Arthritis New Zealand Summer Scholarships Reporting Template

Please note that all successful applicants must complete this reporting template for their Arthritis New Zealand Summer Scholarships project within one calendar month of finishing their study. ***Reports must be no longer than three pages in total.*** *Please also use Calibri (body) font size 11 or 12.*

Name of Student

Mickey Ma

Supervisor's Name

Prue Molyneux*, Associate Professor Matthew Carroll, Professor Catherine Bowen, Associate Professor Richard Ellis, Professor Keith Rome.

Primary Supervisor's Institution (including address)

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Project Title

Investigating the experience of podiatrists providing podiatry care to people with foot osteoarthritis.

Statement Regarding Arthritis New Zealand Sponsorship

I feel incredibly grateful and honoured to have been awarded this Summer Scholarship. My sincerest appreciation goes out to Arthritis New Zealand for providing me with the funding and the invaluable opportunity to expand my understanding of osteoarthritis and enhance my research skills.

Student's Personal Comment About Study/Experience (maximum 250 words)

Being part of a research project has been an enriching experience as a second-year podiatry student. I've gained invaluable knowledge on how to conduct research, recognised my strengths and weaknesses, and developed my problem-solving skills. Although I initially felt overwhelmed trying to balance my personal life and research, I've learned to break up my tasks into smaller pieces and work whenever and wherever I feel motivated. I'm thankful for my supervisor, Prue, who's been very understanding and supportive throughout my academic and personal growth journey.

This project allowed me to connect with New Zealand podiatrists and see how they think and work in clinical practice, providing me with an eye-opening experience to combine what I've learned in class with field research. Additionally, I was able to keep up with the latest advancements in foot osteoarthritis research, especially the pathophysiology, diagnosis and management trends. Furthermore, I understand that as a health professional, continuous education and development is critical to provide better treatment options to our patients and practitioners. It enables more timely and efficient services, which can improve patients' quality of life.

Overall, participating in this research project has been an honour, allowing me to develop both personally and professionally.

Summary of the Project (maximum 500 words)

Aims of project

Osteoarthritis (OA) can significantly impact a person's quality of life [1, 2], yet there is limited evidence guiding its assessment, diagnosis, and management, particularly in the foot [3]. We aimed to understand how New Zealand (NZ) podiatrists clinically diagnose and manage foot OA.

Key results

Table 1. Demographics of participants who completed the interview

Demographics of participants		**n (%)**
Gender	Male	4 (40)
	Female	6 (60)
Practicing years range	5-10 years	3 (10)
	11-20 years	7 (70)
	21-30 years	1 (10)
	Over 30 years	1 (10)
Location in NZ	Auckland	5 (50)
	Masterton	1 (10)
	Cambridge	1 (10)
	Christchurch	3 (30)
MSK Case load %	50-59	3 (30)
	60-69	1 (10)
	70-79	3 (30)
	80-89	2 (20)
	90-100	1 (10)

Table 2. Interim findings of assessments and treatments adopted by participants

	Item
Subjective Assessment	Chief complaint or secondary finding
	Previous diagnosis
	Patient history (previous injury)
	Pain (location, duration, onset etc.)
Objective Assessment	Joint ROM
	Foot Posture Index
	Loss of function
	Palpation
	Musculoskeletal imaging
	Compare with contralateral limb

Treatment	Activity modification Footwear modification/education NSAID BMI education Exercise prescription Orthotics • Restriction vs Enhancement • Custom vs Prefab • Poor link between graded severity and orthotic prescription Referral for surgical intervention

Ten podiatrists across Aotearoa NZ responded to our request for an online recorded interview. The interview included questions regarding their understanding of OA and what assessments and strategies they adopt to guide diagnosis and treatment. The demographics of the participants are displayed in Table 1. The analysis is still ongoing; hence, interim findings are shown in Table 2.

Participants adopted a mix of subjective and objective assessments to inform their diagnosis and clinical decision making. The patient's "subjective" experiences, such as the chief complaint, previous diagnosis, previous injuries, and feeling of pain (location, duration, and onset), are explored to inform the practitioners' choice of assessment and management plan.

"Objective" assessments adopted included joint range of motion (ROM), foot posture index (FPI), loss of function, palpation, musculoskeletal imaging (such as ultrasound imaging, x-ray, MRI, and CT scans), and comparison with the contralateral limb.

Major point of discussion

Interim findings have indicated that there is a gap between current research advancements and clinical management of foot OA. Participants often viewed foot OA as a "wear-and-tear" degenerative process [4]. Despite current research recognising the heterogeneous involvement of multiple joint tissues[5-7]. OA is not simply a process of wear and tear, but rather abnormal remodelling of joint tissues driven by a host of inflammatory mediators[7, 8]. Attention has now turned to the prognostic value and role of inflammatory markers[7-9], with several studies reporting an association between active synovitis and structural OA progression [10-12]. Despite this advancement in knowledge our current method of diagnosing foot OA is governed by the findings of conventional radiography [13, 14], which captures OA later in the disease process when irreversible structural damage has already occurred.

It was also found that there is no standardised approach for the diagnosis and treatment of foot OA, with differing opinions on how clinical decisions are guided, such as choice of assessments, joint restriction or enhancement, and severity determination. There was also a lack of consensus on whether to refer for imaging to guide diagnosis and which imaging modality to use. Surprisingly, very few NZ podiatrists refer for ultrasound imaging as an extension of their objective assessments. Despite the fact that ultrasound imaging potentially affords inherent advantages for the diagnosis of foot OA. Given the ability of US to depict tissue-specific morphological changes before the onset of pain and before the point of irreversible structural damage, US may play a fundamental role in the earlier detection and assessment of foot OA [15, 16], thus enabling more targeted and timely interventions that may provide capacity to alter disease progression.

Additionally, the study focused solely on podiatrists trained from the same podiatry school (AUT, previously as the Central Institution of Technology), hence similar knowledge on foot OA. It would be interesting to conduct a similar study exploring the experiences of podiatrists across multiple countries.

Conclusion/key recommendation

In conclusion, a research-based guideline should be developed to improve and standardise the diagnosis and podiatry management of foot OA in NZ. In the short term, podiatrists should align their knowledge with current research, reach a consensus on management approaches, and consider using ultrasound imaging in the early detection and management of foot OA.

References (maximum 500 words)

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