Economic implications of anxiety and depression in cancer care

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Submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy, Health Economics

2021

Certificate of original authorship

I, **Jackie Yim** declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy (Health Economics), in the **Business School** at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

This research is supported by the Australian Government Research Training Program, the NSW Health PhD scholarship and the ADAPT RCT Top-up scholarship.

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Date: 26th of July 2021

Acknowledgments

I would first like to thank my supervisors, Professor Rosalie Viney, Dr Sheena Arora, Associate Professor Joanne Shaw and Dr Alison Pearce, who have challenged me to conduct high-quality research and guided me through the world of health economics and psycho-oncology. Entering the world of health economics as a radiation therapist has been a challenging yet rewarding journey. Rosalie, who provides a big picture perspective and crystal clear thoughts on complicated research questions, has always been incredibly insightful and inspiring to learn from. Sheena, who has conducted similar studies before, has always provided me with sage and practical 'nitty gritty' advice. Jo, who has always made herself available for supervisor meetings at UTS, has been instrumental in assisting me with accessing the trial data and provided her invaluable psycho-oncology perspective when interpreting findings. Alison, who supervised me in my first year and has a health professional background, was a source of encouragement to take on this challenge. I am incredibly grateful for each of my supervisors, and the completion of my thesis would not have been possible without their support, wisdom and guidance.

I gratefully acknowledge the assistance of Professor Deborah Street and Associate Professor Brendan Mulhern. To Debbie, who taught me how to design a discrete choice experiment from scratch. To Brendan, who gave me informal tutorials on how to analyse DCE data and, in particular, the use of the heteroskedasticity test. Without both of their assistance and input, I would not have been able to complete my DCE.

I would also like to thank the CHERE PhD and ECRs group, of which I had the privilege of being the chairperson for two years, for the friendships, laughs and willingness to share learnings.

To my wife, Vanessa, I thank you for sharing in my struggles, celebrating the wins (big or small) and constantly encouraging me to believe in myself. You have been my rock throughout my PhD journey, and I couldn't have done it without your unwavering support. In the last year of my PhD, we were blessed with the arrival of our beautiful daughter, Erin, who has brought us much joy and laughter. Thank you for all that you do for our family. In addition, I would like to thank my mother, who has always been supportive of all my endeavours. Finally, I thank God for all His blessings and provisions in my life.

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List of abbreviations

A&D	Anxiety and depression
ADAPT	Anxiety and Depression Pathway Program
CBA	Cost-benefit analysis
CCA	Cost-consequence analysis
CEA	Cost-effectiveness analysis
COVID-19	Coronavirus disease 2019
CP	Clinical care pathway
CUA	Cost-utility analysis
DCE	Discrete choice experiment
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, 4th Edition
ESAS	Edmonton Symptom Assessment System
GP	General practitioner
HADS	Hospital anxiety and depression scale
ICD-9-CM	International Classification of Diseases, Ninth Revision, Clinical Modification
MBS	Medical benefits schedule
NICE	National Institute for Health and Care Excellence
NSW	New South Wales
PBS	Pharmaceuticals benefits schedule
PoCoG	Psycho-Oncology Co-operative Research Group
PRO	Patient-reported outcomes
PROFILES	Patient-Reported Outcomes Following Initial treatment and Long term Evaluation of Survivorship
QALY	quality-adjusted life years
RCT	Randomised controlled trial
UK	United Kingdom
USA	United States of America

Publications from this thesis

Chapter 3 (invited submission)

Yim, J., Shaw, J., Viney, R., Arora, S., Ezendam, N. and Pearce, A., 2021. Investigating the Association Between Self-Reported Comorbid Anxiety and Depression and Health Service Use in Cancer Survivors. *Pharmacoeconomics*, *39*(6), pp.681-690.

Chapter 7

Yim, J., Arora, S., Shaw, J., Street, D., Pearce, A. and Viney, R., 2021. Patient preferences for anxiety and depression screening in cancer care: A discrete choice experiment. *Value in Health*, 24(12), pp.1835-1844

Abstract

Anxiety and depression (A&D) affects almost 25% cancer patients and is associated with poorer survival and increased healthcare use. This thesis presents five studies exploring healthcare utilisation in cancer patients, the costs and consequences of screening for A&D, and patient preferences towards A&D screening programs. This research was conducted alongside the ADAPT RCT: a randomised controlled trial comparing two implementation strategies for an A&D screening and management pathway in cancer care.

Chapter 2 presents a literature review examining cost and healthcare utilisation associated with A&D in cancer patients, and economic evaluations of A&D screening and treatment programs. There was limited evidence on healthcare costs and utilisation for Australian cancer patients, and on economic evaluations of A&D screening and management psycho-oncology programs.

Chapter 3 examines the relationship between A&D and self-reported doctor visits using a Dutch cancer dataset. The results demonstrate a significant positive association between levels of A&D experienced and frequency of doctor visits.

Chapter 4 describes the ADAPT clinical care pathway (ADAPT CP) that was implemented across 12 NSW sites as part of the ADAPT RCT, providing context for the results presented in chapters 5, 6 and 7.

Chapter 5 presents the cost and consequences of two approaches (core and enhanced) to implementing the ADAPT CP. The enhanced approach costs more than double the core approach in the first year. The projected 5-year cost of the program was estimated to be $59,371.95. Patient participation is key to ensuring value for money.

Chapter 6 explores healthcare utilisation in an Australian cancer population with A&D, using Medicare administrative data obtained as part of the ADAPT RCT. This study found that healthcare utilisation is driven by both A&D and cancer staging and demonstrates that healthcare utilisation decreased over time after receiving psychooncology care. This chapter reinforces the importance of identifying and treating A&D.

Chapter 7 presents a discrete choice experiment investigating patient preferences towards screening and management programs for A&D. Cancer patients prefer a routinely offered screening and management program delivered face-to-face by an oncology professional, with post-screening care provided by a psycho-oncology team within the cancer service. These results can inform design of patient-centred psychooncology services for cancer patients.

This research demonstrates that A&D in cancer patients is associated with increased healthcare utilisation. If A&D is managed through the implementation of a psychological intervention such as the ADAPT CP, there is potential to minimise healthcare utilisation and thus costs to the health system.