SUMMER VACATION SCHOLARSHIP PROGRAM



ABSTRACT

Total knee arthroplasty (TKA) is a common orthopaedic intervention, often performed for the treatment of end-stage osteoarthritis (OA) and chronic knee pain (CKP). However, it is apparent that the course of recovery for up to 30% of TKA patients is affected by complications including prolonged and intense pain, physical and/or functional impairment, and compromised quality of life (QoL). Despite advancements in prosthetic design, surgical technique, and patient selection, there is consensual evidence that a significant proportion of TKA recipients are not satisfied with the outcome of their surgery. Recent studies utilising validated patient-reported outcome measures have identified significant correlation between ongoing pain and dissatisfaction subsequent to technically-successful surgery.

A growing body of evidence substantiates the hypothesis that pain sensitisation is a determining factor in the maintenance of chronic pain following TKA. It is thereby postulated that individuals' susceptibility to post-TKA chronic pain may be predicted by their pre-operative pain modulation profile, and that those exhibiting symptoms of pain sensitisation may be less likely to benefit from TKA. Several randomised controlled trials have demonstrated the efficacy of peri-operative analgesic administration for attenuating post-operative pain by stabilising hyper-excitable neural activity and preventing central sensitisation. Correspondingly, it is proposed that targeted analgesia may be an appropriate therapeutic intervention for the management of CKP in individuals with pain sensitisation, prolonging or averting referral for TKA.

Understanding the evolution of CKP is critical to facilitating improvement in patient health and QoL outcomes. Current evidence reinforces the pertinence of developing comprehensive pre-operative assessment procedures such that appropriate patient selection is optimised. Concurrently, effective methods of managing pain sensitisation require further exploration.

Laura Langdon
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FINAL REPORT

Throughout the course of the Summer Vacation Scholarship Program, I have been very fortunate to work with the Musculoskeletal Unit, under the supervision of Professor Flavia Cicuttini and Associate Professor Anita Wluka. I have been collating evidence pertaining to the correlates and predictors of chronic knee pain (CKP), poor patient-reported outcomes following total knee arthroplasty (TKA), associations between peri-operative pain management and post-operative outcomes, and pain sensitisation as a determinant of CKP. I have tabulated the key findings of relevant studies, and produced an accompanying narrative review. This data will provide research rationale and substantiate corresponding grant applications for a proposed study to investigate the use of non-narcotic drug therapies in the management of CKP, as an alternative to TKA.

My understanding of the project requirements and ability to meaningfully contribute has been enhanced by several educational sessions offered through the program. I have developed a sound understanding of ethics in the context of public health research, and acquired the skills to utilise academic databases and citation management software. In addition to bolstering my experience as a summer vacation scholar, this knowledge will be of benefit as I progress through my education and career.

I greatly value the opportunities I have had to learn from those with extensive and diverse experiences in the field of public health. It has been a privilege to meet the team members of the Musculoskeletal Unit, who have been very welcoming and open to discussing their professional projects. In particular, speaking to the Honours and PhD students has encouraged me to consider new early career opportunities as a recent graduate. The weekly SPHPM seminars have broadened my awareness of contemporary public health issues, and challenged me through the exploration of innovative, efficacious, and sustainable responses. With topics ranging from the impact of polypharmacy on the health outcomes of older adults, to associations between outdoor air pollution, temperature, and health, it has been truly inspiring to hear from a range of SPHPM staff members, as well as interstate and international researchers. The World AIDS Day Community Forum is another memorable experience that has opened my eyes to the significance of the roles held by a number of dedicated public health institutions.

I thoroughly enjoyed visiting the Alfred Intensive Care Unit and Emergency Department. It was enlightening to hear about and to observe the work of the SPHPM in a clinical context. Our morning at the Victorian Institute of Forensic Medicine also provided insight into the reciprocity between research and clinical practice. Attending the Teaching, Challenges and Innovation Symposium further expanded my appreciation of the work undertaken by the SPHPM. As well as allowing me to explore the perspectives of attendees and to contribute ideas, this experience brought about valuable opportunities to be involved in co-authoring a newsletter article and compiling the workshop discussion notes from the event.

This program has been made all the more enjoyable by the fantastic group of students involved. I have thoroughly enjoyed getting to know like-minded people from different academic backgrounds, who are no longer just peers, but also colleagues and friends. As runners-up of the 2016 Alfred Grand Round End of Year Quiz – undoubtedly the pinnacle of public health accolades – we, the summer vacation scholars, have made our mark and demonstrated our potential as future researchers and practitioners.

I am extremely grateful for the opportunities I have had to advance my understanding of public health research, and to apply my university learning in a professional context. As a result of participating in the SPHPM Summer Vacation Scholarship Program, I have acquired valuable insight into diverse opportunities in public health research, and developed greater confidence in my abilities. While I feel heavy-hearted that the program has now come to an end, I leave absolutely inspired and excited to pursue further study and a career in the healthcare industry.

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