Activities

4.1.12 Respondents' Desire for More Information on Foot Health

Respondents were asked to rate how well statements about seeking more information on foot health described them. The statement "I want to know more about how to take care of my feet" was most frequently described as 'somewhat well' by 46.2% of the respondents. The statement "I want to know where to find the best podiatrist in my area" was most frequently described as 'not at all' (41.4%). Detailed responses are shown in Table 12.

Table 12: Respondents' Desire for More Information on Foot Health

Statement	Not at all n (%)	Somewhat well n (%)	Perfectly well n (%)
I want to know more about how to take care of my feet	291 (29.1)	462 (46.2)	247 (24.7)
I want to know where to find the best podiatrist in my area	414 (41.4)	246 (24.6)	340 (34.0)
I want to know where to seek help for foot pains/ailments I experience	291 (29.1)	382 (38.2)	327 (32.7)

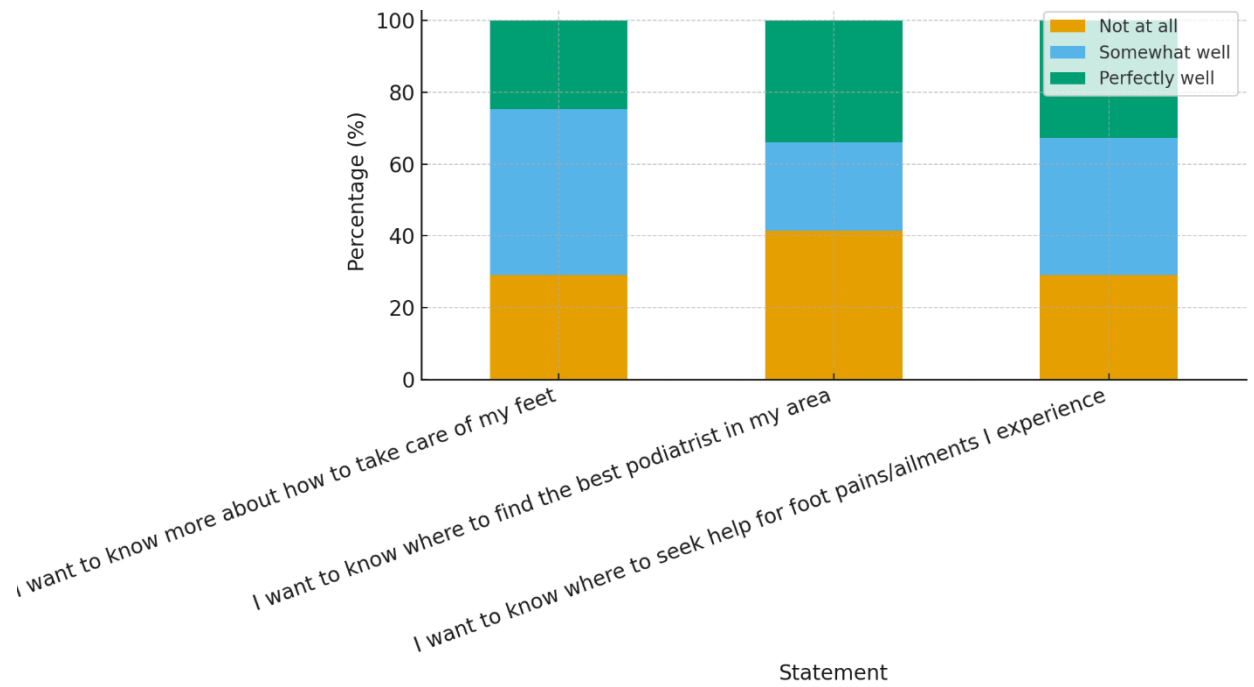


Figure 11: Bar Chart Showing Respondents' Desire for More Information on Foot Health

4.1.13 Respondents' Preferred Sources of Information for Foot Health

When asked where they would look for information about foot health, the most selected source was to look for information on specific health-information websites (e.g., WebMD), chosen by 57.5 of respondents. This was followed by talking to a primary care physician (52.2%) and looking for information using an online search engine (e.g., Google) (51.8%). The least popular option was to look for information on online forums, selected by 41.5%. A detailed summary is provided in Table 13.

Table 13: Respondents' Preferred Sources of Information for Foot Health

Source of Information	Yes n (%)	No n (%)
Talk to a primary care physician	522 (52.2)	478 (47.8)
Talk to a physiotherapist	451 (45.1)	549 (54.9)
Look for information using an online search engine (e.g., Google)	518 (51.8)	482 (48.2)
Look for information on specific health-information websites (e.g., WebMD)	575 (57.5)	425 (42.5)
Talk to a podiatrist	504 (50.4)	496 (49.6)
Talk to a pharmacist	471 (47.1)	529 (52.9)
Look for information on online forums	415 (41.5)	585 (58.5)
Ask a friend or family member	491 (49.1)	509 (50.9)
None of the above	0 (0.0)	1000 (100.0)
Other	0 (0.0)	1000 (100.0)

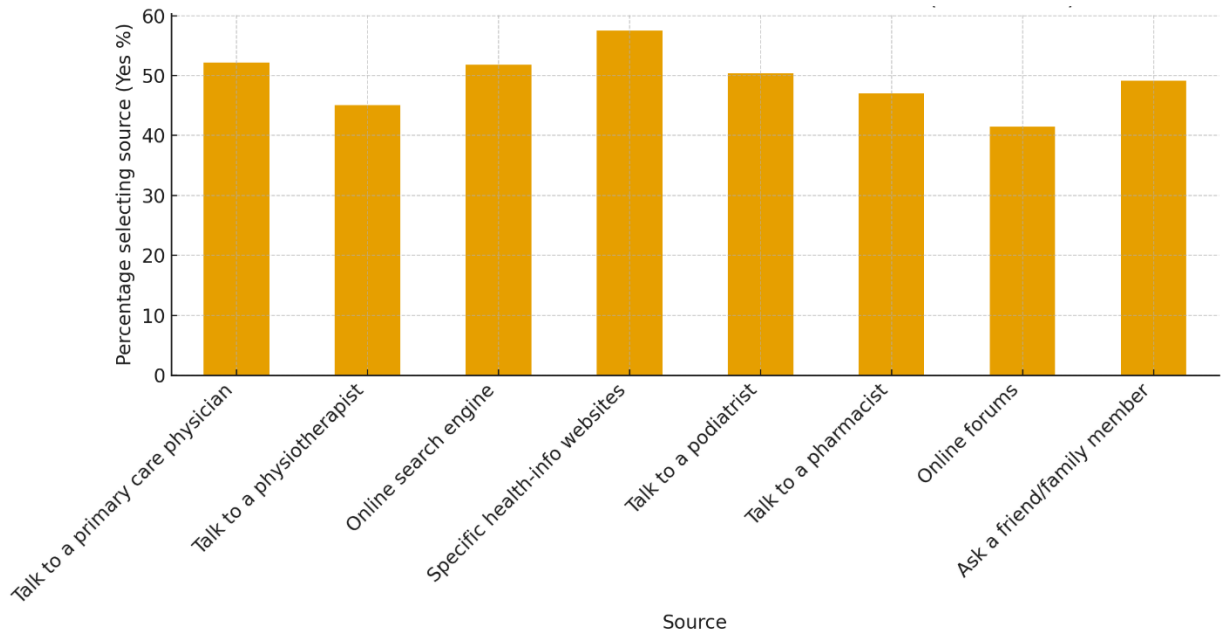


Figure 12: Bar Chart Showing Respondents' Preferred Sources of Information for Foot Health

4.2: Associations with Knowledge Towards Foot Health

4.2.1 Association between Age and Knowledge Towards Foot Health

The Chi-Square test results showed statistically significant associations between age and all the items regarding knowledge toward foot health ($p < 0.001$). Table 14

Table 14: Association between Age and Knowledge Towards Foot Health

Variable	Response	18-25 n (%)	26-35 n (%)	36-45 n (%)	46-55 n (%)	56-65 n (%)	>65 n (%)	χ^2	p
Consideration for foot health	A lot of thought	11 (7)	42 (27)	59 (44)	30 (15)	31 (16)	59 (38)	195.269	<0.001
	Some thought	86 (53)	28 (18)	38 (28)	17 (9)	74 (37)	45 (29)		
	No thought at all	64 (40)	88 (56)	37 (28)	146 (76)	94 (47)	51 (33)		
Feet can be an important indicator of other serious health problems	Disagree	112 (70)	49 (31)	69 (51)	92 (48)	70 (35)	80 (52)	147.189	<0.001
	Neutral	38 (24)	98 (62)	36 (27)	57 (30)	60 (30)	28 (18)		
	Agree	11 (7)	11 (7)	29 (22)	44 (23)	69 (35)	47 (30)		
Feet are incredibly complex and require expert care by a podiatrist	Disagree	91 (56)	48 (30)	48 (36)	64 (33)	55 (28)	35 (23)	69.506	<0.001
	Neutral	47 (29)	82 (52)	43 (32)	68 (35)	94 (47)	70 (45)		
	Agree	23 (14)	28 (18)	43 (32)	61 (32)	50 (25)	50 (32)		

4.2.2 Association between Gender and Knowledge Towards Foot Health

The Chi-Square test showed significant associations between gender and all knowledge items ($p < 0.05$). Table 15

Table 15: Association between Gender and Knowledge Towards Foot Health

Variable	Response	Male n (%)	Female n (%)	χ^2	p-value
Consideration for foot health	A lot of thought	136 (23)	96 (24)	30.543	<0.001
	Some thought	137 (23)	151 (38)		
	No thought at all	325 (54)	155 (39)		
Feet can be an important indicator of other serious health problems	Disagree	268 (45)	204 (51)	41.073	<0.001
	Neutral	232 (39)	85 (21)		
	Agree	98 (16)	113 (28)		
Feet are incredibly complex and require expert care by a podiatrist	Disagree	223 (37)	118 (29)	6.741	0.034
	Neutral	230 (38)	174 (43)		
	Agree	145 (24)	110 (27)		

4.2.3 Association between Marital Status and Knowledge Towards Foot Health

The Chi-Square test results showed that statistically significant association was found between marital status and all the tested items regarding knowledge towards foot health ($p < 0.001$). Table 16

Table 16: Association between Marital Status and Respondents' Knowledge Towards Foot Health

Variable	Response	Single n (%)	Married n (%)	Divorced n (%)	Widowed n (%)	Separated n (%)	χ^2	p
Consideration for foot health	A lot of thought	20 (7)	77 (28)	0 (0)	88 (46)	47 (30)	183.640	<0.001
	Some thought	122 (41)	88 (32)	27 (36)	45 (23)	6 (4)		
	No thought at all	155 (52)	113 (41)	48 (64)	60 (31)	104 (66)		
Feet can be an important indicator of other serious health problems	Disagree	179 (60)	134 (48)	26 (35)	86 (44)	47 (30)	115.037	<0.001
	Neutral	74 (25)	118 (42)	33 (44)	34 (18)	58 (37)		
	Agree	44 (15)	26 (9)	16 (21)	73 (38)	52 (33)		
Feet are incredibly complex and require expert care by a podiatrist	Disagree	101 (34)	125 (45)	22 (29)	51 (26)	42 (27)	61.718	<0.001
	Neutral	109 (37)	115 (41)	22 (29)	73 (38)	85 (54)		
	Agree	87 (29)	38 (14)	31 (41)	69 (36)	30 (19)		

4.2.4 Association between Level of Education and Respondents' Knowledge Towards Foot Health

The Chi-Square test results showed that there was statistically significant association between knowledge and respondents' level of education ($p < 0.001$). Table 17

Table 17: Association between Level of Education and Respondents' Knowledge Towards Foot Health

Variable	Response	No Formal n (%)	Primary n (%)	Secondary n (%)	University n (%)	χ^2	p-value
Consideration for foot health	A lot of thought	24 (14)	56 (35)	60 (30)	92 (20)	64.977	<0.001
	Some thought	58 (34)	55 (34)	22 (11)	153 (33)		
	No thought at all	90 (52)	51 (32)	120 (59)	219 (47)		
Feet can be an important indicator of other serious health problems	Disagree	79 (46)	68 (42)	115 (57)	210 (45)	52.050	<0.001
	Neutral	31 (18)	51 (32)	66 (33)	169 (36)		
	Agree	62 (36)	43 (27)	21 (10)	85 (18)		
Feet are incredibly complex and require expert care by a podiatrist	Disagree	66 (38)	17 (11)	61 (30)	197 (42)	124.360	<0.001
	Neutral	59 (34)	54 (33)	93 (46)	198 (43)		
	Agree	47 (27)	91 (56)	48 (24)	69 (15)		

4.2.5 Association between Occupational Status and Respondents' Knowledge Towards Foot Health

There was no significant association between occupational status and any of the tested items regarding knowledge towards foot health ($p > 0.05$). Table 18

Table 18: Association between Occupational Status and Respondents' Knowledge Towards Foot Health

Variable	Response	Unemployed n (%)	Self-Emp n (%)	Civil Servant n (%)	Private Emp n (%)	Retired n (%)	χ^2	p-value
Consideration for foot health	A lot of thought	14 (18)	87 (22)	41 (22)	71 (28)	19 (21)	9.821	0.278
	Some thought	27 (34)	121 (31)	44 (24)	66 (26)	30 (33)		
	No thought at all	39 (49)	181 (47)	99 (54)	121 (47)	40 (44)		
Feet can be an important indicator of serious issues	Disagree	37 (46)	189 (48)	91 (50)	116 (45)	39 (44)	4.021	0.855
	Neutral	23 (29)	125 (32)	59 (32)	82 (32)	28 (32)		
	Agree	20 (25)	75 (19)	34 (19)	60 (23)	22 (25)		
Feet are complex and require expert care by a podiatrist	Disagree	26 (32)	141 (36)	66 (37)	78 (30)	30 (34)	5.820	0.667
	Neutral	28 (35)	156 (40)	76 (42)	109 (42)	35 (39)		
	Agree	26 (32)	92 (24)	42 (23)	71 (28)	24 (27)		

4.2.6 Association between BMI and Respondents' Knowledge Towards Foot Health

The Chi-Square analysis revealed significant associations between BMI category and all tested items regarding knowledge towards foot health ($p < 0.001$). Table 19

Table 19: Association between BMI and Respondents' Knowledge Towards Foot Health

Variable	Response	Underweight n (%)	Normal n (%)	Overweight n (%)	Obese n (%)	χ^2	p-value
Consideration for foot health	A lot of thought	0 (0)	170 (26)	54 (18)	8 (36)	142.484	<0.001
	Some thought	14 (74)	116 (18)	158 (51)	0 (0)		
	No thought at all	5 (26)	364 (56)	97 (31)	14 (64)		
Feet can be an important indicator of other serious health problems	Disagree	0 (0)	303 (47)	161 (52)	8 (36)	87.507	<0.001
	Neutral	0 (0)	217 (33)	86 (28)	14 (64)		
	Agree	19 (100)	130 (20)	62 (20)	0 (0)		
Feet are incredibly complex and require expert care by a podiatrist	Disagree	5 (26)	210 (32)	112 (36)	14 (64)	27.843	<0.001
	Neutral	14 (74)	266 (41)	124 (40)	0 (0)		
	Agree	0 (0)	174 (27)	73 (24)	8 (36)		

4.3 Associations between Sociodemographic Variables and Respondents' Attitudes Towards Foot Health

4.3.1 Association between Age and Respondents' Attitudes Towards Foot Health

The Chi-Square test results showed that statistically significant association was found between age and all the tested items regarding attitude towards foot health ($p < 0.001$). Table 20

Table 20: Association between Age and Respondents' Attitudes Towards Foot Health

Variable	Response	18-25 n (%)	26-35 n (%)	36-45 n (%)	46-55 n (%)	56-65 n (%)	>65 n (%)	χ^2	p
Importance of foot care	Not at All Important	20 (12)	68 (43)	32 (24)	41 (21)	72 (36)	70 (45)	194.951	<0.001
	Slightly Important	70 (44)	39 (25)	9 (7)	99 (51)	20 (10)	43 (28)		
	Very Important	71 (44)	51 (32)	93 (69)	53 (27)	107 (54)	42 (27)		
It is important to pay attention to feet and get them the care they need	Disagree	66 (41)	34 (22)	33 (25)	42 (22)	65 (33)	36 (23)	60.466	<0.001
	Neutral	52 (32)	107 (68)	62 (46)	91 (47)	86 (43)	69 (44)		
	Agree	43 (27)	17 (11)	39 (29)	60 (31)	48 (24)	50 (32)		
Foot health is fundamental to your overall well-being	Disagree	36 (22)	29 (18)	70 (52)	39 (20)	55 (28)	48 (31)	90.689	<0.001
	Neutral	49 (30)	43 (27)	34 (25)	58 (30)	91 (46)	41 (26)		
	Agree	76 (47)	86 (54)	30 (22)	96 (50)	53 (27)	66 (43)		

4.3.2 Association between Gender and Respondents' Attitudes Towards Foot Health

The Chi-Square test showed significant associations between gender and most tested attitude items ($p < 0.05$), except for the attitude that It is important to pay attention to feet and get them the care they need, which showed no significant association ($p = 0.179$). Table

21

Table 21: Association between Gender and Respondents' Attitudes Towards Foot Health

Variable	Response	Male n (%)	Female n (%)	χ^2	p-value
Importance of foot care	Not at All Important	146 (24)	157 (39)	31.222	<0.001
	Slightly Important	165 (28)	115 (29)		
	Very Important	287 (48)	130 (32)		
It is important to pay attention to feet and get them the care they need	Disagree	165 (28)	111 (28)	3.437	0.179
	Neutral	291 (49)	176 (44)		
	Agree	142 (24)	115 (29)		
Foot health is fundamental to your overall well-being	Disagree	184 (31)	93 (23)	18.260	<0.001
	Neutral	159 (27)	157 (39)		
	Agree	255 (43)	152 (38)		

4.3.3 Association between Marital Status and Respondents' Attitudes Towards Foot Health

The Chi-Square test results showed that statistically significant association was found between marital status and all the tested items regarding attitude towards foot health ($p < 0.001$ for all). Table 22

Table 22: Association between Marital Status and Respondents' Attitudes Towards Foot Health

Variable	Response	Single n (%)	Married n (%)	Divorced n (%)	Widowed n (%)	Separated n (%)	χ^2	p-value
Importance of foot care	Not at All Important	66 (22)	106 (38)	11 (15)	103 (53)	17 (11)	167.193	<0.001
	Slightly Important	81 (27)	71 (26)	7 (9)	35 (18)	86 (55)		
	Very Important	150 (51)	101 (36)	57 (76)	55 (28)	54 (35)		
It is important to pay attention to feet and get them the care they need	Disagree	80 (27)	60 (22)	13 (17)	76 (39)	47 (30)	56.688	<0.001
	Neutral	138 (47)	161 (58)	51 (68)	60 (31)	57 (36)		
	Agree	79 (27)	57 (21)	11 (15)	57 (29)	53 (34)		
Foot health is fundamental to your overall well- being	Disagree	113 (38)	28 (10)	24 (32)	30 (15)	82 (52)	125.204	<0.001
	Neutral	90 (30)	109 (39)	23 (31)	69 (36)	25 (16)		
	Agree	94 (32)	141 (51)	28 (37)	94 (48)	50 (32)		

4.3.4 Association between Level of Education and Respondents' Attitudes Towards Foot Health

The Chi-Square test results showed that all items showed a significant association with the respondents' level of education ($p < 0.001$).

Table 23

Table 23: Association between Level of Education and Respondents' Attitudes Towards Foot Health

Variable	Response	No Formal n (%)	Primary n (%)	Secondary n (%)	University n (%)	χ^2	p-value
Importance of foot care	Not at All Important	70 (41)	60 (37)	33 (16)	140 (30)	71.591	<0.001
	Slightly Important	63 (37)	16 (10)	73 (36)	128 (28)		
	Very Important	39 (23)	86 (53)	96 (48)	196 (42)		
Pay attention to feet and get them the care they need	Disagree	71 (41)	26 (16)	50 (25)	129 (28)	30.382	<0.001
	Neutral	72 (42)	87 (54)	100 (49)	208 (45)		
	Agree	29 (17)	49 (30)	52 (26)	127 (27)		
Foot health is fundamental to your overall well-being	Disagree	63 (37)	34 (21)	94 (46)	86 (19)	109.815	<0.001
	Neutral	56 (33)	85 (53)	40 (20)	135 (29)		
	Agree	53 (31)	43 (27)	68 (34)	243 (52)		

4.3.5 Association between Occupational Status and Respondents' Attitudes Towards Foot Health

The Chi-Square test results showed that there was no significant association between occupational status and most of the items regarding attitude towards foot health ($p > 0.05$), except for the attitude that Foot health is fundamental to your overall well-being ($p=0.004$). Table 24

Table 24: Association between Occupational Status and Respondents' Attitudes Towards Foot Health

Variable	Response	Unemployed n (%)	Self-Emp n (%)	Civil Servant n (%)	Private Emp n (%)	Retired n (%)	χ^2	p-value
Importance of foot care	Not at All Important	18 (23)	119 (31)	52 (28)	87 (34)	27 (29)	10.379	0.239
	Slightly Important	30 (38)	98 (25)	54 (29)	77 (30)	21 (24)		
	Very Important	32 (40)	172 (44)	78 (42)	94 (37)	41 (47)		
Pay attention to feet and get them the care they need	Disagree	21 (26)	106 (27)	52 (28)	73 (28)	24 (27)	9.071	0.336
	Neutral	40 (50)	199 (51)	81 (44)	107 (42)	40 (45)		
	Agree	19 (24)	84 (22)	51 (28)	78 (30)	25 (28)		
Foot health is fundamental to your overall well- being	Disagree	30 (38)	92 (24)	62 (34)	74 (29)	19 (21)	22.697	0.004
	Neutral	16 (20)	136 (35)	58 (32)	68 (26)	38 (42)		
	Agree	34 (42)	161 (41)	64 (35)	116 (45)	32 (36)		

4.3.6 Association between BMI and Respondents' Attitudes Towards Foot Health

The Chi-Square test results revealed statistically significant associations between BMI and all items regarding attitudes towards foot health ($p < 0.001$). Table 25

Table 25: Association between BMI and Respondents' Attitudes Towards Foot Health

Variable	Response	Underweight n (%)	Normal n (%)	Overweight n (%)	Obese n (%)	χ^2	p-value
Importance of foot care	Not at All Important	14 (74)	196 (30)	93 (30)	0 (0)	28.941	<0.001
	Slightly Important	0 (0)	190 (29)	82 (26)	8 (36)		
	Very Important	5 (26)	264 (41)	134 (43)	14 (64)		
Pay attention to feet and get them the care they need	Disagree	19 (100)	161 (25)	96 (31)	0 (0)	85.547	<0.001
	Neutral	0 (0)	296 (46)	149 (48)	22 (100)		
	Agree	0 (0)	193 (30)	64 (21)	0 (0)		
Foot health is fundamental to your overall well-being	Disagree	5 (26)	190 (29)	82 (26)	0 (0)	45.941	<0.001
	Neutral	0 (0)	208 (32)	108 (35)	0 (0)		
	Agree	14 (74)	252 (39)	119 (38)	22 (100)		

4.4 Association Between Sociodemographic Variables and Impact of Foot Pain

4.4.1 Association between Age and Impact of Foot Pain among Respondents

The Chi-Square test results showed that there were statistically significant associations between age and all the items regarding the impact of foot and ankle pain ($p < 0.001$). Table 26

Table 26: Association between Age and Impact of Foot Pain among Respondent

Variable	Response	18-25 n (%)	26-35 n (%)	36-45 n (%)	46-55 n (%)	56-65 n (%)	>65 n (%)	χ^2	p-value
Walking	No	56 (35)	115 (73)	65 (49)	94 (49)	97 (49)	81 (52)	48.170	<0.001
	Yes	105 (65)	43 (27)	69 (51)	99 (51)	102 (51)	74 (48)		
Standing	No	93 (58)	94 (60)	63 (47)	96 (50)	141 (71)	91 (59)	25.671	<0.001
	Yes	68 (42)	64 (40)	71 (53)	97 (50)	58 (29)	64 (41)		
Exercising	No	102 (63)	45 (28)	103 (77)	109 (56)	123 (62)	91 (59)	78.844	<0.001
	Yes	59 (37)	113 (72)	31 (23)	84 (44)	76 (38)	64 (41)		
Sleeping	No	77 (48)	35 (22)	50 (37)	94 (49)	109 (55)	72 (46)	45.515	<0.001
	Yes	84 (52)	123 (78)	84 (63)	99 (51)	90 (45)	83 (54)		
Work	No	105 (65)	78 (49)	55 (41)	85 (44)	63 (32)	68 (44)	42.986	<0.001
	Yes	56 (35)	80 (51)	79 (59)	108 (56)	136 (68)	87 (56)		
Playing with children	No	66 (41)	79 (50)	74 (55)	72 (37)	105 (53)	88 (57)	21.578	0.001
	Yes	95 (59)	79 (50)	60 (45)	121 (63)	94 (47)	67 (43)		
Travel	No	89 (55)	80 (51)	63 (47)	99 (51)	95 (48)	92 (59)	6.973	0.223
	Yes	72 (45)	78 (49)	71 (53)	94 (49)	104 (52)	63 (41)		
Exercise more	Not at all	44 (27)	30 (19)	76 (57)	40 (21)	77 (39)	69 (45)	126.762	<0.001
	Somewhat well	83 (52)	71 (45)	55 (41)	69 (36)	55 (28)	40 (26)		
	Perfectly well	34 (21)	57 (36)	3 (2)	84 (44)	67 (34)	46 (30)		
Walk more	Not at all	78 (48)	35 (22)	37 (28)	43 (22)	77 (39)	42 (27)	119.320	<0.001
	Somewhat well	30 (19)	46 (29)	56 (42)	78 (40)	40 (20)	92 (59)		
	Perfectly well	53 (33)	77 (49)	41 (31)	72 (37)	82 (41)	21 (14)		
More activities	Not at all	50 (31)	87 (55)	54 (40)	86 (45)	76 (38)	45 (29)	96.463	<0.001
	Somewhat well	67 (42)	39 (25)	80 (60)	54 (28)	75 (38)	52 (34)		
	Perfectly well	44 (27)	32 (20)	0 (0)	53 (27)	48 (24)	58 (37)		

4.4.2 Association between Gender and Impact of Foot Pain

The Chi-Square test results showed statistically significant associations were found between gender and several items related to the impact of foot pain, including pain inhibiting walking ($p < 0.001$), sleeping ($p < 0.001$), working ($p < 0.001$), and playing with children ($p < 0.001$). Additionally, gender was significantly associated with the statement "I would exercise more" ($p = 0.031$). Table

27

Table 27: Association between Gender and Impact of Foot Pain and Impact of Foot Pain

Variable	Response	Male n (%)	Female n (%)	χ^2	p-value
Walking	No	337 (56)	171 (43)	18.363	<0.001
	Yes	261 (44)	231 (57)		
Standing	No	355 (59)	223 (55)	1.493	0.222
	Yes	243 (41)	179 (45)		
Exercising	No	329 (55)	244 (61)	3.170	0.075
	Yes	269 (45)	158 (39)		
Sleeping	No	298 (50)	139 (35)	22.740	<0.001
	Yes	300 (50)	263 (65)		
Work	No	299 (50)	155 (39)	12.698	<0.001
	Yes	299 (50)	247 (61)		
Playing with children	No	324 (54)	160 (40)	19.903	<0.001
	Yes	274 (46)	242 (60)		
Travel	No	325 (54)	193 (48)	3.868	0.049
	Yes	273 (46)	209 (52)		
Exercise more	Not at all	186 (31)	150 (37)	6.928	0.031
	Somewhat well	221 (37)	152 (38)		
	Perfectly well	191 (32)	100 (25)		
Walk more	Not at all	182 (30)	130 (32)	3.222	0.200
	Somewhat well	196 (33)	146 (36)		
	Perfectly well	220 (37)	126 (31)		
More activities	Not at all	248 (41)	150 (37)	6.365	0.041
	Somewhat well	226 (38)	141 (35)		
	Perfectly well	124 (21)	111 (28)		

4.4.3 Association between Marital Status and Impact of Foot Pain

The analysis revealed significant associations between marital status and all the tested items regarding the impact of foot and ankle pain ($p < 0.001$ for all). Table 28

Table 28: Association between Marital Status and Impact of Foot Pain

Variable	Response	Single n (%)	Married n (%)	Divorced n (%)	Widowed n (%)	Separated n (%)	χ^2	p-value
Walking	No	85 (29)	155 (56)	62 (83)	103 (53)	103 (66)	105.943	<0.001
	Yes	212 (71)	123 (44)	13 (17)	90 (47)	54 (34)		
Standing	No	178 (60)	169 (61)	58 (77)	84 (44)	89 (57)	29.513	<0.001
	Yes	119 (40)	109 (39)	17 (23)	109 (56)	68 (43)		
Exercising	No	181 (61)	141 (51)	45 (60)	135 (70)	71 (45)	28.733	<0.001
	Yes	116 (39)	137 (49)	30 (40)	58 (30)	86 (55)		
Sleeping	No	150 (51)	86 (31)	34 (45)	94 (49)	73 (46)	26.547	<0.001
	Yes	147 (49)	192 (69)	41 (55)	99 (51)	84 (54)		
Work	No	150 (51)	98 (35)	9 (12)	111 (58)	86 (55)	65.418	<0.001
	Yes	147 (49)	180 (65)	66 (88)	82 (42)	71 (45)		
Playing with children	No	102 (34)	159 (57)	49 (65)	116 (60)	58 (37)	59.555	<0.001
	Yes	195 (66)	119 (43)	26 (35)	77 (40)	99 (63)		
Travel	No	179 (60)	126 (45)	34 (45)	83 (43)	96 (61)	25.931	<0.001
	Yes	118 (40)	152 (55)	41 (55)	110 (57)	61 (39)		
Exercise more	Not at all	75 (25)	64 (23)	59 (79)	93 (48)	45 (29)	148.191	<0.001
	Somewhat well	125 (42)	149 (54)	11 (15)	43 (22)	45 (29)		
	Perfectly well	97 (33)	65 (23)	5 (7)	57 (30)	67 (43)		
Walk more	Not at all	94 (32)	76 (27)	26 (35)	67 (35)	49 (31)	32.880	<0.001
	Somewhat well	109 (37)	85 (31)	12 (16)	82 (42)	54 (34)		
	Perfectly well	94 (32)	117 (42)	37 (49)	44 (23)	54 (34)		
More activities	Not at all	96 (32)	127 (46)	30 (40)	76 (39)	69 (44)	41.194	<0.001
	Somewhat well	149 (50)	74 (27)	31 (41)	67 (35)	46 (29)		
	Perfectly well	52 (18)	77 (28)	14 (19)	50 (26)	42 (27)		

4.4.4 Association between Level of Education and Impact of Foot Pain

Significant associations were found between level of education and several items, including pain inhibiting standing ($p=0.002$), exercising ($p < 0.001$), and working ($p < 0.001$), as well as with the statements "I would exercise more" ($p < 0.001$) and "I would walk more" ($p < 0.001$). Table 29

Table 29: Association between Level of Education and Impact of Foot Pain

Variable	Response	No Formal n (%)	Primary n (%)	Secondary n (%)	University n (%)	χ^2	p-value
Walking	No	87 (51)	87 (54)	95 (47)	239 (52)	1.792	0.617
	Yes	85 (49)	75 (46)	107 (53)	225 (48)		
Standing	No	100 (58)	105 (65)	94 (47)	279 (60)	14.818	0.002
	Yes	72 (42)	57 (35)	108 (53)	185 (40)		
Exercising	No	118 (69)	78 (48)	102 (50)	275 (59)	19.086	<0.001
	Yes	54 (31)	84 (52)	100 (50)	189 (41)		
Sleeping	No	71 (41)	72 (44)	105 (52)	189 (41)	7.736	0.052
	Yes	101 (59)	90 (56)	97 (48)	275 (59)		
Work	No	73 (42)	45 (28)	83 (41)	253 (55)	38.005	<0.001
	Yes	99 (58)	117 (72)	119 (59)	211 (45)		
Playing with children	No	73 (42)	113 (70)	86 (43)	212 (46)	36.131	<0.001
	Yes	99 (58)	49 (30)	116 (57)	252 (54)		
Travel	No	78 (45)	89 (55)	92 (46)	259 (56)	9.674	0.022
	Yes	94 (55)	73 (45)	110 (54)	205 (44)		
Exercise more	Not at all	49 (28)	64 (40)	102 (50)	121 (26)	55.825	<0.001
	Somewhat well	74 (43)	70 (43)	46 (23)	183 (39)		
	Perfectly well	49 (28)	28 (17)	54 (27)	160 (34)		
Walk more	Not at all	45 (26)	51 (31)	46 (23)	170 (37)	98.961	<0.001
	Somewhat well	80 (47)	80 (49)	35 (17)	147 (32)		
	Perfectly well	47 (27)	31 (19)	121 (60)	147 (32)		
More activities	Not at all	58 (34)	55 (34)	97 (48)	188 (41)	21.486	0.002
	Somewhat well	62 (36)	56 (35)	63 (31)	186 (40)		
	Perfectly well	52 (30)	51 (31)	42 (21)	90 (19)		

4.4.5 Association between Occupational Status and Impact of Foot Pain

The analysis showed a significant association between occupational status and pain inhibiting standing ($p=0.011$). No other significant associations were found for the other tested items. Table 30

Table 30: Association between Occupational Status and Impact of Foot Pain

Variable	Response	Unemployed n (%)	Self-Emp n (%)	Civil Servant n (%)	Private Emp n (%)	Retired n (%)	χ^2	p-value
Walking	No	44 (55)	190 (49)	89 (48)	143 (55)	42 (47)	4.269	0.371
	Yes	36 (45)	199 (51)	95 (52)	115 (45)	47 (53)		
Standing	No	46 (58)	249 (64)	94 (51)	135 (52)	54 (61)	13.025	0.011
	Yes	34 (42)	140 (36)	90 (49)	123 (48)	35 (39)		
Exercising	No	38 (48)	223 (57)	99 (54)	157 (61)	56 (63)	6.540	0.162
	Yes	42 (52)	166 (43)	85 (46)	101 (39)	33 (37)		
Sleeping	No	35 (44)	181 (47)	79 (43)	107 (41)	35 (39)	2.522	0.641
	Yes	45 (56)	208 (53)	105 (57)	151 (59)	54 (61)		
Work	No	29 (36)	178 (46)	91 (50)	124 (48)	32 (36)	7.884	0.096
	Yes	51 (64)	211 (54)	93 (50)	134 (52)	57 (64)		
Playing with children	No	37 (46)	192 (49)	89 (48)	127 (49)	39 (44)	1.109	0.893
	Yes	43 (54)	197 (51)	95 (52)	131 (51)	50 (56)		
Travel	No	41 (51)	209 (54)	80 (43)	132 (51)	56 (63)	10.143	0.038
	Yes	39 (49)	180 (46)	104 (57)	126 (49)	33 (37)		
Exercise more	Not at all	24 (30)	136 (35)	53 (29)	87 (34)	36 (40)	7.551	0.479
	Somewhat well	35 (44)	147 (38)	67 (36)	96 (37)	28 (31)		
	Perfectly well	21 (26)	106 (27)	64 (35)	75 (29)	25 (28)		
Walk more	Not at all	25 (31)	130 (33)	56 (30)	70 (27)	31 (35)	9.802	0.279
	Somewhat well	29 (36)	127 (33)	53 (29)	104 (40)	29 (33)		
	Perfectly well	26 (32)	132 (34)	75 (41)	84 (33)	29 (33)		
More activities	Not at all	28 (35)	154 (40)	82 (45)	101 (39)	33 (37)	6.804	0.558
	Somewhat well	29 (36)	151 (39)	62 (34)	88 (34)	37 (42)		
	Perfectly well	23 (29)	84 (22)	40 (22)	69 (27)	19 (21)		

4.4.6 Association between BMI and Impact of Foot Pain among Respondents

The Chi-Square test results revealed significant associations between BMI and all tested items regarding the impact of foot and ankle pain ($p < 0.001$ for all). Table 31

Table 31: Association between BMI and Impact of Foot Pain

Variable	Response	Underweight n (%)	Normal n (%)	Overweight n (%)	Obese n (%)	χ^2	p-value
Walking	No	5 (26)	326 (50)	155 (50)	22 (100)	26.023	<0.001
	Yes	14 (74)	324 (50)	154 (50)	0 (0)		
Standing	No	14 (74)	320 (49)	222 (72)	22 (100)	62.585	<0.001
	Yes	5 (26)	330 (51)	87 (28)	0 (0)		
Exercising	No	19 (100)	355 (55)	191 (62)	8 (36)	22.586	<0.001
	Yes	0 (0)	295 (45)	118 (38)	14 (64)		
Sleeping	No	5 (26)	256 (39)	168 (54)	8 (36)	22.031	<0.001
	Yes	14 (74)	394 (61)	141 (46)	14 (64)		
Work	No	5 (26)	307 (47)	134 (43)	8 (36)	4.911	0.178
	Yes	14 (74)	343 (53)	175 (57)	14 (64)		
Playing with children	No	0 (0)	323 (50)	139 (45)	22 (100)	43.155	<0.001
	Yes	19 (100)	327 (50)	170 (55)	0 (0)		
Travel	No	19 (100)	354 (54)	131 (42)	14 (64)	31.706	<0.001
	Yes	0 (0)	296 (46)	178 (58)	8 (36)		
Exercise more	Not at all	0 (0)	231 (36)	91 (29)	14 (64)	62.560	<0.001
	Somewhat well	0 (0)	238 (37)	127 (41)	8 (36)		
	Perfectly well	19 (100)	181 (28)	91 (29)	0 (0)		
Walk more	Not at all	0 (0)	177 (27)	127 (41)	8 (36)	54.747	<0.001
	Somewhat well	14 (74)	220 (34)	108 (35)	0 (0)		
	Perfectly well	5 (26)	253 (39)	74 (24)	14 (64)		
More activities	Not at all	5 (26)	255 (39)	124 (40)	14 (64)	25.386	<0.001
	Somewhat well	14 (74)	224 (34)	121 (39)	8 (36)		
	Perfectly well	0 (0)	171 (26)	64 (21)	0 (0)		

4.5 Association Between Sociodemographic Variables and Prevalence of Foot Ailments among Respondents

4.5.1 Association between Age and Prevalence of Foot Ailments among Respondents

The Chi-Square test results showed statistically significant associations between age and the experience of all foot ailments listed ($p < 0.001$ for all). Additionally, a significant association was found between age and the frequency of foot pain ($p < 0.001$). Table 32

Table 32: Association between Age and Prevalence of Foot Ailments among Respondents

Variable	Response	18-25 n (%)	26-35 n (%)	36-45 n (%)	46-55 n (%)	56-65 n (%)	>65 n (%)	χ^2	p
Nail issues	No	94 (19)	36 (7)	88 (18)	46 (9)	89 (18)	98 (20)	121.986	<0.001
	Yes	67 (12)	122 (22)	46 (8)	147 (27)	110 (20)	57 (10)		
Sweaty feet	No	112 (22)	76 (15)	37 (7)	126 (25)	96 (19)	75 (15)	68.386	<0.001
	Yes	49 (10)	82 (17)	97 (20)	67 (14)	103 (21)	80 (17)		
Heel pain	No	72 (14)	102 (20)	33 (7)	84 (17)	109 (22)	71 (14)	52.651	<0.001
	Yes	89 (17)	56 (11)	101 (19)	109 (21)	90 (17)	84 (16)		
Ball of feet pain	No	21 (4)	57 (11)	82 (15)	111 (21)	105 (20)	59 (11)	105.609	<0.001
	Yes	140 (25)	101 (18)	52 (9)	82 (15)	94 (17)	96 (17)		
Pain from heels	No	99 (20)	57 (11)	59 (12)	90 (18)	111 (22)	90 (18)	30.093	<0.001
	Yes	62 (12)	101 (20)	75 (15)	103 (21)	88 (18)	65 (13)		
Bunions	No	79 (15)	87 (16)	80 (15)	130 (24)	98 (18)	69 (13)	24.676	<0.001
	Yes	82 (18)	71 (16)	54 (12)	63 (14)	101 (22)	86 (19)		
Bone spurs	No	99 (20)	86 (17)	75 (15)	86 (17)	118 (23)	40 (8)	57.048	<0.001
	Yes	62 (12)	72 (15)	59 (12)	107 (22)	81 (16)	115 (23)		
Tendinitis	No	32 (6)	57 (11)	90 (17)	100 (19)	104 (20)	106 (20)	107.676	<0.001
	Yes	129 (25)	101 (20)	44 (9)	93 (18)	95 (19)	49 (10)		
Stress fractures	No	71 (14)	64 (12)	81 (16)	108 (21)	121 (23)	79 (15)	23.630	<0.001
	Yes	90 (19)	94 (20)	53 (11)	85 (18)	78 (16)	76 (16)		
Hammer toes	No	60 (12)	66 (13)	57 (11)	146 (29)	105 (21)	67 (13)	71.936	<0.001
	Yes	101 (20)	92 (18)	77 (15)	47 (9)	94 (19)	88 (18)		
Neuroma	No	109 (22)	60 (12)	56 (11)	106 (21)	90 (18)	73 (15)	37.000	<0.001
	Yes	52 (10)	98 (19)	78 (15)	87 (17)	109 (21)	82 (16)		
Foot pain	Some of the time	110 (22)	71 (14)	59 (12)	99 (20)	99 (20)	72 (14)	25.677	<0.001
	Most of the time	51 (10)	87 (18)	75 (15)	94 (19)	100 (20)	83 (17)		

4.5.2 Association between Gender and Prevalence of Foot Ailments among Respondents

The Chi-Square test results showed that there were statistically significant associations between gender and the experience of several foot ailments, including nail problems ($p < 0.001$), pain from high heels ($p < 0.001$), bone spurs ($p = 0.063$, approaching significance), and hammer toes ($p = 0.003$). A significant association was also found with the frequency of foot pain ($p < 0.001$). Table 33

Table 33: Association between Gender and Prevalence of Foot Ailments among Respondents

Variable	Response	Male n (%)	Female n (%)	χ^2	p-value
Nail issues	No	242 (54)	209 (46)	12.889	<0.001
	Yes	356 (65)	193 (35)		
Sweaty feet	No	321 (62)	201 (38)	1.304	0.253
	Yes	277 (58)	201 (42)		
Heel pain	No	290 (62)	181 (38)	1.162	0.281
	Yes	308 (58)	221 (42)		
Ball of feet pain	No	255 (59)	180 (41)	0.445	0.505
	Yes	343 (61)	222 (39)		
Pain from heels	No	272 (54)	234 (46)	15.570	<0.001
	Yes	326 (66)	168 (34)		
Bunions	No	328 (60)	215 (40)	0.181	0.671
	Yes	270 (59)	187 (41)		
Bone spurs	No	287 (57)	217 (43)	3.447	0.063
	Yes	311 (63)	185 (37)		
Tendinitis	No	290 (59)	199 (41)	0.098	0.755
	Yes	308 (60)	203 (40)		
Stress fractures	No	310 (59)	214 (41)	0.187	0.665
	Yes	288 (60)	188 (40)		
Hammer toes	No	323 (64)	178 (36)	9.113	0.003
	Yes	275 (55)	224 (45)		
Neuroma	No	291 (59)	203 (41)	0.324	0.569
	Yes	307 (61)	199 (39)		
Foot pain	Some of the time	359 (70)	151 (30)	48.575	<0.001
	Most of the time	239 (49)	251 (51)		

4.5.3 Association between Marital Status and Prevalence of Foot Ailments among Respondents

The Chi-Square test results showed that statistically significant associations were found between marital status and all the foot ailments listed ($p < 0.001$ for all). The frequency of foot pain was also significantly associated with marital status ($p < 0.001$). Table

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Table 34: Association between Marital Status and Prevalence of Foot Ailments among Respondents

Variable	Response	Single n (%)	Married n (%)	Divorced n (%)	Widowed n (%)	Separated n (%)	χ^2	p-value
Nail issues	No	171 (38)	78 (17)	28 (6)	118 (26)	56 (12)	78.802	<0.001
	Yes	126 (23)	200 (36)	47 (9)	75 (14)	101 (18)		
Sweaty feet	No	206 (39)	143 (27)	31 (6)	83 (16)	59 (11)	58.655	<0.001
	Yes	91 (19)	135 (28)	44 (9)	110 (23)	98 (20)		
Heel pain	No	182 (39)	149 (32)	31 (7)	71 (15)	38 (8)	70.948	<0.001
	Yes	115 (22)	129 (24)	44 (8)	122 (23)	119 (23)		
Ball of feet pain	No	175 (40)	79 (18)	31 (7)	70 (16)	80 (18)	62.274	<0.001
	Yes	122 (22)	199 (35)	44 (8)	123 (22)	77 (14)		
Pain from heels	No	135 (27)	166 (33)	25 (5)	114 (23)	66 (13)	31.466	<0.001
	Yes	162 (33)	112 (23)	50 (10)	79 (16)	91 (18)		
Bunions	No	212 (39)	118 (22)	50 (9)	84 (15)	79 (15)	65.317	<0.001
	Yes	85 (19)	160 (35)	25 (5)	109 (24)	78 (17)		
Bone spurs	No	199 (40)	136 (27)	21 (4)	61 (12)	87 (17)	76.897	<0.001
	Yes	98 (20)	142 (29)	54 (11)	132 (27)	70 (14)		
Tendinitis	No	135 (28)	117 (24)	35 (7)	100 (20)	102 (21)	23.603	<0.001
	Yes	162 (32)	161 (31)	40 (8)	93 (18)	55 (11)		
Stress fractures	No	150 (29)	136 (26)	24 (5)	122 (23)	92 (18)	25.755	<0.001
	Yes	147 (31)	142 (30)	51 (11)	71 (15)	65 (14)		
Hammer toes	No	128 (26)	143 (29)	49 (10)	95 (19)	86 (17)	14.419	0.006
	Yes	169 (34)	135 (27)	26 (5)	98 (20)	71 (14)		
Neuroma	No	144 (29)	152 (31)	53 (11)	104 (21)	41 (8)	52.375	<0.001
	Yes	153 (30)	126 (25)	22 (4)	89 (18)	116 (23)		
Foot pain	Sometimes	164 (32)	142 (28)	60 (12)	63 (12)	81 (16)	53.405	<0.001
	Most times	133 (27)	136 (28)	15 (3)	130 (27)	76 (16)		

4.5.4 Association between Level of Education and Prevalence of Foot Ailments among Respondents

The Chi-Square test results showed significant associations were observed between level of education and several foot ailments, including nail problems ($p=0.004$), sweaty feet/foot odor ($p < 0.001$), heel pain/plantar fasciitis ($p < 0.001$), pain from high heels ($p < 0.001$), and bunions ($p < 0.001$). The prevalence of foot pain showed no significant association with the level of education ($p = 0.964$). No statistically significant associations were found between level of education and other items ($p > 0.05$) Table 35

Table 35: Association between Level of Education and Prevalence of Foot Ailments among Respondents

Variable	Response	No Formal n (%)	Primary n (%)	Secondary n (%)	University n (%)	χ^2	p-value
Nail issues	No	80 (18)	84 (19)	69 (15)	218 (48)	13.552	0.004
	Yes	92 (17)	78 (14)	133 (24)	246 (45)		
Sweaty feet	No	72 (14)	62 (12)	101 (19)	287 (55)	37.686	<0.001
	Yes	100 (21)	100 (21)	101 (21)	177 (37)		
Heel pain	No	40 (8)	73 (15)	117 (25)	241 (51)	53.373	<0.001
	Yes	132 (25)	89 (17)	85 (16)	223 (42)		
Ball of feet pain	No	73 (17)	55 (13)	129 (30)	178 (41)	45.147	<0.001
	Yes	99 (18)	107 (19)	73 (13)	286 (51)		
Pain from heels	No	70 (14)	72 (14)	136 (27)	228 (45)	32.209	<0.001
	Yes	102 (21)	90 (18)	66 (13)	236 (48)		
Bunions	No	66 (12)	63 (12)	126 (23)	288 (53)	49.685	<0.001
	Yes	106 (23)	99 (22)	76 (17)	176 (39)		
Bone spurs	No	91 (18)	77 (15)	97 (19)	239 (47)	1.652	0.648
	Yes	81 (16)	85 (17)	105 (21)	225 (45)		
Tendinitis	No	117 (24)	94 (19)	112 (23)	166 (34)	66.017	<0.001
	Yes	55 (11)	68 (13)	90 (18)	298 (58)		
Stress fractures	No	89 (17)	114 (22)	114 (22)	207 (40)	33.606	<0.001
	Yes	83 (17)	48 (10)	88 (18)	257 (54)		
Hammer toes	No	97 (19)	82 (16)	102 (20)	220 (44)	4.096	0.251
	Yes	75 (15)	80 (16)	100 (20)	244 (49)		
Neuroma	No	77 (16)	92 (19)	89 (18)	236 (48)	7.718	0.052
	Yes	95 (19)	70 (14)	113 (22)	228 (45)		
Foot pain	Some of the time	89 (17)	80 (16)	102 (20)	239 (47)	0.276	0.964
	Most of the time	83 (17)	82 (17)	100 (20)	225 (46)		

4.5.5 Association between Occupational Status and Prevalence of Foot Ailments among Respondents

The Chi-Square test results showed significant associations was found between occupational status and sweaty feet/foot odor ($p=0.045$). No statistically significant associations were found between occupational status and other items ($p > 0.05$). Table 36

Table 36: Association between Occupational Status and Prevalence of Foot Ailments among Respondents

Variable	Response	Unemployed n (%)	Self-Emp n (%)	Civil Servant n (%)	Private Emp n (%)	Retired n (%)	χ^2	p-value
Nail issues	No	39 (9)	176 (39)	88 (20)	106 (23)	42 (9)	2.823	0.588
	Yes	41 (7)	213 (39)	96 (18)	152 (28)	47 (9)		
Sweaty feet	No	46 (9)	223 (43)	85 (16)	126 (24)	42 (8)	9.721	0.045
	Yes	34 (7)	166 (35)	99 (21)	132 (28)	47 (10)		
Heel pain	No	46 (10)	187 (40)	81 (17)	114 (24)	43 (9)	5.252	0.262
	Yes	34 (6)	202 (38)	103 (19)	144 (27)	46 (9)		
Ball of feet pain	No	36 (8)	162 (37)	73 (17)	115 (26)	49 (11)	6.671	0.154
	Yes	44 (8)	227 (40)	111 (20)	143 (25)	40 (7)		
Pain from heels	No	49 (10)	188 (37)	95 (19)	129 (25)	45 (9)	4.548	0.337
	Yes	31 (6)	201 (41)	89 (18)	129 (26)	44 (9)		
Bunions	No	33 (6)	204 (38)	103 (19)	148 (27)	55 (10)	9.233	0.056
	Yes	47 (10)	185 (41)	81 (18)	110 (24)	34 (7)		
Bone spurs	No	47 (9)	192 (38)	93 (18)	129 (26)	43 (9)	2.573	0.632
	Yes	33 (7)	197 (40)	91 (18)	129 (26)	46 (9)		
Tendinitis	No	42 (9)	186 (38)	74 (15)	145 (30)	42 (9)	11.758	0.019
	Yes	38 (7)	203 (40)	110 (22)	113 (22)	47 (9)		
Stress fractures	No	44 (8)	192 (37)	95 (18)	142 (27)	51 (10)	3.283	0.512
	Yes	36 (8)	197 (41)	89 (19)	116 (24)	38 (8)		
Hammer toes	No	37 (7)	181 (36)	102 (20)	140 (28)	41 (8)	6.921	0.140
	Yes	43 (9)	208 (42)	82 (16)	118 (24)	48 (10)		
Neuroma	No	41 (8)	202 (41)	98 (20)	118 (24)	35 (7)	7.200	0.126
	Yes	39 (8)	187 (37)	86 (17)	140 (28)	54 (11)		
Foot pain	Some of the time	34 (7)	199 (39)	105 (21)	131 (26)	41 (8)	5.897	0.207
	Most of the time	46 (9)	190 (39)	79 (16)	127 (26)	48 (10)		

4.5.6 Association between BMI and Prevalence of Foot Ailments among Respondents

The Chi-Square test results showed significant associations between BMI and all listed foot ailments ($p < 0.001$ for all), as well as the frequency of foot pain ($p < 0.001$). Table 37

Table 37: Association between BMI and Prevalence of Foot Ailments among Respondents

Variable	Response	Underweight	Normal	Overweight	Obese	Total	χ^2	p
Nail issues	No	0 (0)	275 (61)	176 (39)	0 (0)	451	53.276	<0.001
	Yes	19 (3)	375 (68)	133 (24)	22 (4)	549		
Sweaty feet	No	19 (4)	312 (60)	183 (35)	8 (2)	522	30.314	<0.001
	Yes	0 (0)	338 (71)	126 (26)	14 (3)	478		
Heel pain	No	19 (4)	315 (67)	137 (29)	0 (0)	471	42.358	<0.001
	Yes	0 (0)	335 (63)	172 (33)	22 (4)	529		
Ball of feet pain	No	19 (4)	316 (73)	100 (23)	0 (0)	435	64.132	<0.001
	Yes	0 (0)	334 (59)	209 (37)	22 (4)	565		
Pain from heels	No	5 (1)	336 (66)	143 (28)	22 (4)	506	28.580	<0.001
	Yes	14 (3)	314 (64)	166 (34)	0 (0)	494		
Bunions	No	14 (3)	348 (64)	173 (32)	8 (1)	543	6.235	0.101
	Yes	5 (1)	302 (66)	136 (30)	14 (3)	457		
Bone spurs	No	14 (3)	317 (63)	151 (30)	22 (4)	504	26.753	<0.001
	Yes	5 (1)	333 (67)	158 (32)	0 (0)	496		
Tendinitis	No	14 (3)	366 (75)	109 (22)	0 (0)	489	62.954	<0.001
	Yes	5 (1)	284 (56)	200 (39)	22 (4)	511		
Stress fractures	No	14 (3)	361 (69)	141 (27)	8 (2)	524	13.962	0.003
	Yes	5 (1)	289 (61)	168 (35)	14 (3)	476		
Hammer toes	No	19 (4)	348 (70)	120 (24)	14 (3)	501	39.296	<0.001
	Yes	0 (0)	302 (61)	189 (38)	8 (2)	499		
Neuroma	No	19 (4)	302 (61)	165 (33)	8 (2)	494	25.179	<0.001
	Yes	0 (0)	348 (69)	144 (28)	14 (3)	506		
Foot pain	Some of the time	19 (4)	328 (64)	149 (29)	14 (3)	510	20.692	<0.001
	Most of the time	0 (0)	322 (66)	160 (33)	8 (2)	490		

4.6 Association Between Sociodemographic Variables and Self Care and Foot Care Practices

4.6.1 Association between Age and Respondents' Self-Care Practices

The Chi-Square test sought to determine if there was a statistically significant relationship between the age of respondents and their self-reported health and foot care practices. The results indicate a highly significant association ($p < 0.001$) between age and all surveyed self-care practices, including dental, eye, heart, skin, and foot care, as well as exercise and adherence to a nutritious diet. This suggests that the regularity with which individuals engage in these health-promoting behaviors varies significantly across different age groups (Table 38).

4.6.2 Association between Age and Respondents' Foot Care Practices

There was also a statistically significant association between age and all specific foot care activities examined. These activities include proper toenail care, use of lotions, wearing supportive footwear, adherence to a cleaning regimen, performing foot exercises, using insoles, minimizing prolonged standing, using foot baths, and the use of orthotics. The p-values for all associations were less than 0.001, except for supportive footwear which was 0.001, still indicating a significant relationship (Table 39).

Table 38: Association between Age and Respondents' Self-Care Practices

Variable	Response	18-25 n (%)	26-35 n (%)	36-45 n (%)	46-55 n (%)	56-65 n (%)	>65 n (%)	χ^2	p-value
Teeth	N	63 (21)	44 (14)	65 (21)	21 (7)	21 (7)	90 (30)	194.574	<0.001
	S	53 (14)	54 (14)	59 (15)	84 (22)	85 (22)	51 (13)		
	A	45 (15)	60 (19)	10 (3)	88 (28)	93 (30)	14 (5)		
Eye care	N	41 (12)	82 (24)	25 (7)	81 (23)	71 (20)	48 (14)	176.318	<0.001
	S	75 (20)	69 (18)	28 (8)	69 (18)	97 (26)	35 (9)		
	A	45 (16)	7 (3)	81 (29)	43 (15)	31 (11)	72 (26)		
Heart care	N	84 (23)	78 (21)	54 (15)	42 (11)	62 (17)	47 (13)	148.813	<0.001
	S	11 (4)	60 (20)	29 (10)	69 (23)	96 (32)	31 (10)		
	A	66 (20)	20 (6)	51 (15)	82 (24)	41 (12)	77 (23)		
Skin care	N	62 (15)	89 (21)	23 (5)	111 (26)	94 (22)	36 (9)	143.319	<0.001
	S	36 (15)	24 (10)	37 (15)	66 (27)	46 (19)	37 (15)		
	A	63 (19)	45 (13)	74 (22)	16 (5)	59 (18)	82 (25)		
Foot care	N	64 (29)	72 (32)	44 (20)	94 (42)	97 (44)	74 (33)	32.676	<0.001
	S	46 (14)	59 (18)	44 (13)	66 (20)	61 (18)	57 (17)		
	A	51 (11)	27 (6)	46 (10)	33 (7)	41 (9)	24 (5)		
Exercise	N	40 (13)	77 (25)	57 (18)	92 (29)	112 (36)	73 (23)	130.094	<0.001
	S	35 (15)	8 (3)	54 (23)	50 (21)	59 (25)	31 (13)		
	A	86 (19)	73 (16)	23 (5)	51 (11)	28 (6)	51 (11)		
Nutritious diet	N	52 (19)	67 (25)	43 (16)	67 (25)	103 (38)	34 (13)	83.932	<0.001
	S	67 (18)	38 (10)	70 (19)	56 (15)	72 (20)	62 (17)		
	A	42 (11)	53 (15)	21 (6)	70 (19)	24 (7)	59 (16)		

Table 39: Association between Age and Selected Foot Care Practices among Respondents

Variable	Response	18-25 n (%)	26-35 n (%)	36-45 n (%)	46-55 n (%)	56-65 n (%)	>65 n (%)	χ^2	p-value
Toenails	No	104 (20)	64 (12)	90 (17)	115 (22)	92 (17)	67 (13)	42.354	<0.001
	Yes	57 (12)	94 (20)	44 (9)	78 (17)	107 (23)	88 (19)		
Lotions/creams	No	83 (16)	62 (12)	87 (17)	83 (16)	106 (21)	89 (17)	27.062	<0.001
	Yes	78 (16)	96 (20)	47 (10)	110 (22)	93 (19)	66 (13)		
Supportive footwear	No	77 (17)	55 (12)	53 (12)	101 (22)	106 (24)	59 (13)	21.440	0.001
	Yes	84 (15)	103 (19)	81 (15)	92 (17)	93 (17)	96 (18)		
Cleaning regimen	No	90 (18)	105 (21)	35 (7)	124 (24)	90 (18)	63 (12)	72.655	<0.001
	Yes	71 (14)	53 (11)	99 (20)	69 (14)	109 (22)	92 (19)		
Exercises	No	123 (23)	129 (24)	35 (6)	82 (15)	129 (24)	48 (9)	176.068	<0.001
	Yes	38 (8)	29 (6)	99 (22)	111 (24)	70 (15)	107 (24)		
Insoles	No	138 (23)	89 (15)	78 (13)	154 (25)	92 (15)	53 (9)	136.053	<0.001
	Yes	23 (6)	69 (17)	56 (14)	39 (10)	107 (27)	102 (26)		
Standing less	No	95 (17)	102 (18)	98 (17)	96 (17)	109 (19)	74 (13)	28.151	<0.001
	Yes	66 (15)	56 (13)	36 (8)	97 (23)	90 (21)	81 (19)		
Foot bath	No	65 (16)	31 (8)	51 (12)	38 (9)	135 (33)	95 (23)	151.583	<0.001
	Yes	96 (16)	127 (22)	83 (14)	155 (26)	64 (11)	60 (10)		
Orthotics	No	39 (9)	79 (17)	87 (19)	83 (18)	88 (19)	84 (18)	56.215	<0.001
	Yes	122 (23)	79 (15)	47 (9)	110 (20)	111 (21)	71 (13)		

4.6.3 Association between Gender and Respondents' Self-Care Practices

The Chi-Square test was used to determine if gender influenced respondents' self-care practices. The findings reveal a significant association between gender and most self-care practices. Eye care, heart care, skin care, foot care, exercise, and maintaining a nutritious diet all showed statistically significant differences between males and females ($p < 0.05$). However, there was no significant association found between gender and the regularity of teeth cleaning ($p = 0.120$) (Table 40).

4.6.4 Association between Gender and Respondents' Foot Care Practices

Gender was significantly associated with toenail care, use of lotions/creams, following a cleaning regimen, use of insoles, minimizing standing, and use of foot baths ($p < 0.05$). Conversely, there was no statistically significant association between gender and the use of supportive footwear, foot exercises, or orthotics (Table 41).

Table 40: Association between Gender and Respondents' Self-Care Practices

Variable	Response	Male n (%)	Female n (%)	χ^2	p
Teeth	N	168 (55)	136 (45)	4.235	0.120
	S	243 (63)	143 (37)		
	A	187 (60)	123 (40)		
Eye care	N	250 (72)	98 (28)	32.294	<0.001
	S	197 (53)	176 (47)		
	A	151 (54)	128 (46)		
Heart care	N	208 (57)	159 (43)	11.262	0.004
	S	164 (55)	132 (45)		
	A	226 (67)	111 (33)		
Skin care	N	275 (66)	140 (34)	13.115	0.001
	S	141 (57)	105 (43)		
	A	182 (53)	157 (47)		
Foot care	N	255 (57)	190 (43)	25.184	<0.001
	S	233 (70)	100 (30)		
	A	110 (49)	112 (51)		
Exercise	N	236 (52)	215 (48)	37.275	<0.001
	S	132 (56)	105 (44)		
	A	230 (74)	82 (26)		
Nutritious diet	N	206 (56)	160 (44)	29.320	<0.001
	S	257 (70)	108 (30)		
	A	135 (50)	134 (50)		

KEY: N=Never, S=Sometimes, A=Always

Table 41: Association between Gender and Selected Foot Care Practices among Respondents

Variable	Response	Male n (%)	Female n (%)	χ^2	p
Toenails	No	341 (64)	191 (36)	8.734	0.003
	Yes	257 (55)	211 (45)		
Lotions/creams	No	256 (50)	254 (50)	39.934	<0.001
	Yes	342 (70)	148 (30)		
Supportive footwear	No	271 (60)	180 (40)	0.028	0.866
	Yes	327 (59)	222 (41)		
Cleaning regimen	No	328 (65)	179 (35)	10.247	0.001
	Yes	270 (55)	223 (45)		
Exercises	No	323 (59)	223 (41)	0.207	0.650
	Yes	275 (61)	179 (39)		
Insoles	No	423 (70)	181 (30)	66.440	<0.001
	Yes	175 (44)	221 (56)		
Standing less	No	389 (68)	185 (32)	35.604	<0.001
	Yes	209 (49)	217 (51)		
Foot bath	No	218 (53)	197 (47)	15.596	<0.001
	Yes	380 (65)	205 (35)		
Orthotics	No	261 (57)	199 (43)	3.320	0.068
	Yes	337 (62)	203 (38)		

4.6.5 Association between Marital Status and Respondents' Self-Care Practices

The Chi-Square test results showed that marital status is statistically significantly associated with all the assessed self-care practices ($p < 0.001$). This includes care for teeth, eyes, heart, skin, and feet, as well as exercise and diet. These results suggest that an individual's marital status may influence their health-related behaviors (Table 42).

4.6.6 Association between Marital Status and Respondents' Foot Care Practices

Marital status also has a statistically significant association with all specific foot care Practices measured ($p \leq 0.001$). This suggests that practices such as toenail care, use of lotions, choice of footwear, cleaning routines, exercises, and the use of insoles, orthotics, and foot baths differ significantly across various marital status groups (Table 43).

Table 42: Association between Marital Status and Respondents' Self-Care Practices

Variable	Response	Single n (%)	Married n (%)	Divorced n (%)	Widowed n (%)	Separated n (%)	χ^2	p
Teeth	N	71 (23)	89 (29)	27 (9)	51 (17)	66 (22)	39.064	<0.001
	S	134 (35)	109 (28)	37 (10)	62 (16)	44 (11)		
	A	92 (30)	80 (26)	11 (4)	80 (26)	47 (15)		
Eye care	N	85 (24)	81 (23)	33 (9)	87 (25)	62 (18)	83.506	<0.001
	S	136 (37)	137 (37)	29 (8)	46 (12)	25 (7)		
	A	76 (27)	60 (22)	13 (5)	60 (22)	70 (25)		
Heart care	N	126 (34)	91 (25)	15 (4)	99 (27)	36 (10)	129.225	<0.001
	S	96 (32)	114 (39)	36 (12)	28 (9)	22 (7)		
	A	75 (22)	73 (22)	24 (7)	66 (20)	99 (29)		
Skin care	N	162 (39)	88 (21)	15 (4)	90 (22)	60 (14)	56.134	<0.001
	S	69 (28)	78 (32)	25 (10)	42 (17)	32 (13)		
	A	66 (20)	112 (34)	35 (11)	61 (18)	65 (20)		
Foot care	N	154 (35)	124 (28)	22 (5)	79 (18)	66 (15)	86.949	<0.001
	S	114 (34)	62 (19)	20 (6)	66 (20)	71 (21)		
	A	29 (13)	92 (41)	33 (15)	48 (22)	20 (9)		
Exercise	N	111 (25)	137 (30)	38 (8)	99 (22)	66 (15)	127.993	<0.001
	S	28 (12)	77 (33)	16 (7)	72 (30)	44 (19)		
	A	158 (51)	64 (21)	21 (7)	22 (7)	47 (15)		
Nutritious diet	N	38 (14)	175 (65)	30 (11)	58 (22)	65 (24)	192.329	<0.001
	S	173 (47)	61 (17)	24 (7)	75 (21)	32 (9)		
	A	86 (24)	42 (11)	21 (6)	60 (16)	60 (16)		

KEY: N=Never, S=Sometimes, A=Always

Table 43: Association between Marital Status and Selected Foot Care Practices among Respondents

Variable	Response	Single n (%)	Married n (%)	Divorced n (%)	Widowed n (%)	Separated n (%)	χ^2	p
Toenails	No	171 (32)	128 (24)	38 (7)	89 (17)	106 (20)	25.012	<0.001
	Yes	126 (27)	150 (32)	37 (8)	104 (22)	51 (11)		
Lotions/creams	No	131 (26)	133 (26)	34 (7)	120 (24)	92 (18)	20.993	<0.001
	Yes	166 (34)	145 (30)	41 (8)	73 (15)	65 (13)		
Supportive footwear	No	126 (28)	111 (25)	30 (7)	90 (20)	94 (21)	18.671	0.001
	Yes	171 (31)	167 (31)	45 (8)	103 (19)	63 (12)		
Cleaning regimen	No	148 (29)	145 (29)	40 (8)	125 (25)	49 (10)	39.673	<0.001
	Yes	149 (30)	133 (27)	35 (7)	68 (14)	108 (22)		
Exercises	No	139 (26)	209 (38)	44 (8)	94 (17)	60 (11)	74.992	<0.001
	Yes	158 (35)	69 (15)	31 (7)	99 (22)	97 (21)		
Insoles	No	235 (39)	187 (31)	45 (7)	44 (7)	93 (15)	163.200	<0.001
	Yes	62 (16)	91 (23)	30 (8)	149 (38)	64 (16)		
Standing less	No	187 (33)	166 (29)	52 (9)	67 (12)	102 (18)	53.029	<0.001
	Yes	110 (26)	112 (26)	23 (5)	126 (29)	55 (13)		
Foot bath	No	86 (21)	128 (31)	47 (11)	119 (29)	35 (9)	91.614	<0.001
	Yes	211 (36)	150 (26)	28 (5)	74 (13)	122 (21)		
Orthotics	No	140 (31)	98 (22)	53 (12)	114 (25)	55 (12)	52.326	<0.001
	Yes	157 (29)	180 (33)	22 (4)	79 (15)	102 (19)		

4.6.7 Association between Level of Education and Respondents' Self-Care Practices

The Chi-Square test results showed a statistically significant association ($p < 0.001$) between the level of education and all categories of self-care practices. This implies that educational attainment is a significant factor in how regularly individuals practice dental, eye, heart, skin, and foot care, as well as their engagement in exercise and healthy eating (Table 44).

4.6.8 Association between Level of Education and Respondents' Foot Care Practices

Respondents' level of education was significantly associated with most specific foot care Practices, including the use of lotions, cleaning regimens, exercises, use of insoles, reducing standing time, foot baths, and orthotics ($p < 0.05$). However, no significant association was found for toenail care ($p=0.198$) or the use of supportive footwear ($p=0.101$) (Table 45).

Table 44: Association between Level of Education and Respondents' Self-Care Practices

Variable	Response	No Formal n (%)	Primary n (%)	Secondary n (%)	University n (%)	χ^2	p-value
Teeth	N	63 (21)	51 (17)	35 (11)	155 (51)	54.911	<0.001
	S	61 (16)	38 (10)	85 (22)	202 (52)		
	A	48 (15)	73 (24)	82 (26)	107 (35)		
Eye care	N	43 (12)	62 (18)	82 (24)	161 (46)	34.014	<0.001
	S	53 (14)	55 (15)	69 (18)	196 (53)		
	A	76 (27)	45 (16)	51 (18)	107 (38)		
Heart care	N	45 (12)	42 (11)	74 (20)	206 (56)	42.320	<0.001
	S	74 (25)	47 (16)	66 (22)	109 (37)		
	A	53 (16)	73 (22)	62 (18)	149 (44)		
Skin care	N	56 (13)	73 (17)	103 (25)	183 (44)	71.368	<0.001
	S	18 (7)	57 (23)	45 (18)	126 (51)		
	A	98 (30)	32 (10)	54 (16)	155 (47)		
Foot care	N	50 (11)	91 (20)	111 (25)	193 (43)	49.369	<0.001
	S	88 (26)	38 (11)	46 (14)	161 (48)		
	A	34 (15)	33 (15)	45 (20)	110 (50)		
Exercise	N	107 (24)	70 (16)	98 (22)	176 (39)	46.842	<0.001
	S	27 (11)	45 (19)	60 (25)	105 (44)		
	A	38 (12)	47 (15)	44 (14)	183 (58)		
Nutritious diet	N	81 (22)	54 (15)	72 (20)	159 (44)	37.057	<0.001
	S	49 (13)	43 (12)	94 (26)	179 (49)		
	A	42 (15)	65 (23)	36 (13)	126 (45)		

KEY: N=Never, S=Sometimes, A=Always

Table 45: Association between Level of Education and Selected Foot Care Practices

Variable	Response	No Formal n (%)	Primary n (%)	Secondary n (%)	University n (%)	χ^2	p-value
Toenails	No	100 (19)	93 (17)	99 (19)	240 (45)	4.668	0.198
	Yes	72 (15)	69 (15)	103 (22)	224 (48)		
Lotions/creams	No	89 (17)	102 (20)	93 (18)	226 (44)	12.281	0.006
	Yes	83 (17)	60 (12)	109 (22)	238 (49)		
Supportive footwear	No	74 (16)	64 (14)	105 (23)	208 (46)	6.223	0.101
	Yes	98 (18)	98 (18)	97 (18)	256 (47)		
Cleaning regimen	No	77 (15)	78 (15)	91 (18)	261 (52)	11.142	0.011
	Yes	95 (19)	84 (17)	111 (22)	203 (41)		
Exercises	No	72 (13)	61 (11)	108 (20)	305 (56)	53.332	<0.001
	Yes	100 (22)	101 (22)	94 (21)	159 (35)		
Insoles	No	112 (19)	79 (13)	135 (22)	278 (46)	14.307	0.003
	Yes	60 (15)	83 (21)	67 (17)	186 (47)		
Standing less	No	60 (10)	99 (17)	143 (25)	272 (47)	51.673	<0.001
	Yes	112 (26)	63 (15)	59 (14)	192 (45)		
Foot bath	No	58 (14)	87 (21)	117 (28)	153 (37)	50.553	<0.001
	Yes	114 (19)	75 (13)	85 (14)	311 (53)		
Orthotics	No	71 (16)	102 (22)	122 (27)	165 (36)	57.521	<0.001
	Yes	101 (19)	60 (11)	80 (15)	299 (55)		

4.6.9 Association between Occupational Status and Respondents' Self-Care Practices

The Chi-Square test results showed that there was no statistically significant association between occupational status and any of the general self-care practices among respondents. The p-values for all practices (teeth, eye, heart, skin, foot care, exercise, and nutritious diet) were well above the 0.05 threshold, indicating that employment status does not significantly influence the regularity of these health behaviors in this sample (Table 46).

4.6.10 Association between Occupational Status and Respondents' Foot Care Practices

A significant association was found only between occupational status and respondents' use of insoles ($p = 0.018$). For all other specific foot care Practices, such as toenail care, use of lotions, supportive footwear, cleaning, exercises, reducing standing time, foot baths, and orthotics, there was no statistically significant relationship with occupational status ($p > 0.05$) (Table 47).

Table 46: Association between Occupational Status and Respondents' Self-Care Practices

Variable	Response	Unemployed n (%)	Self-Emp n (%)	Civil Servant n (%)	Private Emp n (%)	Retired n (%)	χ^2	p-value
Teeth	N	21 (7)	110 (36)	69 (23)	76 (25)	28 (9)	8.454	0.390
	S	35 (9)	157 (41)	61 (16)	104 (27)	29 (8)		
	A	24 (8)	122 (39)	54 (17)	78 (25)	32 (10)		
Eye care	N	30 (9)	130 (37)	62 (18)	92 (26)	34 (10)	4.006	0.857
	S	25 (7)	157 (42)	68 (18)	91 (24)	32 (9)		
	A	25 (9)	102 (37)	54 (19)	75 (27)	23 (8)		
Heart care	N	31 (9)	144 (39)	73 (20)	87 (24)	32 (9)	7.347	0.500
	S	25 (8)	122 (41)	41 (14)	80 (27)	28 (9)		
	A	24 (7)	123 (37)	70 (21)	91 (27)	29 (9)		
Skin care	N	35 (8)	158 (38)	80 (19)	102 (24)	40 (10)	4.246	0.834
	S	21 (9)	97 (39)	49 (20)	62 (25)	17 (7)		
	A	24 (7)	134 (40)	55 (16)	94 (28)	32 (10)		
Foot care	N	38 (9)	172 (38)	74 (16)	116 (26)	45 (10)	5.821	0.667
	S	22 (7)	135 (41)	67 (20)	80 (24)	29 (9)		
	A	20 (9)	82 (37)	43 (19)	62 (28)	15 (7)		
Exercise	N	33 (7)	171 (38)	79 (18)	120 (27)	48 (11)	8.093	0.424
	S	14 (6)	97 (41)	46 (19)	61 (26)	19 (8)		
	A	33 (10)	121 (39)	59 (19)	77 (25)	22 (7)		
Nutritious diet	N	22 (8)	131 (49)	76 (28)	96 (36)	41 (15)	13.173	0.106
	S	33 (9)	140 (38)	61 (17)	103 (28)	28 (8)		
	A	25 (9)	118 (44)	47 (17)	59 (22)	20 (7)		

KEY: N=Never, S=Sometimes, A=Always

Table 47: Association between Occupational Status and Selected Foot Care Practices among Respondents

Variable	Response	Unemployed n (%)	Self-Emp n (%)	Civil Servant n (%)	Private Emp n (%)	Retired n (%)	χ^2	p-value
Toenails	No	42 (8)	204 (38)	102 (19)	135 (25)	49 (9)	0.677	0.954
	Yes	38 (8)	185 (40)	82 (18)	123 (26)	40 (9)		
Lotions/creams	No	41 (8)	201 (39)	94 (18)	129 (25)	45 (9)	0.183	0.996
	Yes	39 (8)	188 (38)	90 (18)	129 (26)	44 (9)		
Supportive footwear	No	36 (8)	165 (37)	74 (17)	131 (29)	45 (10)	7.332	0.119
	Yes	44 (8)	224 (41)	110 (20)	127 (23)	44 (8)		
Cleaning regimen	No	47 (9)	194 (38)	102 (20)	121 (24)	43 (8)	5.525	0.238
	Yes	33 (7)	195 (40)	82 (17)	137 (28)	46 (9)		
Exercises	No	41 (8)	227 (42)	92 (17)	134 (25)	52 (10)	5.409	0.248
	Yes	39 (9)	162 (36)	92 (20)	124 (27)	37 (8)		
Insoles	No	60 (10)	241 (40)	108 (18)	150 (25)	45 (7)	11.898	0.018
	Yes	20 (5)	148 (37)	76 (19)	108 (27)	44 (11)		
Standing less	No	48 (8)	224 (39)	108 (19)	143 (25)	51 (9)	0.764	0.943
	Yes	32 (8)	165 (39)	76 (18)	115 (27)	38 (9)		
Foot bath	No	31 (8)	163 (40)	86 (21)	102 (25)	33 (8)	3.482	0.481
	Yes	49 (8)	226 (39)	98 (17)	156 (27)	56 (10)		
Orthotics	No	27 (6)	175 (38)	86 (19)	127 (28)	45 (10)	6.860	0.143
	Yes	53 (10)	214 (40)	98 (18)	131 (24)	44 (8)		

4.6.11 Association between BMI and Respondents' Self-Care Practices

The Chi-Square test results showed that there was a statistically significant association ($p < 0.001$) between BMI and all listed self-care practices among respondents. This indicates that an individual's BMI is significantly related to the regularity of their practices concerning dental, eye, heart, skin, and foot care, as well as exercise and diet (Table 48).

4.6.12 Association between BMI and Respondents' Foot Care Practices

BMI was significantly associated with almost all specific foot care Practices among respondents ($p < 0.05$). This includes toenail care, use of lotions/creams, supportive footwear, foot exercises, use of insoles, minimizing standing time, use of foot baths, and orthotics.

The only activity that did not show a statistically significant relationship with BMI was the adherence to a regular cleaning regimen ($p = 0.072$) (Table 49).

Table 48: Association between BMI and Respondents' Self-Care Practices

Variable	Response	Underweight n (%)	Normal n (%)	Overweight n (%)	Obese n (%)	χ^2	p-value
Teeth	N	0 (0)	200 (66)	104 (34)	0 (0)	69.768	<0.001
	S	19 (5)	243 (63)	102 (26)	22 (6)		
	A	0 (0)	207 (67)	103 (33)	0 (0)		
Eye care	N	0 (0)	270 (78)	64 (18)	14 (4)	98.032	<0.001
	S	19 (5)	195 (52)	159 (43)	0 (0)		
	A	0 (0)	185 (66)	86 (31)	8 (3)		
Heart care	N	0 (0)	237 (64)	130 (35)	0 (0)	51.630	<0.001
	S	14 (5)	206 (70)	62 (21)	14 (5)		
	A	5 (1)	207 (61)	117 (35)	8 (2)		
Skin care	N	0 (0)	302 (73)	113 (27)	0 (0)	143.362	<0.001
	S	19 (8)	141 (57)	64 (26)	22 (9)		
	A	0 (0)	207 (61)	132 (39)	0 (0)		
Foot care	N	19 (4)	264 (59)	154 (35)	8 (2)	61.026	<0.001
	S	0 (0)	226 (68)	107 (32)	0 (0)		
	A	0 (0)	160 (72)	48 (22)	14 (6)		
Exercise	N	14 (3)	339 (75)	98 (22)	0 (0)	78.812	<0.001
	S	5 (2)	154 (65)	70 (30)	8 (3)		
	A	0 (0)	157 (50)	141 (45)	14 (4)		
Nutritious diet	N	5 (1)	251 (69)	110 (30)	0 (0)	45.370	<0.001
	S	14 (4)	209 (57)	134 (37)	8 (2)		
	A	0 (0)	190 (71)	65 (24)	14 (5)		

KEY: N=Never, S=Sometimes, A=Always

Table 49: Association between BMI and Selected Foot Care Practices among Respondents

Variable	Response	Underweight n (%)	Normal n (%)	Overweight n (%)	Obese n (%)	χ^2	p-value
Toenails	No	0 (0)	348 (65)	162 (31)	22 (4)	41.056	<0.001
	Yes	19 (4)	302 (65)	147 (31)	0 (0)		
Lotions/creams	No	19 (4)	289 (57)	180 (35)	22 (4)	57.016	<0.001
	Yes	0 (0)	361 (74)	129 (26)	0 (0)		
Supportive footwear	No	19 (4)	259 (57)	165 (36)	8 (2)	39.646	<0.001
	Yes	0 (0)	391 (71)	144 (26)	14 (3)		
Cleaning regimen	No	5 (1)	338 (67)	150 (30)	14 (3)	7.007	0.072
	Yes	14 (3)	312 (63)	159 (32)	8 (2)		
Exercises	No	19 (3)	336 (62)	169 (31)	22 (4)	36.310	<0.001
	Yes	0 (0)	314 (69)	140 (31)	0 (0)		
Insoles	No	14 (2)	359 (60)	209 (35)	22 (4)	29.854	<0.001
	Yes	5 (1)	291 (73)	100 (25)	0 (0)		
Standing less	No	19 (3)	376 (65)	165 (29)	14 (2)	16.528	0.001
	Yes	0 (0)	274 (64)	144 (34)	8 (2)		
Foot bath	No	0 (0)	297 (72)	110 (27)	8 (2)	22.856	<0.001
	Yes	19 (3)	353 (60)	199 (34)	14 (2)		
Orthotics	No	19 (4)	302 (66)	125 (27)	14 (3)	28.942	<0.001
	Yes	0 (0)	348 (64)	184 (34)	8 (1)		

4.7 Hypothesis Testing

Hypothesis 1: There will be no significant association between age and foot health among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.001

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 2: There will be no significant association between age and foot care among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.001

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 3: There will be no significant association between gender and foot health among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value for the association with most foot health indicators is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 4: There will be no significant association between gender and foot care among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value for the association with most foot care practices is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 5: There will be no significant association between marital status and foot health among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.001

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 6: There will be no significant association between marital status and foot care among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.001

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 7: There will be no significant association between level of education and foot health among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value for the association with most foot health indicators is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 8: There will be no significant association between level of education and foot care among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value for the association with most foot care practices is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 9: There will be no significant association between occupational status and foot health among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value for the association with at least one foot health indicator is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 10: There will be no significant association between occupational status and foot care among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value for the association with at least one foot care practice is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 11: There will be no significant association between BMI and foot health among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.001

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore REJECTED.

Hypothesis 12: There will be no significant association between BMI and foot care among apparently healthy adults in Benin City.

Test: Chi-Square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value for the association with nearly all foot care practices is less than 0.05; the null hypothesis is therefore REJECTED.

CHAPTER FIVE

5.1 DISCUSSION

5.1.1 Sociodemographic Characteristics

The finding that there were more male than female respondents suggest a higher prevalence of foot related musculoskeletal pain or different health-seeking behaviours among the male population in Benin City. This finding is contrary to a large international consortium study by Gates et al. (2019), which found that foot pain was generally more prevalent in women. However, it aligns with research indicating gender differences in health behaviours, such as the study by Feleke et al. (2025) which noted that being female was a predictor of better self-care practices. The discrepancy in prevalence might be due to the fact that men in Benin City are more likely to report pain or it could reflect a higher engagement in activities that precipitate foot related musculoskeletal issues.

The present study's results showed that a substantial portion of respondents belonged to the older age brackets within the adult sample. This implies that age is a progressive factor in the experience of foot health issues. This observation is strongly corroborated by the work of Genc et al. (2022) and Nazarko (2007), who both highlighted a rise in foot-related health problems among older individuals. Furthermore, a systematic review by Thomas et al. (2011) found that the prevalence of foot and ankle pain increases in middle and old age. The consistency of this finding with the broader literature suggests that the physiological effects of aging on the musculoskeletal system are a universal and continuous process.

The study also revealed that a significant majority of respondents had attained a university education. This finding, however, challenges the assumption that a high level of general

education directly translates to heightened health awareness and proactive self-care practices. This observation contrasts with the results of a study in Nigeria by Desalu et al. (2011), which linked illiteracy to poor knowledge and practice of foot care. The difference suggests that while foundational education is important, it is not a substitute for specific foot health literacy. The present study's finding is reinforced by Manickum et al. (2021), who in a scoping review found variable knowledge and practice levels across different populations, indicating that even educated individuals may lack specific health knowledge.

5.1.2 Knowledge and Attitudes towards Foot Health

The finding that a considerable number of adults rated the care of their feet as highly important, while a larger proportion admitted to giving their foot health no thought at all, reveals a significant disconnect between perceived importance and practical engagement. This suggests a notable "attitude-behaviour gap," where theoretical knowledge does not translate into daily practice. This apathy is not an isolated phenomenon; it is corroborated by a survey from the American Podiatric Medical Association (APMA, 2014) which found that foot health consistently ranks low on the list of health priorities for most Americans. The reason for this neglect, as suggested by Nazarko (2007), may be the common perception of foot problems as non-life-threatening, leading to their dismissal until they become significantly debilitating.

Furthermore, the present study's results showed that a substantial number of respondents disagreed with the statement that feet can be an important indicator of other serious health problems points to a significant gap in their health knowledge. This implies a lack of awareness regarding the systemic relevance of foot health. This finding agrees with the APMA (2014) survey, which also highlighted limited public awareness that systemic conditions like diabetes and circulatory disorders can be detected through a foot examination. For a generally well-

educated adult population, this knowledge deficit is concerning as it represents a barrier to preventive health and may lead to delayed diagnosis of serious underlying conditions.

5.1.3 Foot Health - Ailment, Pain and Activity Limitations

The study revealed a high prevalence of foot ailments, with pain in the ball of the feet, nail problems, and heel pain being the most commonly reported issues. This indicates a significant burden of musculoskeletal pain within this adult population. This finding is consistent with the broader literature; a systematic review by Thomas et al. (2011) estimated the population prevalence of foot pain to be substantial, and a study by Hill et al. (2008) also found a high prevalence, noting its association with various demographic and health factors. The similarity in findings suggests that musculoskeletal foot pain is a widespread public health issue that affects diverse populations, including apparently healthy adults.

The finding that foot pain had a considerable impact on the adults' daily lives, particularly inhibiting sleep and affecting their work and other activities, highlights that musculoskeletal pain is a debilitating condition that compromises quality of life. This is corroborated by international research, such as the study by Hill et al. (2008) which found that individuals with foot pain scored significantly lower on all domains of the SF-36 health-related quality of life scale. The reason for this significant impact is likely that persistent pain can disrupt concentration, limit physical endurance, and contribute to overall stress and fatigue, thereby affecting an individual's productivity and overall well-being.

5.1.4 Foot Care

The present study's finding that respondents showed a preference for seeking health information

from online resources rather than consulting a physiotherapist reflects a global trend towards self-directed health research. This behaviour is corroborated by the APMA (2014) survey, which noted that online searches were a common source of health information. A study in Pakistan by Ali et al. (2016) also highlighted a concerning trend where many diabetic patients would resort to self-medication for foot injuries, indicating a broader reluctance to consult professionals. This avoidance of professional consultation could be due to factors such as convenience, perceived cost, or an overestimation of one's own ability to self-diagnose and manage health issues.

The results of the present study also found that a high number of respondents used doctor-prescribed orthotics, which suggests a reactive, treatment-oriented approach to foot health. This implies that interventions are typically sought only after a problem has become significant. This finding stands in sharp contrast to several Nigerian studies on diabetic patients, such as those by Desalu et al. (2011) and Ikpeme et al. (2010), which reported overwhelmingly poor and often non-existent foot care practices. However, the scoping review by Manickum et al. (2021) helps to explain this, noting a common gap between knowledge and practice. It is plausible that while the diabetic populations in other Nigerian studies lacked both knowledge and practice, the adults in the present study may possess some knowledge but fail to act on it proactively, only seeking treatment when pain necessitates it.

5.1.5 Factors Influencing Foot Health and Care

The results of the present study revealed a significant association between age and the participants' knowledge, attitudes, experience of ailments, and self-care regularity. This reinforces the understanding that both the physical experience and the perception of foot health evolve over an individual's life. This finding is consistent with multiple studies, including Gates et al. (2019) and Genc et al. (2022), which have established age as a primary factor in the

prevalence and nature of foot problems. The reason for this is the cumulative effect of mechanical stress and physiological changes on the musculoskeletal system over time.

Gender also emerged as a significant factor influencing attitudes, the experience of certain ailments, and specific care practices. This aligns with a large body of literature suggesting differences in health-seeking behaviours and health priorities between men and women. A study by Nazarko (2007) found that women are more likely to suffer from foot problems, often attributed to footwear choices, which may lead to different types of ailments and care-seeking patterns compared to men.

The present study's finding that marital status showed a strong and consistent association with all measured aspects of foot health and care suggests that an individual's social context is a powerful determinant of their health behaviours. This implies that the presence of a partner or a supportive family structure may play a crucial role in encouraging or facilitating health-seeking behaviours and adherence to self-care routines. The reasons for this are likely multifaceted, involving shared health goals, mutual encouragement, and practical assistance with care.

Similarly, the present study found that Body Mass Index (BMI) demonstrated a significant association with nearly all aspects of foot health. This is consistent with a large body of evidence linking higher BMI to increased stress on the musculoskeletal system, particularly in the lower limbs. These various findings collectively underscore that foot health and care are not determined by a single factor, but by a complex interplay of demographic, social, and physical characteristics.

5.2 Conclusion

Foot-related health issues and pain represent a significant and debilitating health challenge

among apparently healthy adults in Benin City. The high frequency of reported ailments, coupled with their substantial negative impact on daily activities such as sleep and work, establishes that foot pain is a critical issue that compromises the overall quality of life and functional capacity of these apparently healthy adults. The knowledge of foot health and care among apparently healthy adults in Benin City is fair to good but their attitudes towards foot health and care is suboptimal. While these adults may acknowledge the importance of foot health in theory, this belief does not translate into consistent practical attention or proactive foot care behaviours.

The foot care practices of these apparently healthy adults in Benin City are predominantly reactive and informal. There is a clear tendency within this population to rely on self-directed online research over professional consultation and to seek treatment-oriented interventions, like orthotics, only after problems have become significant, rather than engaging in routine preventive care. This indicates a health-seeking behaviour model that prioritizes cure over prevention. Sociodemographic factors such as age, gender, and education level, marital status, occupational status and anthropometric factors (BMI) influence the foot health and care among apparently healthy adults in Benin City.

5.3 Recommendations

Develop Targeted Public Health Campaigns: Public health authorities and healthcare providers should launch educational campaigns aimed at the general adult population. These campaigns should focus on bridging the identified "attitude-behaviour gap" by moving beyond general awareness to promote specific, actionable preventive foot care behaviours. Content should emphasize the connection between foot health and overall systemic health; a key knowledge deficit identified in this study.

Promote Proactive Foot Care Practices: Healthcare professionals, particularly at the primary care level, should actively encourage a shift from a reactive to a proactive model of foot care. This includes advising on routine self-examination, the importance of appropriate footwear, and simple preventive exercises. This recommendation is supported by the findings that showed a reliance on treatment-oriented solutions like orthotics rather than preventive measures.

Enhance the Role of Physiotherapists and Podiatrists: There is a need to increase the visibility and accessibility of specialized foot health professionals. Public awareness initiatives should highlight the expertise of physiotherapists and podiatrists in diagnosing and managing foot conditions, thereby encouraging direct consultation over reliance on unverified online sources. This aligns with the findings that showed a preference for informal information-seeking.

Integrate Foot Health into General Wellness Programs: Workplace and community wellness programs should incorporate modules on foot health. Given the significant impact of foot pain on work and daily activities, integrating this topic into broader health programs could improve productivity and quality of life. This is particularly relevant given the association found between factors like BMI and foot health.

5.4 Implications for Further Study

Qualitative Exploration of Barriers to Care: The current study identified that adults prefer online sources to professional consultation but did not explore the underlying reasons for this behaviour. A qualitative study, using in-depth interviews or focus groups, could investigate the specific barriers—such as cost, accessibility, trust in the healthcare system, or cultural beliefs—that prevent individuals from seeking professional foot care. This would provide the necessary context to design more effective health interventions.

Clinical and Etiological Investigation: This study relied on self-reported data on foot ailments and pain. It was beyond its scope to perform clinical examinations to determine the specific etiology of these complaints (e.g., plantar fasciitis, hallux valgus, osteoarthritis). Future research involving clinical assessments and diagnostic imaging would be necessary to establish the precise prevalence of specific foot pathologies within this population and to validate the self-reported findings.

Longitudinal Study on Risk Factors: As a cross-sectional study, this research identified associations between sociodemographic factors (like age and BMI) and foot health, but it could not establish causality. A longitudinal cohort study would be invaluable to track the incidence and progression of foot problems over time and to more definitively identify the risk factors that predict the onset of foot pain and disability in the Benin City population.

Interventional Research: The recommendations from this study propose educational interventions. A crucial next step would be to design and implement a foot health education program and evaluate its effectiveness through a randomized controlled trial. Such a study would provide evidence on whether targeted education can successfully improve knowledge, change attitudes, and, most importantly, lead to better foot care practices and a reduction in the prevalence of foot pain.

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APPENDIX I

INFORMED CONSENT

My name is Ogbeide-Ihama Mary, a final year student of the Department of Physiotherapy, College of Basic Medical Sciences, University of Benin, Benin City, Edo State. I am carrying out a study titled: **KNOWLEDGE, ATTITUDE AND PRACTICE OF FOOT HEALTH AND CARE AMONG APPARENTLY HEALTHY ADULTS IN BENIN CITY, EDO STATE**. This study will be conducted as part of the requirement for the award of Bachelor of Physiotherapy (B.PT). Your participant is voluntary and you are free to ask questions about the study and you are also free to withdraw at any time you desire. Your response will be strictly confidential and will be used solely for the purpose of this research. Please kindly include your signature and date if you are willing to participate.

Participant's signature

.....

Researcher's signature

.....

APPENDIX II

AMERICAN PODIATRIC MEDICAL ASSOCIATION FOOT HEALTH AND CARE QUESTIONNAIRE

SECTION A: SOCIO-DEMOGRAPHICS

1. Age:

18 – 25 years []

26 – 35 years []

36 – 45 years []

46 – 55 years []

56 – 65 years []

> 65 years []

2. Gender:

Male []

Female []

3. Marital status:

Single []

Married []

Divorced []

Widowed []

Separated []

4. Level of Education:

No formal education []

Primary school []

Secondary school []

University education []

5. Occupational Status:

Unemployed []

Self Employed []

Civil Servant []

Private Employment []

Retired []

6. Height Weight BMI

SECTION B: Foot Health and Care

1. Please indicate how important the care of each of the following is to you:

i. The heart:

() Very Important () Slightly Important () Not at All Important

ii. The eyes:

() Very Important () Slightly Important () Not at All Important

iii. The teeth:

() Very Important () Slightly Important () Not at All Important

iv. The skin:

() Very Important () Slightly Important () Not at All Important

v. The nutrition:

() Very Important () Slightly Important () Not at All Important

vi. The feet:

() Very Important () Slightly Important () Not at All Important

vii. Regular exercise:

() Very Important () Slightly Important () Not at All Important

2. On a scale from 1 to 10, how much thought do you give to the health of your feet?

No thought at all - 1 2 3 4 5 6 7 8 9 10 – A great deal of thought

3. How much do you agree or disagree with each of the following statements?

i. It is important to pay attention to feet and get them the care they need:

() Agree () Neither Agree nor Disagree () Disagree

ii. Foot health is fundamental to your overall well-being:

() Agree () Neither Agree nor Disagree () Disagree

iii. Feet can be an important indicator of other serious health problems:

() Agree () Neither Agree nor Disagree () Disagree

iv. Feet are incredibly complex and require expert care by a podiatrist:

() Agree () Neither Agree nor Disagree () Disagree

SECTION C: Foot Ailments and General Health

4. Have you ever experienced any of the following foot ailments? (Mark all that apply)

☐ Nail problems

☐ Sweaty feet/foot odor

☐ Heel pain/plantar fasciitis

☐ Pain in the ball of feet

☐ Pain from high heels

☐ Bunions

☐ Bone spurs

☐ Tendinitis

☐ Stress fractures

☐ Hammertoes

☐ Pinched nerve/neuroma

☐ Other (please specify): _____

☐ None of the above

5. How often do you experience foot pain?

() All of the time

() Most of the time

() Some of the time

() Rarely

() Never

6. How often do you experience each of the following ailments?

i. Weight issues:

() Frequently () Slightly often () Not at all

Back pain/discomfort:

() Frequently () Slightly often () Not at all

ii. Eyesight issues:

() Frequently () Slightly often () Not at all

iii. Joint pain/arthritis:

() Frequently () Slightly often () Not at all

iv. Knee pain/discomfort:

() Frequently () Slightly often () Not at all

v. Skin issues/acne:

() Frequently () Slightly often () Not at all

vi. Dental pain/discomfort:

() Frequently () Slightly often () Not at all

vii. Circulatory issues/ailments:

() Frequently () Slightly often () Not at all

viii. Heart issues:

() Frequently () Slightly often () Not at all

7. Has foot or ankle pain ever inhibited or stopped you from performing any of the following activities? (Mark all that apply)

☐ Walking

☐ Standing up for long periods of time

☐ Exercising

☐ Sleeping

☐ Going to work/doing your job

☐ Playing with children/grandchildren

☐ Traveling for leisure or business

☐ Other (please specify): _____

☐ Not applicable / I have not experienced foot or ankle pain that restricted activities

8. If your feet didn't hurt, how well would each of the following statements describe you?

i. I would exercise more:

() Perfectly well () Somewhat well () Not at all

ii. I would walk more:

() Perfectly well () Somewhat well () Not at all

iii. I would participate in more activities:

() Perfectly well () Somewhat well () Not at all

SECTION D: Foot Care Practices

9. How regularly do you do each of the following?

i. Care for your teeth (e.g., brushing, flossing):

() All the time () Some of the time () Never

ii. Care for your eyes (e.g., check-ups):

() All the time () Some of the time () Never

iii. Care for your heart (e.g., diet, managing stress):

() All the time () Some of the time () Never

iv. Care for your skin (e.g., moisturizing, sun protection):

() All the time () Some of the time () Never

v. Care for your feet:

() All the time () Some of the time () Never

vi. Engage in regular exercise:

() All the time () Some of the time () Never

vii. Follow a nutritious diet:

() All the time () Some of the time () Never

10. Which of the following activities do you do to care for your feet? (Select all that apply)

☐ Keep toenails trimmed

☐ Apply over-the-counter lotions/creams to your feet

- ☐ Purchase supportive/comfortable footwear
- ☐ Have a cleaning regimen for feet
- ☐ Do leg/ankle/foot exercises
- ☐ Use over-the-counter insoles for shoes
- ☐ Reduce the amount of time standing
- ☐ Use an at-home foot bath
- ☐ Use doctor prescribed orthotics for shoes
- ☐ Other (please specify): _____
- ☐ None of the above

SECTION E: Information Seeking and Podiatry

11. How well does each of the following statements describe you?

- i. I want to know more about how to take care of my feet:
() Perfectly well () Somewhat well () Not at all
- ii. I want to know where to find the best podiatrist in my area:
() Perfectly well () Somewhat well () Not at all
- iii. I want to know where to seek help for foot pains/ailments I experience:
() Perfectly well () Somewhat well () Not at all

12. If you had questions about your foot health, where would you look for information? (Select all that apply)

- ☐ Talk to a primary care physician
- ☐ Talk to a physiotherapist
- ☐ Look for information using an online search engine (e.g., Google)
- ☐ Look for information on specific health-information websites (e.g., WebMD)
- ☐ Talk to a podiatrist
- ☐ Talk to a pharmacist
- ☐ Look for information on online forums
- ☐ Ask a friend or family member

☐ None of the above

☐ Other (please specify): _____

13. If you have experienced a foot ailment, which of the following have you done to address it? (Select all that apply. If you have not experienced a foot ailment, skip to Q15.)

☐ Treated with over-the-counter products

☐ Visited my primary care physician

☐ Visited a physiotherapist

☐ Visited a pharmacist

☐ Nothing - lived with the foot pain or problem

☐ Visited a specialist

☐ Other (please specify): _____

14. If "Visited a specialist" in Q13: Which of the following types of specialists did you visit for your foot ailment/s? (Select all that apply)

☐ Podiatrist

☐ Orthopedist

☐ Physical therapist

☐ Dermatologist

☐ Pharmacist

☐ Other (please specify): _____

15. Have you ever visited any of the following types of medical professionals for any reason?

(Yes/No for each)

Primary care physician: ☐ Yes ☐ No

Dentist: ☐ Yes ☐ No

Optometrist/Ophthalmologist: ☐ Yes ☐ No

Dermatologist: ☐ Yes ☐ No

Chiropractor: ☐ Yes ☐ No

Orthopedist/Orthopedic surgeon: ☐ Yes ☐ No

Podiatrist: ☐ Yes ☐ No

Pharmacist: ☐ Yes ☐ No

Physiotherapist: ☐ Yes ☐ No

16. If "Yes" to visiting a Podiatrist in Q15: When was your most recent visit to a podiatrist?

() Within the last year

() 1-2 years ago

() More than 2 years ago

() Don't recall

17. How familiar are you with the kind of work that each of these medical professionals does?

i. Primary care physician:

() Very familiar () Somewhat familiar () Not at all familiar

ii. Physiotherapist:

() Very familiar () Somewhat familiar () Not at all familiar

iii. Pharmacist:

() Very familiar () Somewhat familiar () Not at all familiar

iv. Dentist:

() Very familiar () Somewhat familiar () Not at all familiar

v. Optometrist/Ophthalmologist:

() Very familiar () Somewhat familiar () Not at all familiar

vi. Dermatologist:

() Very familiar () Somewhat familiar () Not at all familiar

vii. Chiropractor:

() Very familiar () Somewhat familiar () Not at all familiar

viii. Orthopedist/Orthopedic surgeon:

() Very familiar () Somewhat familiar () Not at all familiar

ix. Podiatrist:

() Very familiar () Somewhat familiar () Not at all familiar

18. At what point would a foot ailment prompt you to see a podiatrist? (Select all that apply. If you have never experienced a foot ailment, please answer based on what you would anticipate.)

- ☐ As soon as I notice/feel something unusual about my feet
- ☐ When something unusual persists for a few days
- ☐ When something unusual cannot be treated with an over-the-counter product
- ☐ When something unusual starts to cause pain
- ☐ When something unusual starts to put limitations on my lifestyle/activities
- ☐ I'd never think to go to a podiatrist
- ☐ Other (please specify): _____

19. If you developed any of the following foot ailments/issues or needed the following treatments, how likely would you be to consider visiting a podiatrist?

i. Foot surgery:

() Very Likely () Neither Likely nor Unlikely () Very Unlikely

ii. Ankle surgery:

() Very Likely () Neither Likely nor Unlikely () Very Unlikely

iii. Foot infection:

() Very Likely () Neither Likely nor Unlikely () Very Unlikely

iv. Bone spurs:

() Very Likely () Neither Likely nor Unlikely () Very Unlikely

v. Stress fractures:

() Very Likely () Neither Likely nor Unlikely () Very Unlikely

vi. Pinched nerve/neuroma:

() Very Likely () Neither Likely nor Unlikely () Very Unlikely

vii. Diabetic wound care:

() Very Likely () Neither Likely nor Unlikely () Very Unlikely

viii. Heel pain/plantar fasciitis:

() Very Likely () Neither Likely nor Unlikely () Very Unlikely

ix. Hammertoes:

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

x. Tendinitis (Achilles or other):

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

xi. Pain in the ball of the feet:

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

xii. Bunions:

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

xiii. Nail problems:

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

xiv. Plantar warts:

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

xv. Sweaty feet/foot odor:

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

xvi. Pain from wearing high heels:

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

xvii. Blisters:

☐ Very Likely ☐ Neither Likely nor Unlikely ☐ Very Unlikely

20. If you have ever visited a Primary Care Physician for a foot ailment: Thinking about the last time you visited your Primary Care Physician for a foot ailment, how would you describe your overall experience?

☐ Excellent

☐ Fair

☐ Poor

☐ Not applicable / Have not visited PCP for foot ailment

21. If you have ever visited a Podiatrist (selected "Yes" in Q15): Thinking about the last time you visited a Podiatrist for a foot ailment, how would you describe your overall experience?

☐ Excellent

☐ Fair

☐ Poor

☐ Not applicable / Have not visited podiatrist for foot ailment

22. If you have ever visited a Physiotherapist (selected "Yes" in Q15): Thinking about the last time you visited a Podiatrist for a foot ailment, how would you describe your overall experience?

☐ Excellent

☐ Fair

☐ Poor

☐ Not applicable / Have not visited physiotherapist for foot ailment

23. If you have ever visited a pharmacist (selected "Yes" in Q15): Thinking about the last time you visited a Podiatrist for a foot ailment, how would you describe your overall experience?

☐ Excellent

☐ Fair

☐ Poor

☐ Not applicable / Have not visited pharmacist for foot ailment

24. If you have ever visited a Podiatrist (selected "Yes" in Q15): Keeping in mind your last experience seeing a podiatrist, please indicate your agreement with the following statements:

i. The podiatrist was able to quickly give me a clear diagnosis:

☐ Agree ☐ Neither Agree nor Disagree ☐ Disagree

ii. The podiatrist prescribed an effective treatment/medication that helped my foot/ankle issues improve or go away:

☐ Agree ☐ Neither Agree nor Disagree ☐ Disagree

iii. The podiatrist was involved in diagnosing or treating other health-related issues I have (e.g., diabetes, nerve issues, circulatory issues):

☐ Agree ☐ Neither Agree nor Disagree ☐ Disagree

iv. The podiatrist helped me identify other health-related issues I have (e.g., diabetes, nerve issues, circulatory issues):

☐ Agree ☐ Neither Agree nor Disagree ☐ Disagree

25. If you have ever visited a Podiatrist (selected "Yes" in Q15): What were your primary reasons for visiting a podiatrist? (Open-ended)

26. Which of the following health issues, if any, do you think can be diagnosed or detected during a foot exam? (Select all that apply)

- ☐ Circulatory disorders
- ☐ Nerve disorders
- ☐ Diabetes
- ☐ Arthritis
- ☐ Skin cancer
- ☐ Need for knee/hip replacement
- ☐ Scoliosis
- ☐ Heart disease
- ☐ Asthma
- ☐ Lung cancer
- ☐ Not sure
- ☐ None of the above

SECTION F: Footwear

27. How well does each of the following statements describe you?

- i. I want shoes to be more comfortable:
() Perfectly well () Somewhat well () Not at all
- ii. I want my feet to look better:

() Perfectly well () Somewhat well () Not at all

28. Which of the following types of shoes do you own? (Select all that apply)

- ☐ Athletic or running shoes
- ☐ Boots
- ☐ Sandals
- ☐ Flip flops
- ☐ Canvas sneakers (e.g., Converse, Keds)
- ☐ Loafers
- ☐ High heels (Typically shown to female respondents or all with note)
- ☐ Flats (e.g., ballet flats) (Typically shown to female respondents or all with note)
- ☐ Uggs/other type of winter shoe (Typically shown to female respondents or all with note)
- ☐ Barefoot running shoes (e.g., Vibrams)
- ☐ Other (please specify): _____

29. For each type of shoe you indicated owning in Q26, do you experience pain when wearing it?

(Yes/No for each type owned)

Athletic or running shoes: ☐ Yes ☐ No ☐ N/A (Don't own)

Boots: ☐ Yes ☐ No ☐ N/A (Don't own)

Sandals: ☐ Yes ☐ No ☐ N/A (Don't own)

Flip flops: ☐ Yes ☐ No ☐ N/A (Don't own)

Canvas sneakers: ☐ Yes ☐ No ☐ N/A (Don't own)

Loafers: ☐ Yes ☐ No ☐ N/A (Don't own)

High heels: ☐ Yes ☐ No ☐ N/A (Don't own)

Flats: ☐ Yes ☐ No ☐ N/A (Don't own)

Uggs/other winter shoe: ☐ Yes ☐ No ☐ N/A (Don't own)

Barefoot running shoes: ☐ Yes ☐ No ☐ N/A (Don't own)

Other (type specified in Q31): ☐ Yes ☐ No ☐ N/A (Don't own)

(The following questions Q28 - Q30 are for respondents who indicated they are female AND own high heels.)

30. (If female and own high heels): How often do you wear high heels?

- ☐ Daily
- ☐ Several times a week
- ☐ About once a week
- ☐ 2-3 times a month
- ☐ About once a month
- ☐ Less than once a month / Rarely
- ☐ Never (though I own them)
- ☐ Not sure

31. (If female and own high heels): Approximately how many pairs of high heels do you own?

_____ (pairs)

32. (If female and own high heels): At what point do high heels become too high for you? (Select the lowest height that you consider too high)

- ☐ 1 inch
- ☐ 2 inches
- ☐ 3 inches
- ☐ 4 inches
- ☐ 5 inches or higher
- ☐ All high heels are too high for me
- ☐ Not sure

APPENDIX III

ETHICAL APPROVAL

	EDO STATE MINISTRY OF HEALTH HEALTH RESEARCH ETHICS COMMITTEE	
PROTOCOL NUMBER	HA/737/25/D/08050864 (PLEASE QUOTE IN ALL ENQUIRIES)	
APPROVAL NUMBER	HA/737/25/D/09080864	
TITLE OF RESEARCH PROPOSAL	KNOWLEDGE, ATTITUDE AND PRACTICE OF FOOT HEALTH AND CARE AMONG APPARENTLY HEALTHY ADULTS IN BENIN CITY, EDO STATE	
PRINCIPAL INVESTIGATOR (S)	OGBEIDE-IHAMA MARY	
DATE CONSIDERED	8TH SEPTEMBER, 2025.	
DECISION OF THE COMMITTEE	APPROVED	

THIS APPROVAL DATES 08/09/2025 TO 08/09/2026. IF THERE IS A DELAY IN STARTING THE RESEARCH, PLEASE INFORM THE HREC EDO SMoH SO THAT THE DATES OF APPROVAL CAN BE ADJUSTED ACCORDINGLY

REMARK: Please kindly note that the HREC Edo SMoH seal authenticates this approval

DR (MRS) Omonyemen B. BELLO
(MBBS, MPH, FPHCM) (CHAIRMAN)

SIGNATURE & DATE.....
Bello
19/9/25

SUPERVISOR(S)

ATTESTATION BY INVESTIGATOR(S)

No participant accrual or activity related to this research may be conducted outside of the approval dates. All informed consent forms used in this study must carry the Edo SMoH HREC-assigned number and duration of your research. No changes are permitted in the research without prior approval of the Edo SMoH HREC except in circumstances outlined in the Code. The Edo SMoH HREC reserves the right to conduct compliance visits to your research site without previous notification.



Signature & Date.....

 edohrec@edostate.gov.ng

 Room 16, Block D, 2nd floor, State secretariat building.