

# Foot and Ankle Fellowship Training: A National Survey of Past, Present, and Prospective Fellows

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## ABSTRACT

**Background:** Surgical specialties have become increasingly subspecialized. An expanding demand for foot and ankle care administered by trained specialists has driven the need for foot and ankle-trained orthopaedic surgeons. This survey was designed to elucidate the reasons why residents choose a career in foot and ankle surgery. **Methods** We conducted a national, anonymous, 11-question survey of past, present, and prospective foot and ankle fellows (156 mailed). The questions focused on trying to understand the decision-making process in pursuing a foot and ankle fellowship, and assessing the overall satisfaction of this career choice. Questionnaires were returned within one month of their mailing. **Results:** We achieved a 40% overall response rate. The fellow's relationship with their residency program's foot and ankle specialist was the primary catalyst for pursuing foot and ankle as a career. Nearly all respondents were satisfied with their decision to do a foot and ankle fellowship, though some were disappointed early in practice with remuneration, practice competition, and patient dissatisfaction. American Orthopaedic Foot and Ankle Society® (AOFAS®) membership was nearly unanimous. **Conclusion:** The relationship established between a resident and their foot and ankle mentor while in training appears to have the greatest impact on pursuing foot and ankle surgery as a career. Once in practice, few trained fellows regret their decision, and report few disappointments not similarly voiced by other orthopaedic subspecialties. Based on this data, the importance of a foot and ankle rotation elective during orthopaedic residency and the impact subspecialty service attendings have on resident interests and career choices seems clear.

**Key Words:** Foot, Ankle, Fellowship, Orthopaedic

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## INTRODUCTION

Like many other surgical specialties, orthopaedics has increasingly trended toward subspecialization. Nearly 600 orthopaedic residents complete residency each year in the United States, with the majority entering a one-year clinical fellowship after their training has completed.<sup>4</sup> In 2006, Bode<sup>1</sup> surveyed 1,217 graduating residents from the classes of 2004 and 2005. Of the 482 respondents (40%), over 80% were entering fellowship training immediately after completing their residency, and approximately half of the remaining residents planned on pursuing a fellowship in the future. Presumably, orthopaedic residents pursue fellowship training for many different reasons. While foot and ankle surgery has historically been performed by orthopedic generalists, this field has rapidly evolved in recent years due to the increase in residencies training such subspecialists, and the flood of research interests and innovation in this field. Both likely play a role during the overall increased consumer demand noted for subspecialized foot and ankle care.<sup>3</sup> Bode's survey from 2006, however, found that only 7% of the orthopedic resident respondents were interested in foot and ankle fellowships, somewhat less than the 10% needed to fill positions in 1998.<sup>4</sup> The purpose of this survey was to examine when and why, in 2007, residents specifically choose a foot and ankle fellowship. It was also meant to determine what our recently fellowship-trained surgeons find most gratifying and frustrating early in their careers as foot and ankle specialists in today's world.

## STUDY METHODS

An 11-item questionnaire was mailed to 156 past, present, and prospective foot and ankle fellows identified by current United States foot and ankle fellowship directors. This survey and study was endorsed by the Board of Directors of the American Orthopaedic Foot and Ankle Society® (AOFAS®). "Former" fellows had to be within two years post-fellowship training to be included, "current" fellows were defined

as those still within the training program at the time of this survey, and “prospective” fellows were incorporated if they had already been accepted and committed to starting fellowship in 2006. Upon request, completed questionnaires were either mailed or faxed back to us within a one-week period. The participants were instructed not to put their name on the questionnaire to ensure anonymity.

As seen in Figure 1, the questionnaire consisted of 11 items and included a mix of queries requiring singular or ranked answers. Six questions permitted the participant to write in a response that may not have been included in the answer choices. The first five items related to factors influencing residents’ decisions to do a foot and ankle fellowship. The last six items focused on practice and career decisions. Ranked responses were tabulated for each item and, when applicable, answers were illustrated on a horizontal bar chart in descending order of importance, as seen in Figures 2 to 5, 7 and 8, and 10. Answers for the remaining items were found best depicted via pie chart display of the number of responses for each answer and their corresponding percentages.

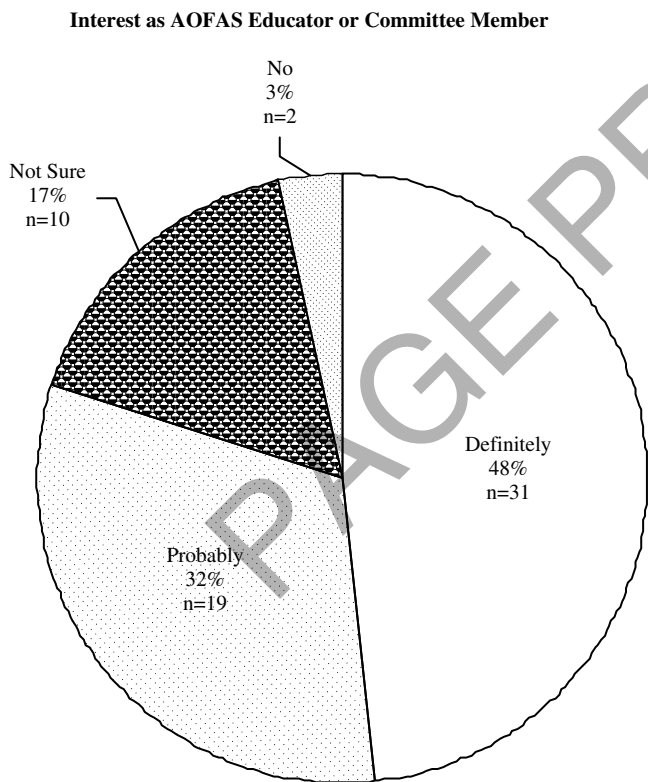
**RESULTS**

We received 62 questionnaires out of a total of 156 mailed surveys, resulting in a response rate of 40%. The participants were composed of past, present, and future foot and ankle

fellows. Every item on the questionnaire was answered completely by all participants, and all items and participant responses have been graphically illustrated.

The first five items related to factors for choosing a foot and ankle fellowship. The first item asked the respondents to rank, from 1 to 10 (one being the most influential), what had the greatest impact on a resident’s decision to pursue a career in foot and ankle surgery. One-third of respondents ranked their residency program’s foot and ankle mentor as either the most or second most influential aspect of their decision making process (average rank of 3.16). This was followed in perceived importance by 1) the clinical material encountered, 2) simply having exposure to foot and ankle during residency, and 3) prospects for future job marketability (Figure 2). Factors which had the least impact on a resident’s decision to pursue foot and ankle as a career included: 1) the need for academic foot and ankle specialists, 2) duration of fellowship training (even if shorter than one year), 3) remuneration, and 4) sites where fellowships were obtainable. Sixty percent of the respondents in item two thought the greatest impact for choosing a specific fellowship was its mentor, while 34% ranked the program’s clinical material the second most important reason. Marketability, location, workload, research options, salary/benefits, and when the fellowship was offered had the least impact (Figure 3). Nearly half (47%) of respondents became certain they were going to do a foot and ankle fellowship while doing their foot and ankle rotation in residency, while 35% were unable to pinpoint any particular time during residency when this decision was made. Ten percent made this determination after being in practice, and the remaining 8% made it either during medical school or during a foot and ankle research endeavor (Figure 4). The majority of fellows (61%) felt their residency’s foot and ankle specialist provided the “one initial spark” that catalyzed their serious consideration of foot and ankle as a career choice. A few fellows felt the lack of trained foot specialists (8%), listening to visiting lecturers (4%), or exposure to the core competencies during residency (4%) provided their inspiration to consider foot and ankle, as illustrated in Figure 5. Encouragingly, 79% of the respondents were completely satisfied with their decision to do a foot and ankle fellowship. And while only two of the respondents harbored some reservations, no one actually regretted their decision, as shown in Figure 6.

The second half of the questionnaire (last six items) dealt with practice-based issues. Twenty-nine percent of respondents reported patient dissatisfaction to be the most disappointing thing they have encountered in practice, followed by 19% of respondents expressing no regrets at all once in practice. The majority of the remaining respondents (27%) ranked competition from podiatrists and remuneration equally, as the third most disappointing aspects of foot and ankle practice early in the respondents’ careers (Figure 7). The top three best things encountered (or anticipated to be encountered)



**Fig. 1:** Eleven-item questionnaire sent to past, present, and prospective foot and ankle fellows.

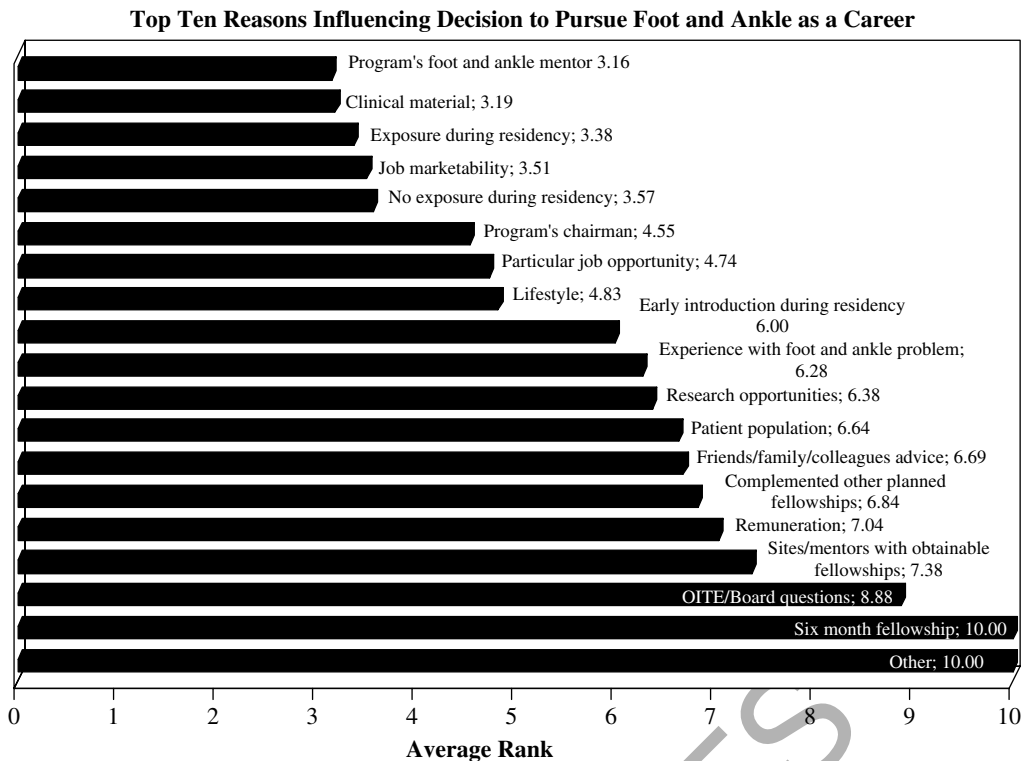


Fig. 2: Horizontal bar chart illustrating in descending order the top ten reasons influencing the respondent's decision to pursue foot and ankle surgery as a career.

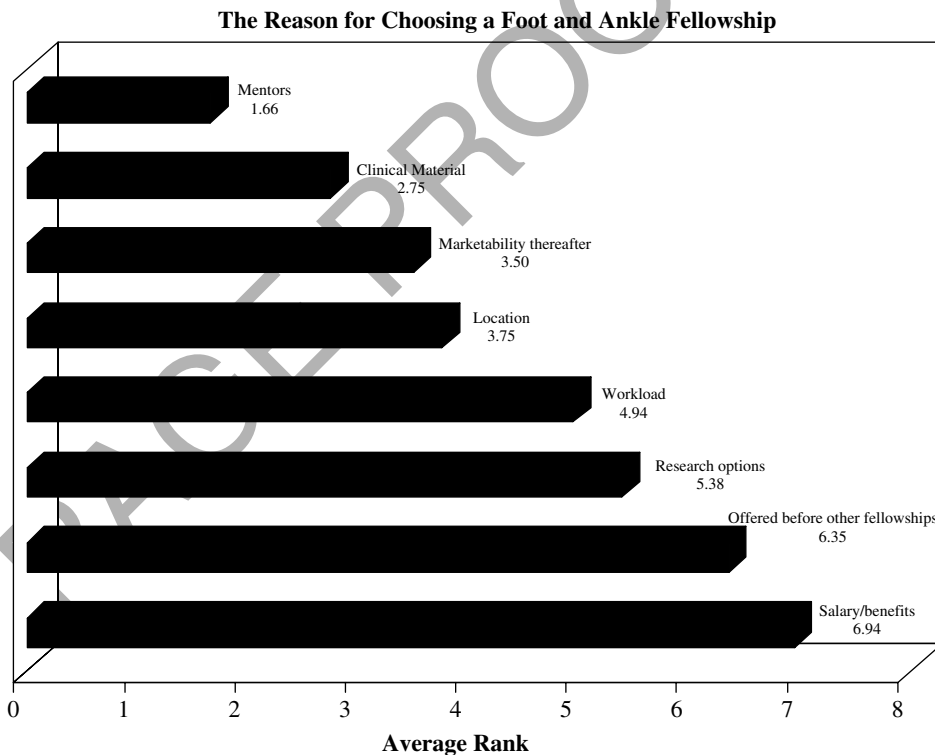


Fig. 3: Horizontal bar chart illustrating in descending order the reason for choosing a foot and ankle fellowship.

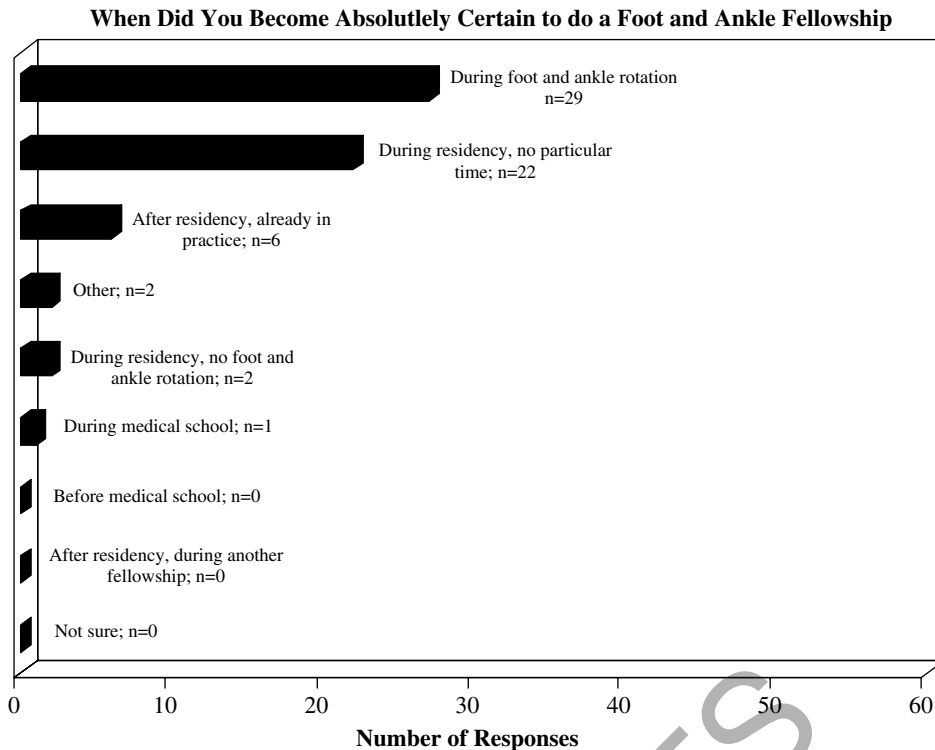


Fig. 4: Horizontal bar chart illustrating in descending order the time at which the respondents became absolutely certain to do a foot and ankle fellowship.

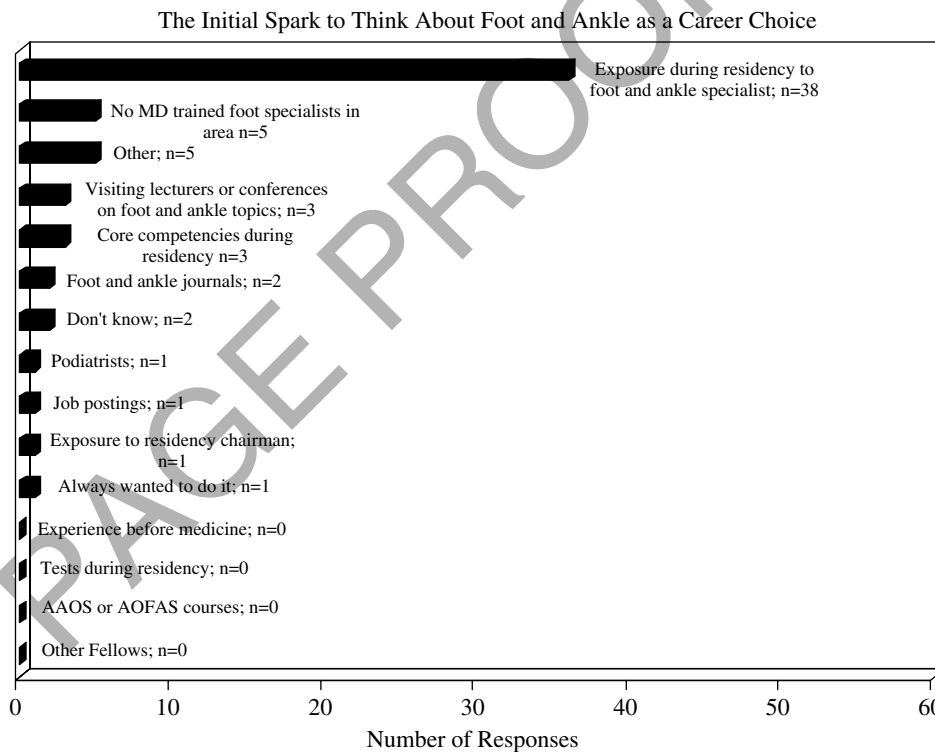
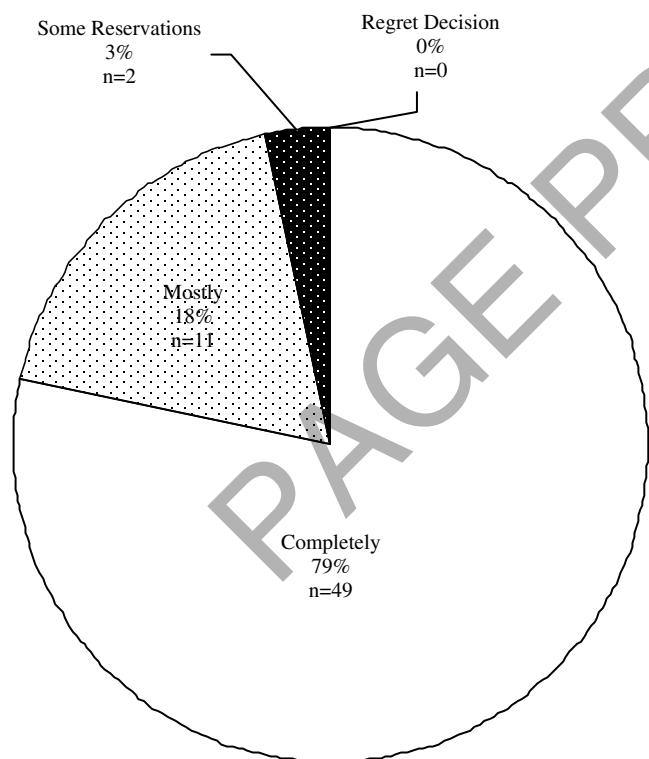


Fig. 5: Horizontal bar chart illustrating in descending order the reason a resident chose a foot and ankle fellowship.

as a foot and ankle trained surgeon were: 1) job security (52%), 2) interaction with group partners as the foot and ankle specialist (19%), and 3) the amount of available foot and ankle work (15%), (Figure 8). Available research, hospital or insurance issues, and practice opportunities were the least anticipated benefits encountered as a foot and ankle specialist. When asked about their peers who may have initially considered foot and ankle but later chose alternative career paths, 63% of respondents knew of no one like this, 25% recalled individuals like this but were unaware of their reasons for switching, and 12% said their colleagues changed their mind because “other subspecialties had better compensation”, and because of the perception that foot and ankle “was all diabetic feet.”

An overwhelming 89% of respondents believed the most influential way to convince more people to pursue a foot and ankle fellowship was through improved exposure to foot and ankle surgery during residency via mandated foot and ankle rotations. Thirty-five percent considered AOFAS<sup>®</sup> marketing and resident courses and seminars potentially helpful to convince more people to pursue foot and ankle fellowship training. Four respondents believed a fellowship match would heighten interest in such training, while two thought nothing could be done and two believed increased reimbursement and early teaching of foot and ankle biomechanics would do the same. Nearly all of the respondents would definitely (88%)

#### Satisfaction with Decision to do a Foot and Ankle Fellowship



**Fig. 6:** Pie chart illustrating that nearly all respondents were satisfied with their decision to participate in a foot and ankle fellowship.

or probably (8%) become members of the AOFAS<sup>®</sup>. Only one person was unsure and one was not going to pursue membership (Figure 11). Interest in participating as either an educator or committee member for the AOFAS<sup>®</sup> was notably definite for 48% and probable for 32% of the respondents. Ten respondents were unsure about this, and two expressed no interest.

#### DISCUSSION

Orthopaedic subspecialization has continued to grow in step with the evolution of and demand for research, innovation, and available treatment options in orthopaedic surgery. This may be particularly true for foot and ankle surgery, where many generalists have in the past provided and even today continue to provide a great deal of foot and ankle care for our Society.<sup>3</sup> The AOFAS<sup>®</sup> has expressed interest in learning more about what specifically stimulates individuals to choose foot and ankle as a career subspecialty choice amongst the many others which exist in the field of orthopaedic surgery today. In particular, the AOFAS<sup>®</sup> wants to better understand what primarily drives residents toward a fellowship in this field, and what their overall satisfaction rate is once in practice. Our anonymous survey yielded a response rate very similar to those recorded in past resident surveys.<sup>1,2</sup> The single-most overwhelming factor predominating these results revolved around the impact a motivating foot and ankle service mentor has on his or her resident trainees. The data suggest that programs with a stimulating foot and ankle division and a visible mentor to which residents get adequate exposure can have a major impact on solidifying a resident's career decision. Apparently, the clinical material to which they are introduced and the currently favorable trends in job marketability (many academic programs and private practices are actively searching for a foot and ankle specialist) were also found to be influential. Nearly 80% of respondents reported to be completely satisfied with their decision to pursue foot and ankle as a career. Once in practice, 19% had no regrets at all with their foot and ankle practice, while 20 of the 62 respondents found overall patient satisfaction rates and perceived surgical success rates disappointing. Nearly 30% the respondents ranked remuneration and podiatric competition the most disappointing aspects of practice.

The continued growth of foot and ankle surgery as a major orthopaedic subspecialty is presumably propelled by societal demand for tertiary quality foot and ankle care. Fulfillment of this demand and supply curve mandates, however, aggressive support and maintenance of adequate foot and ankle training at both the residency and fellowship level. Such education is clearly paramount to the continued delivery of quality foot and ankle care. The apparent “linear” relationship between a positive subspecialty residency experience and enhanced subspecialty interest is perhaps not surprising, and may be

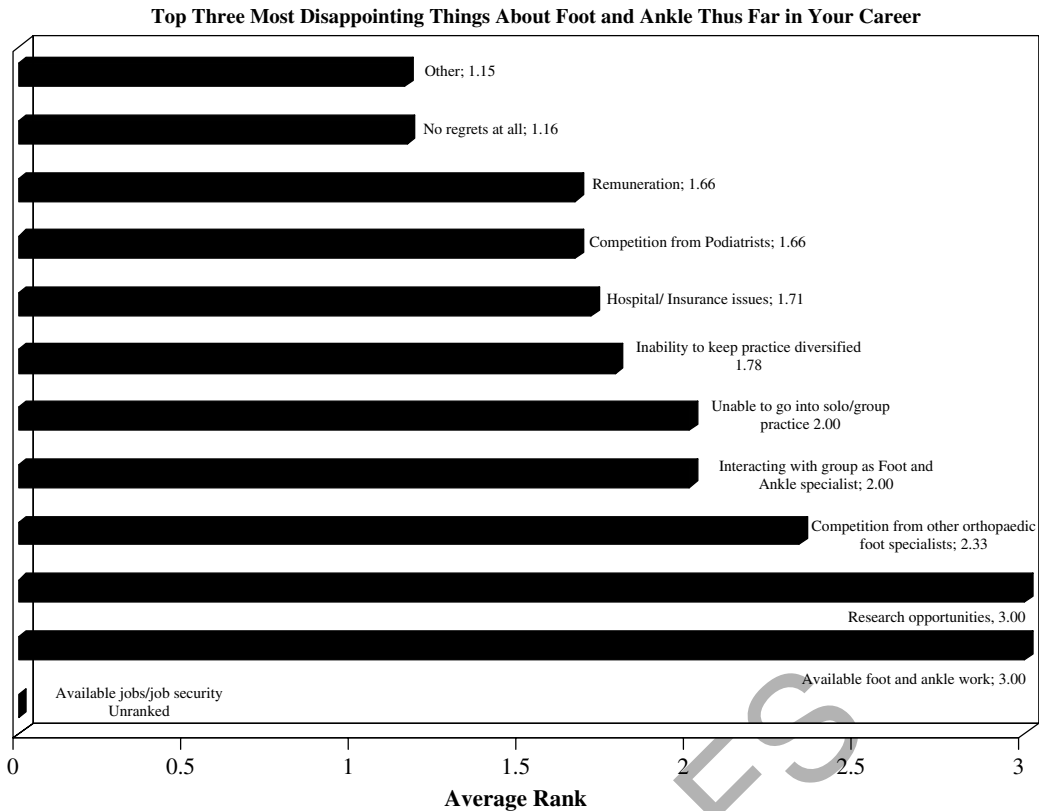


Fig. 7: Horizontal bar chart illustrating in descending order the most disappointing things encountered thus far in the respondents career.

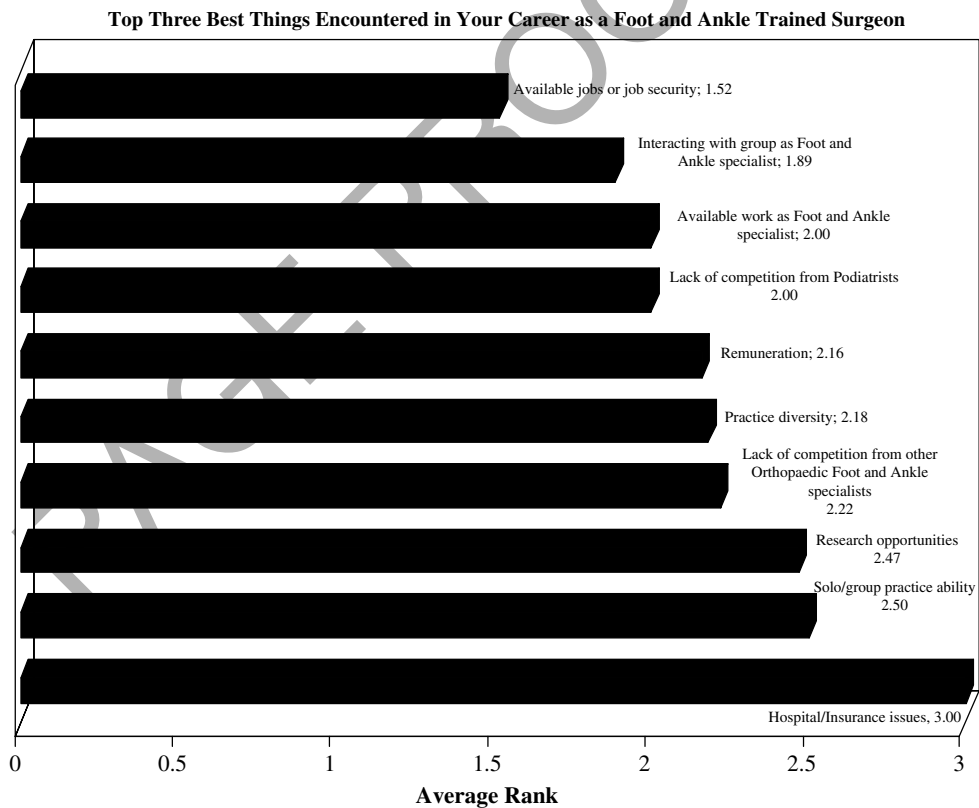
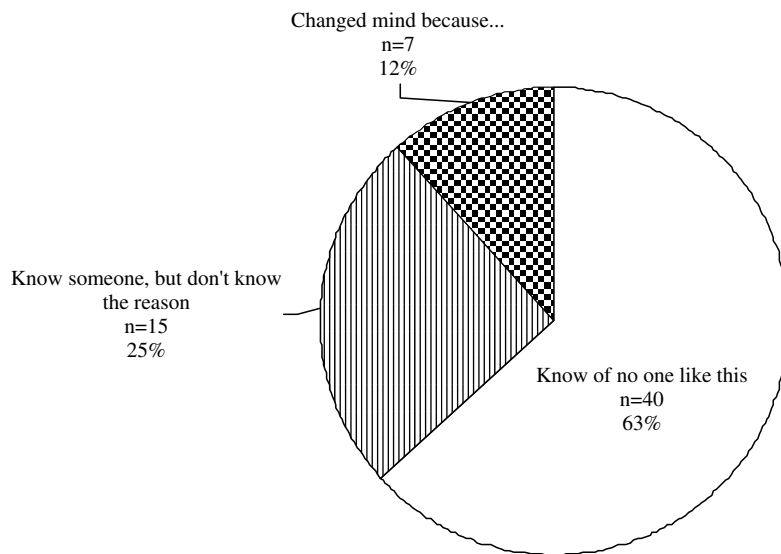


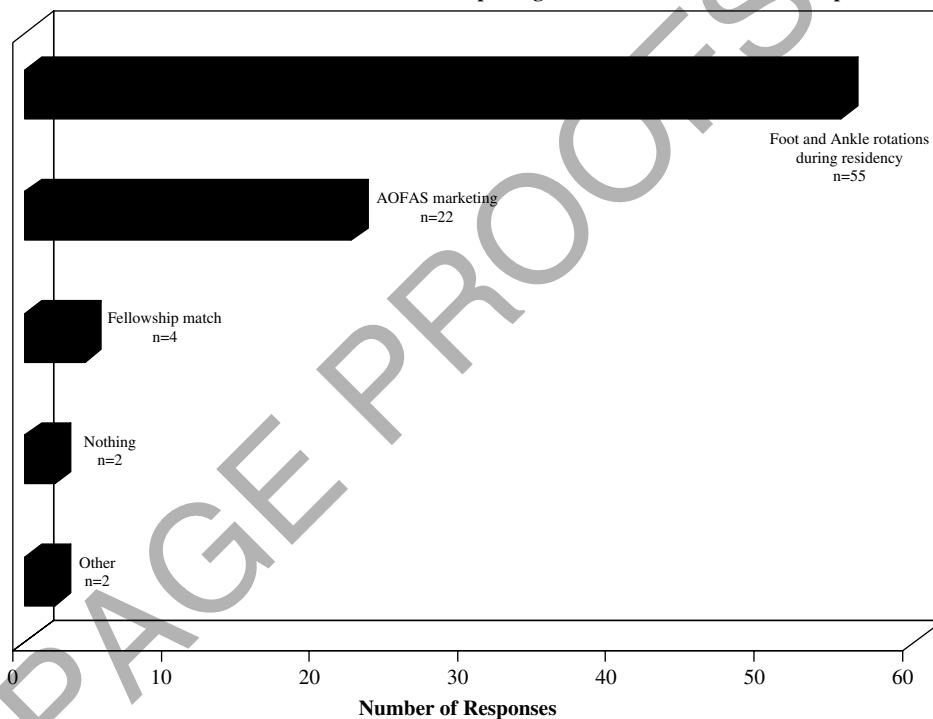
Fig. 8: Horizontal bar chart illustrating in descending order the top three things encountered as a practicing foot and ankle surgeon were available jobs or job security, group interaction with the foot and ankle specialist, and available foot and ankle work without podiatric competition.

**Fellow Residents Reason for Deciding not to do a Foot and Ankle Fellowship**



**Fig. 9:** Pie chart illustrating nearly two-thirds of respondents knows of no one who decided to change their mind to pursue a foot and ankle fellowship.

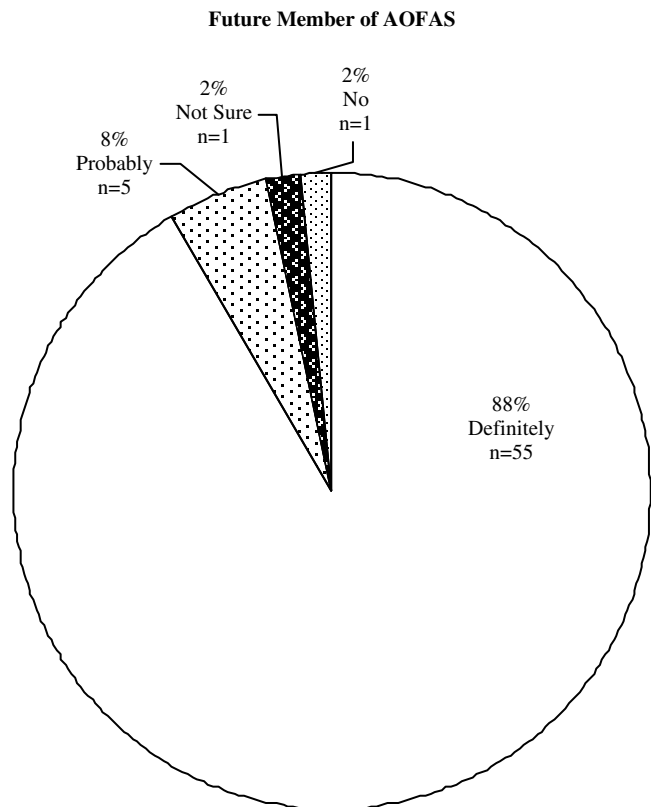
**What Can be Done to Convince People to go into Foot and Ankle Fellowship**



**Fig. 10:** Horizontal bar chart illustrating in descending order fifty-five of sixty-two respondents believe mandatory foot and ankle rotations during residency would convince residents to pursue foot and ankle fellowships. AOFAS® marketing and a foot and ankle fellowship match may also convince residents.

similar for other subspecialties as well. Our survey also suggests that increased, improved, and/or perhaps earlier exposure to foot and ankle surgery during residency may go a long way towards achieving this goal. Based on our data, courses and seminars may also inspire a greater number of residents to consider foot and ankle fellowships, but

would likely have a much smaller impact. Encouragingly, the majority of respondents who are pursuing foot and ankle subspecialty training are also interested in furthering their involvement as active educators or committee members for the AOFAS®. As noted by Saltzman,<sup>3</sup> the future of providing quality foot and ankle care hinges upon a pipeline



**Fig. 11:** Pie chart illustrating the near unanimous decision to become a member of the AOFAS®. Only one respondent answered no, and one was unsure.

of dedicated individuals with the requisite skill set, energy, and interest necessary to sustain this growth. In order to

meet the challenges of an evolving healthcare system with an enlarging and aging patient population, which places ever increasing requirements on high-quality foot and ankle care, it seems imperative to promote our specialty by inspiring and teaching young physicians in training who can ensure a future of qualified foot and ankle surgeons to meet societal demands.

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