IMPACT OF DIABETES ON WOMEN'S HEALTH OUTCOMES: SURVIVAL, HEALTHY LIFE EXPECTANCY, AND HEALTH RELATED QUALITY OF LIFE

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STATEMENT OF ORIGINALITY

I hereby certify that the work embodied in the thesis is my own work, conducted under normal supervision. The thesis contains no material which has been accepted, or is being examined, for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968 and any approved embargo.

Befikadu L. Wubishet

ACKNOWLEDGEMENT OF AUTHORSHIP

I hereby certify that the work embodied in this thesis contains published papers of which I am a joint author. I have included as part of the thesis a written declaration endorsed in writing by my supervisor, attesting to my contribution to the joint publications.

By signing below I confirm that Befikadu L. Wubishet contributed to the development of the research questions, data analyses and interpretation, and writing up and revising of the following papers.

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ABBREVIATIONS

Abbreviation	Descriptor
ABS	Australian Bureau of Statistics
AIHW	The Australian Institute of Health and Welfare
ALSWH	The Australian Longitudinal Study on Women's Health
APDC	Admitted Patients Data Collection
ARIA+	Accessibility/Remoteness Index of Australia Plus
ARR	Adjusted risk ratio
ATC code	Anatomical Therapeutic Chemical code
AusDiab	The Australian Diabetes, Obesity and Lifestyle Study
BMI	Body Mass Index
CI	Confidence interval
CoD	Cause of death
DALY	Disability-adjusted life years
DFLE	Disability free life expectancy
EQ-5D	EuroQol-5 Dimension
HALE	Health adjusted life expectancy
HbA1c	Glycated haemoglobin
HLE	Healthy life expectancy
HRQOL	Health-related quality of life
ICD	International Classification of Diseases
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
IDF	International Diabetes Federation
MBS	Medicare Benefits Schedule
NDI	National Death Index
OR	Odds ratio
PBS	Pharmaceutical Benefits Scheme
PPV	Positive predictive value
NPV	Negative predictive value
RR	Relative risk
TLE	Total life expectancy
WHO	The World Health Organization

ABSTRACT

Background: Diabetes is one of the major chronic diseases posing a huge health and economic burden to patients, families, and health care systems in almost all corners of the world. Mainly due to its association with numerous complications and comorbidities, diabetes negatively affects patients' health outcomes, such as health-related quality of life (HRQOL), survival, and healthy life expectancy (HLE). Therefore, quantifying the impacts of diabetes based on methods that enable accurate identification of patients has important policy and practice implications.

Aims: The thesis aimed to: 1) demonstrate a robust method of diabetes case ascertainment through simultaneous use of multiple data sources; and 2) assess the impact of diabetes on survival, HLE, and HRQOL.

Methods: The participants in this thesis were the 1921–26 and 1946–51 birth cohorts of the Australian Longitudinal Study on Women's Health (ALSWH). ALSWH is a population-based prospective longitudinal study among Australian women that is largely focused on women's health and its determinants. The data sources used in this thesis were the ALSWH survey data and linked administrative datasets, including the Pharmaceutical Benefits Scheme (PBS), the Medicare Benefits Schedule (MBS), Admitted Patients Data Collection (APDC), and the National Death Index datasets.

Results: The findings revealed that Medicare Australia's datasets (PBS and MBS) had a moderate to substantial level of agreement with both the survey and hospital admission data in identifying women with diabetes. This thesis revealed that diabetes is one of the chronic conditions for which the validity and completeness of case ascertainment can be improved through the simultaneous use of multiple data sources. Women with diabetes had shorter survival compared to women without diabetes, but even those women with prevalent diabetes had a median survival of nearly 10 years at ages 76–81 years. Diabetes was associated with reductions in total life expectancy (TLE), HLE, and the proportion of remaining life years spent in good health at all ages after 70 years. Low

education, having three or more comorbidities, and obesity were also associated with reductions in TLE and HLE and increased unhealthy life expectancy. Women with diabetes had significant reductions in HRQOL scores over time compared to women without diabetes.

Conclusions: The findings of this thesis indicated that the validity and completeness of diabetes case ascertainment can be improved through simultaneous use of multiple data sources. Diabetes had a larger negative impact on women's HLE than their overall survival. Lower educational status, multimorbidity, and obesity were also negatively associated with women's health outcomes. These findings suggest a need for interventions aimed at diabetes prevention; and further improvements in the care of women with diabetes to improve their quality of life and promote healthy ageing.