

## Original Article

# Experiences of podiatrists in the delivery of routine foot care with self-management

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## Abstract

**Objective:** Explore the experiences of podiatrists in the provision of foot care and identify gaps in promoting self-care to their patients.

**Methods:** This study adopted a qualitative research paradigm comprising semi-structured interviews with 16 podiatrists from diverse clinical settings and varying experiences from February to May 2023. The data was analyzed inductively to develop themes.

**Results:** Four themes emerged from the data: 1) Provision of nail care service, 2) Perceived reasons for referral for podiatric nail care, 3) Self-management with various patient sub-groups, and 4) Effectiveness of self-management, all from our participants' perspective. Podiatrists agree that pathological nails and high-risk feet warrant continual podiatry care. However, the majority are ambivalent about providing care for non-pathological nails due to fear, indifference, lack of social support, and physical limitations. Interviewees reported the importance of managing patients' expectations of the role of podiatry in nail care from the first visit to avert potential over-reliance on the service. Clear explanations and equipping patients with the appropriate tools helped promote self-management.

**Conclusion:** This paper examined the complexity of the demand for podiatry nail care services, focusing on podiatrists' perspectives. It emphasized the importance of effective communication with patients to clarify the purpose of podiatry and to ensure sustainable podiatry care for the future.

**Level of evidence V; Therapeutic studies - investigating the results of treatment; Expert Opinion.**

**Keywords:** Nail diseases; Qualitative research; Self-management.

## Introduction

Onychia and onychomycosis are some of the many nail issues affecting older peoples' social and emotional well-being<sup>(1-4)</sup>. Historically, podiatrists have been involved in nail cases, diabetic limb salvage, and musculoskeletal conditions. With the limited amount of podiatrists and rising demand for podiatric services, some governments have reconsidered podiatrists' scope of practice and prioritization of services. The United Kingdom (UK) has adopted strategies to encourage less dependence on healthcare institutions for nail care, encouraging patients to self-care instead<sup>(5,6)</sup>.

Singapore's podiatry profession was established in 1993. According to an informal survey conducted by the Podiatry

Association Singapore in 2021, all 127 podiatrists were trained overseas due to lacking a local program. Podiatric care is available in public and private healthcare, with private care offering non-subsidized but faster appointments. In Singapore, non-healthcare providers (pedicurists) provide basic foot care services.

Singapore's aging population amplifies the urgency to optimize podiatry services, especially with the current shortage of podiatrists. Singapore lags in podiatrist-to-population ratio compared to global standards<sup>(7)</sup>. In 2021, the Singapore population stood at a ratio of 2 podiatrists per 100,000 people. Comparatively, New Zealand has a ratio of approximately 8.5 podiatrists per 100,000 people, whereas Australia and the UK estimate 20 podiatrists per 100,000 people<sup>(7)</sup>.

Study performed at the Ng Teng Fong General Hospital, Singapore.

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To date, little is known about the current experiences among podiatrists in Singapore regarding managing toenail conditions and the effectiveness of educating patients on self-management. Therefore, this study aims to explore the experiences of Singapore’s podiatrists in providing foot care and identify gaps in promoting self-care.

## Methods

### Design

Inspired by the social-ecological model, this study explored factors related to nail care through semi-structured interviews. This data collection method allowed participants to express themselves freely and ensured no omission of important topics. The interview guides were tested on two podiatrists not part of the recruitment. Based on their feedback, the topic guide was adjusted accordingly. Ethical approval from the NHG Domain Specific Review Board (Ref: 2022/00129-SRF0001) was obtained.

### Recruitment and procedure

Sixteen interviews were conducted from 23<sup>rd</sup> Feb 2023 to 10<sup>th</sup> May 2023 (Table 1). Podiatrists were recruited from acute to subacute care via convenience sampling to gain a fuller perspective.

The participant must be a podiatrist working in Singapore who is willing to be interviewed to be eligible for the study. Recruitment emails were sent to podiatrists to invite them to participate in the interview.

Interviewees were briefed verbally and in writing. The exploratory nature of the discussion was emphasized, and

participants were given the option of withdrawing or ending the interview at any point. The interviews were conducted in English by three investigators (BK, AH, and CL), lasted 27 to 61 minutes on average (mean: 36 mins), and were facilitated via Zoom. Investigators conducted the interviews in private rooms, and participants were advised to do the same to ensure confidentiality. Field notes were taken, and interviews were audio-recorded, transcribed verbatim, and anonymized using pseudonyms.

### Data analysis

This study adopted an interpretive research paradigm to analyze the podiatrist’s decisions and perspectives on general care.

Transcripts were coded using inductive and deductive approaches, with thematic content analysis conducted with Excel. All four researchers were randomly allocated to transcribe and code transcripts to ensure impartiality. Researchers carefully read the transcript to familiarise themselves with the content before performing line-by-line analysis to identify emerging themes. Themes and sub-themes were derived from the analysis. After coding the transcript, investigators met to discuss the coding through an iterative consensus-building process. With a codebook, re-coding was done independently with a deductive approach while ensuring the codebook was extensive and reflective of each transcript analyzed. Member checks were done to ensure inter-coder reliability and validity of the data. Data saturation was reached with the number of interviews performed. Study findings were returned to participants who were agreeable to be contacted again for comments and clarifications.

**Table 1.** Participant demographics

Participant	Sex	Length of time in podiatry (years)	Duration of the interview (mins)	Age range (20-30/31-40/41-50/51-60)	Institution (Primary/Tertiary/ Private)
1	F	6 -12	27	31-40	Tertiary
2	F	2 - 6	33	20-30	Tertiary
3	F	>12	30	41-50	Tertiary
4	F	0 - 2	30	20-30	Tertiary
5	F	2 - 6	42	20-30	Private
6	F	2 - 6	59	20-30	Tertiary
7	F	2 - 6	33	20-30	Tertiary
8	F	>12	45	31-40	Tertiary
9	F	6 -12	33	31-40	Primary
10	M	6 -12	30	31-40	Private
11	F	> 12	25	31-40	Primary
12	F	6 - 12	61	31-40	Tertiary
13	M	> 12	25	31-40	Private
14	F	2 - 6	48	20-30	Primary
15	M	0 - 2	34	20-30	Primary

## Researcher reflexivity

As podiatrists within the acute setting, we were interested in understanding how podiatrists' perspectives may corroborate in general care and self-management. Acknowledging the potential for a dependent relationship between researchers and interviewees, the researchers established clear boundaries, assured participants confidentiality, and emphasized non-judgmental inquiry. As podiatrists, the researchers could empathize with participants' experiences, which might influence the questioning direction.

## Results

Four major themes were identified: (1) Podiatrist perception of nail care services, (2) Perceived reasons for patient presentation for podiatric nail care, (3) Podiatrist perception of self-management on various groups of patients, and (4) Podiatrist perception regarding the effectiveness of self-management. It should be noted that themes and sub-themes are distinct yet mutually related.

### Theme 1: Podiatrist perception of nail care service

#### *Podiatrist value in nail care*

Podiatrists know they are valued in healthcare as the medical profession that looks after nails. It is in their skill set to help patients with foot problems and, in some cases, safeguard them from infection and amputations. They prefer treating pathological nails, which adds value to their patients.

"I think we are the best people to treat pathological nails. Because if a nail is truly pathological, it is a skill to be able to cut a thick onychogryphotic nail, to cut an ingrown toenail in a way to encourage it to grow properly and not cause the patient harm or pain." (P08/F)

"I know it's too long and too thick, and there's no other profession that can do it; we actually save a toe. Unknowingly, the hard work does save, save feet." (P01/F)

#### *Podiatrist view on non-pathological nails*

However, most podiatrists feel that they do not value dealing with non-pathological nails and, in some cases, prefer not to see those cases. Three participants used strong words like "hate" or something that needs to be "get rid of". They likened the service of non-pathological nails to a non-medical need that should not require podiatrist intervention.

"I hate personally cutting nails, it's because nail growing is not an abnormality. It's normal, it's normal for nails to grow long, just like how your hair grows long, so you know there is no need for a special service for you to trim your hair, so why is there a need for professional and medical help to trim your nails?" (P16/F)

Most podiatrists believe that non-pathological nails are a social problem that their profession should not address but someone else.

"I'm here to treat nails that are medically indicated to treat... trouble reaching their nails, then that's when it becomes more of a social issue" (P15/M)

"Podiatrists are medical professionals, so we should really be only treating nails that have an actual issue, so pathological conditions or high-risk patients... There should be a step-down care below to offer that service, or like a social service" (P09/F)

#### *Podiatrist tension in value towards nail care*

Some podiatrists feel that some in the profession do not appreciate their value in nail care provision and may be detrimental to themselves and the profession. A disparity exists among podiatrists regarding this subject.

"I think sometimes we do ourselves a disservice by thinking that is it something so beneath us to be doing nail care" (P08/F)

"I feel as though a lot of podiatrists are trying to practice at the top tier of their license, but along the way, when they are trying to do all the sexy stuff... especially in the hospitals, I feel as though as there might be predilections not to want to treat nails anymore even if there are problems with those nails, and I think that's an issue." (P15/M)

In saying that, most podiatrists still educate and treat nails but try not to prioritize this over other podiatric services (e.g., wound care).

### Theme 2: Perceived reasons for patients' presentation for podiatric nail care

Podiatrists shared the perceived reasons why patients attend for general nail care. The main reasons include (1) Personal barriers faced by patients, (2) Lack of support from family members, and (3) Low motivation by patients to self-manage.

#### *Personal barriers faced by the patient*

All podiatrists mentioned the physical barriers as to why a patient may present at the podiatrist due to factors such as "can't reach their feet, can't see" (P12/F). Some patients present if they have issues getting instruments that help with the nails, fear trimming their toenails, or have medical conditions such as diabetes.

"Some of them because they are elderly patients, and they can't reach their toes, and it becomes like such a lame limiting factor, but it's real." (P04/F)

In participant four quote, while she understands the rationale patients present, there lies some negativity in seeing non-pathological cases.

#### *Lack of support from family members*

Most podiatrists acknowledge that family members/domestic helpers play a part in managing non-pathological

nails. In cases where there is a “lack of family members to help” (P13/M) or when the patient refuses family help, these cases present themselves to the clinic.

“Some of them social issues, so nobody to cut for them. There’s elderly who live alone, there’s elderly who are demented and refuse to allow next of kin to cut but only want to come here and cut.” (P01/F)

### **Low motivation by the patient to self-manage**

Some patients decline to look after their foot condition despite being educated by podiatrists on how to do so. This group of patients would rather seek podiatric intervention as it has become routine for them.

“So that’s the biggest barrier, is that they are not motivated to do it, systematically and routinely. They just want to come in every few months and not bother about it. They want somebody else to do it.” (P11/F)

“The negative aspect is some patients are just so used to it. You know so they just don’t even want to try. And they are so used to the routine” (P12/F)

### **Theme 3: Podiatrist perception of self-management with various patient sub-groups**

Given the limited number of podiatrists in Singapore, most podiatrists strive to educate the patients who present with general care. The education focuses on empowering patients to self-manage with the eventual discharge goal. The actual education may differ based on the perception of self-management based on the type of patient group: (1) New patients, (2) Current patients.

#### **New patients**

With newer patients coming in, most podiatrists tend to find them more impressionable and are more open to self-management.

“I think those who see you for the first time who doesn’t have any prior knowledge about podiatry and what we do. So they are more receptive when you tell them ‘this kind of nails I cut for you this one time, but after that you have to file it yourself’” (P06/F)

Most podiatrists will set and manage patient expectations on the consult with the intent of discharging cases that are low-risk general care. The discharge often happens within the first consultation, and “most patients don’t return for another consult” (P11/F).

#### **Current patients**

For mid-to long-term patients, most podiatrists look into lengthening appointment intervals and encouraging them to seek others for help between appointments. Participant 6/F calls it the “opportunity for them to realize that it is easier to manage themselves”. Some patients may require podiatry

interventions despite performing some self-management as they are still “learning how to do the right thing” (P03/F).

Whereas, there are patients who have been taught how to self-manage and still come back as they “are just here to trim the toenails...heard it (self-management) thousand and one time and have never ever done it, so you know they are not going to do it” (P02/F). 60% of interviewed podiatrists feel obligated to see patients they believe don’t require podiatric care due to fear of complaints.

Two participants (P12/F and P01/F) noted that some podiatrists assume routine patients need appointments without asking if they’re necessary or if self-management could suffice. This prolongs patients’ stays in the healthcare system.

### **Theme 4: Podiatrist perception of the effectiveness of self-management**

#### **Advice for self-management**

Podiatrists use an amalgamation of methods to educate their patients on self-care. Nearly all demonstrated nail care techniques such as filing, trimming, and clearing nail sulci to accompany their explanations. They established that it was important to have patient-centric self-care advice, such as overcoming physical barriers and purchasing the appropriate tools.

“I will try to give certain alternatives so that they can just pick what is, at least there must be something they can do right. If I give them one solution and it’s too difficult for them, then they just neglect the whole thing. So I let them choose what is easiest for them.” (P05/F)

“Most of it is teaching them alternative methods like, some of them might say, “I have this problem but nobody taught me how to do it”, so a lot of it is teaching them easy access ways...put your foot on the stool or use a long-handled file” (P11/F)

75% of interviewees issued supplemental aids in videos, written instructions, or leaflets as a take-home reminder of the advice given. While podiatrists found the reference materials helpful, these take-home reminders have limitations. Older people faced technical difficulties and were less responsive to videos. Some podiatrists doubt that patients read the leaflets.

“The video is helpful if they watch it, but in our busy clinics it’s a bit challenging... and also our patients are quite old so it is quite hard to get them to scan the QR code.” (P01/F)

#### **Tools for self-management**

Four interviewees issued appropriate tools to patients to make it more convenient for patients to trial self-care.

“So with a tool that has been provided for them, so hopefully that will help to empower them to manage their own toenails, e.g., regular filing, that reduces the need for the visit.” (P03/F)

### Effectiveness towards self-management

All podiatrists interviewed reported that most patients were receptive to self-management advice. Patients associated with a higher likelihood of self-management were those with pain, cognitively able, physically able to reach their feet and have good social support at home. Nevertheless, most of the interviews reached a similar conclusion – that the patients' mindset was the key determinative factor of self-management.

"I think it's also how enthusiastic patients are, how proactive they are in taking charge of their nails. Sometimes we can try a lot of means, but sometimes they are not encouraged to do so." (P07/F).

"And I think it all boils down to their self-motivation also, whether they are motivated to care for themselves or whether they just want to depend on someone else to care for them." (P10/M).

### Discussion

This paper showed that podiatrists understand the value of providing nail care. This is supported by Farndon et al.<sup>(8)</sup> that having a podiatrist to treat nails and keratotic lesions can help sustain foot health and reduce pain in 75% of patients. Menz<sup>(9)</sup> further emphasized the importance of nail care for older individuals' foot health, although toenail cutting is often considered less critical. However, our participants suggested that podiatrists may not significantly value trimming non-pathological toenails, which aligns with Vernon et al.'s recommendation that foot care is valuable without necessarily requiring professional intervention<sup>(10)</sup>.

Menz<sup>(9)</sup> and Woodrow et al.<sup>(11)</sup> highlighted the strain on podiatrists' resources and suggested the potential involvement of nursing staff to address this issue. The study by Wallis et al.<sup>(12)</sup> on declining podiatrist numbers in England underscores the potential challenges faced in Singapore, where podiatrists were trained. Consequently, prioritization of cases, as noted in our study, becomes essential, with some podiatrists expressing a preference to delegate non-pathological nail cases. The success of transferring nail care responsibilities to other medical or social sectors varies across countries<sup>(10,13,14)</sup>.

Patients typically seek podiatric help due to physical limitations, lack of familial support, or low motivation for self-management. Miikkola et al.<sup>(3)</sup> suggested that older individuals who seek foot care help do not involve their


immediate family, possibly due to the perception that foot care is intimate and prefer to entrust it to healthcare professionals. Our study indicates that new patients are often receptive to self-managing nail-related conditions, aligning with recommendations for early encouragement of self-management and safe discharge<sup>(15-17)</sup>. Dineen-Griffin et al.<sup>(18)</sup> highlighted the need to provide patients with the knowledge, resources, and self-efficacy so that they can manage their nails. However, implementing self-management strategies may be challenging, as some patients require time to adjust and may seek podiatric care continually without any behavioral changes<sup>(19,20)</sup>. Additionally, two participants shared that implicit biases may hinder self-management education, prolonging patients' reliance on the healthcare system<sup>(21)</sup>.

Our participants highlighted the importance of patient-centered education strategies, which may include verbal explanations and demonstrations to enhance self-management skills. Literature showed that there is no universally superior communication method<sup>(22)</sup> and supported the need for tailored approaches to self-management<sup>(18,23,24)</sup> by recommending various communication methods to maximize learning<sup>(22)</sup>. However, education alone may not lead to behavioral change, necessitating ongoing discussions and support from healthcare professionals<sup>(25,26)</sup>. Instrumental and psychosocial support from family members is associated with better self-management<sup>(26,27)</sup>. Ultimately, patients must possess the knowledge, skills, and confidence to manage their health to potentially reduce reliance on podiatry services and lessen the healthcare financial burden<sup>(3,28)</sup>.

### Strengths and limitations

The consolidated criteria for reporting qualitative research (COREQ) was used in this study to ensure its rigor<sup>(29)</sup>. To the authors' knowledge, this is the first study done in Singapore that seeks to understand podiatrists' views on nail care. Participants shared their opinions freely throughout the interview. The population of podiatrists interviewed was considered representative of the private and public sectors of Singapore.

This study considered podiatrists' perspective of nail care in Singapore. More can be done to discover patients' and families' perspectives on adherence to nail self-management habits. This will shed light on any differences between the clinicians' and patients' perceptions and expand the understanding of the current motivations and barriers patients face in foot care.

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