

***Pelvic floor health in the nursing and  
midwifery workforce***

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DOCTOR OF PHILOSOPHY (HEALTH)

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## ***CERTIFICATE OF ORIGINAL AUTHORSHIP***

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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## **STATEMENT OF CONTRIBUTIONS**

- Heather Pierce is the author of this body of work. With the guidance and advice of all supervisors, Heather developed the research concepts and the design of studies undertaken during this candidature (note, the first study was part the larger 'Fit for the Future' project). She is the primary author of all publications and manuscripts included in this thesis.
- Professor Lin Perry is the principle supervisor and lead author of the Australian Research Council funded project 'Fit for the Future'. Professor Perry provided research training, mentoring, guidance and advice for all the studies undertaken during the course of this candidature. She contributed to the conception, design, writing, editing and proof reading of the thesis exegesis, all publications and manuscripts arising from research findings.
- Professor Robyn Gallagher was co-supervisor, and co- investigator of the Australian Research Council funded project 'Fit for the Future'. Professor Gallagher provided research training, mentoring, guidance and advice for all the studies undertaken during the course of this candidature. She contributed to the conception, design, writing and editing of the thesis exegesis, all publications and manuscripts arising from research findings.
- Professor Pauline Chiarelli was co-supervisor and topic expert. Professor Chiarelli provided guidance and expertise on the topic of 'pelvic floor health'. She contributed to the conception and design of the studies undertaken during this candidature and provided feedback on writings, including editing and proof reading of all publications and manuscripts arising from research findings.

## ***STATEMENT INDICATING THE FORMAT OF THESIS***

This thesis format is by publication.

This thesis comprises four published manuscripts (1 to 4), and a further two manuscripts (5 and 6) under peer review for consideration for publication. (Table 1.1). Manuscripts are included verbatim as accepted or submitted for publication, with introduction and conclusion of each chapter providing a dissertation of project findings and the research story. Copyright permissions to reproduce the first four manuscripts have been provided.

Summary of thesis format:

- **Chapter 1** is an introduction to the research topic. It provides the background on the topic of 'pelvic floor health', three research questions and an over view of study objectives.
- **Chapters 2 and 3** provide a preliminary concept analysis for the term 'pelvic floor health' (manuscript 1) and a literature review of the prevalence and impact of pelvic floor dysfunctions in workforce groups (manuscript 2).
- **Chapter 4** explains the selected research design, methodology and methods for the two studies undertaken during this candidature.
- **Chapter 5** answers the first research question (manuscript 3).
- **Chapters 6, 7 and 8** address all three research questions (manuscripts 4, 5 and 6).
- **Chapter 9** provides discussion and conclusion of the thesis exegesis, through integration of study findings from surveys (quantitative) and focus groups (qualitative).

## ***PUBLICATIONS, PRESENTATIONS, AWARDS AND MEDIA OPPORTUNITIES RELATED TO THIS THESIS***

### **PUBLICATIONS**

- **PIERCE, H., PERRY, L., GALLAGHER, R. & CHIARELLI, P.** 2015. Pelvic floor health: a concept analysis. *Journal of Advanced Nursing*, 71, 991-1004. <http://dx.doi.org/10.1111/jan.12628>
- **PIERCE, H., PERRY, L., CHIARELLI, P. & GALLAGHER, R.** 2016. A systematic review of the prevalence and impact of symptoms of pelvic floor dysfunction in identified workforce groups. *Journal of Advanced Nursing*, 72, 1718-1734. DOI: <http://doi.org/10.1111/jan.12909>
- **PIERCE, H., PERRY, L., GALLAGHER, R. & CHIARELLI, P.** 2017. Urinary incontinence, work, and intention to leave current job: A cross sectional survey of the Australian nursing and midwifery workforce. *Neurourology and Urodynamics*, 36, 1876-1883. <http://dx.doi.org/10.1002/nau.23202>
- **PIERCE, H., PERRY, L., GALLAGHER, R. & CHIARELLI, P.** 2018. Severity of urinary incontinence and its impact on work productivity among nurses and midwives in urban Australia. *Australian and New Zealand Continence Journal*, 24, 7-15. {ISSN: 1448-0131}

### **PRESENTATIONS**

#### ***ORAL PRESENTATIONS:***

- 48th Annual Scientific Meeting of the International Continence Society, Philadelphia USA, September 2018.  
Abstract 211 “Hold till you bust”: A qualitative exploration of nurses’ experiences of urinary symptoms in the workplace.  
<https://www.ics.org/2018/abstract/211>
- International Commission on Occupational Health (ICOH) Triennial 32nd International Congress, Dublin Ireland, May 2018.  
Abstract 417 *Limited fluid and restricted toileting are associated with reduced work productivity in women at work.*

[https://oem.bmj.com/content/75/Suppl\\_2/A530.2](https://oem.bmj.com/content/75/Suppl_2/A530.2)

- 47th Annual Scientific Meeting of the International Continence Society, Florence Italy, September 2017.  
*Abstract 530. Limited fluid intake and restricted toileting are behaviours associated with reduced work productivity for women with storage lower urinary tract symptoms at work.* <https://www.ics.org/2017/abstract/530>
- 26th National Conference on Incontinence, Continence Foundation of Australia, Sydney Australia, 2017. *Urinary incontinence and work productivity in the nursing and midwifery workforce.*
- World Confederation for Physical Therapy Congress, Cape Town South Africa, July 2017. *Urinary incontinence and work: Is there a need for continence promotion in occupational health?*
- Momentum 2017, Australian Physiotherapy Association National Conference, Sydney Australia, September 2017. *Limited fluid intake and restricted toileting are associated with reduced work productivity for women with urinary storage symptoms at work.*
- Invited keynote address: Women's and Newborn Health Conference, Westmead Hospital, Western Sydney Local Health District, Sydney Australia. May 2017. *Transforming care: Foundations for the future.*

#### **POSTER PRESENTATIONS**

- International Commission on Occupational Health (ICOH) Triennial 32nd International Congress, Dublin Ireland, 29 April to 4 May 2018.  
*Abstract 594 Urinary incontinence and intention to leave current job.* [https://oem.bmj.com/content/75/Suppl\\_2/A531.2](https://oem.bmj.com/content/75/Suppl_2/A531.2)
- 25th National Conference on Incontinence, Continence Foundation of Australia, Adelaide Australia, November 2016. *Urinary incontinence in the Australian nursing and midwifery workforce: Prevalence, severity and work-related characteristics.*
- National Nursing Forum, Australian College of Nursing, Melbourne Australia, October 2016. *Urinary continence and incontinence in the Australian nursing and midwifery workforce: prevalence, severity and work related characteristics.*

## SCHOLARSHIPS AND AWARDS

- 2014-16: Australian Research Council Scholarship for Research Project: *'Fit for the Future'* ARC LP130100694.
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- 2016, 2017: University of Technology Sydney, Faculty of Health, Health Services and Practice Research Student Development Awards
- 2017: International Continence Society Travel Award
- 2017, 2018: University of Technology Sydney, Vice Chancellors Conference Award

## MEDIA OPPORTUNITIES

- Aged Care Insite and Nursing Review. Dallas Bastion, Health Editor, Newscorp:
- <https://www.agedcareinsite.com.au/2017/03/study-shines-light-on-urinary-incontinence-among-nurses-midwives/>  
<http://news.nursesfornurses.com.au/Nursing-news/urinary-incontinence-work-nurses/>
- NSW Nurses and Midwives Association, Susan Ardill, Communications Officer:  
<https://www.nurseuncut.com.au/is-stress-incontinence-more-prevalent-amongst-nurses/>

## ***DEDICATION***

For Bob, Bec, Scott and Nikki

Isaiah 61



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# TABLE OF CONTENTS

Certificate of original authorship .....	ii
Statement of contributions .....	iii
Statement indicating the format of thesis .....	iv
Publications, presentations, awards and media opportunities related to this thesis .....	v
<i>Publications</i> .....	v
<i>Presentations</i> .....	v
<i>Scholarships and awards</i> .....	vii
<i>Media opportunities</i> .....	vii
Dedication.....	viii
Acknowledgements.....	ix
Table of contents .....	x
List of tables.....	xix
List of figures .....	xx
List of boxes.....	xx
Acronyms.....	xxi
Glossary of terms.....	xxii
ABSTRACT.....	1
<i>Background</i> .....	1
<i>Aims</i> .....	1
<i>Methods</i> .....	1
<i>Findings</i> .....	2
<i>Significance</i> .....	2
<b>Chapter 1 : INTRODUCTION.....</b>	<b>3</b>
BACKGROUND .....	4
<i>The pelvic floor (PF)</i> .....	4
<i>Prevalence and risk factors for PF dysfunction</i> .....	4
<i>Evidence-based recommendations for PF health and dysfunction</i> .....	5
SIGNIFICANCE .....	6
<i>The nursing and midwifery workforce</i> .....	6

<i>Occupational health and human rights</i> .....	7
<i>Patient care and self-care</i> .....	7
RESEARCH QUESTIONS .....	8
RESEARCH OBJECTIVES AND SCOPE.....	8
<i>Concept definition and literature review: PF health and PF dysfunction in workforce groups</i> .....	8
<i>Question 1: Prevalence and impact of urinary incontinence in the nursing and midwifery workforce</i> .....	9
<i>Question 2: Nurses and midwives' experience of urinary symptoms at work</i> ..	9
<i>Question 3: Recommendations for PF health promotion in the nursing and midwifery workforce</i> .....	10
THESIS STRUCTURE, PUBLICATIONS AND PRESENTATIONS .....	10
RESEARCHER'S POSITION AND MOTIVATION .....	12
CHAPTER CONCLUSION .....	12
REFERENCES .....	13
<b>Chapter 2 : PELVIC FLOOR HEALTH: A CONCEPT ANALYSIS</b> .....	<b>19</b>
CHAPTER INTRODUCTION .....	19
INTRODUCTION .....	20
BACKGROUND .....	21
THE REVIEW.....	25
<i>Purpose of the analysis</i> .....	26
<i>Data sources</i> .....	27
<i>Data extraction</i> .....	28
RESULTS .....	29
<i>Defining attributes</i> .....	32
<i>Definition</i> .....	34
<i>Antecedents, consequences and references</i> .....	35
<i>Model case</i> .....	35
<i>Related concepts and alternate terms</i> .....	36
DISCUSSION.....	36
<i>Limitations</i> .....	39
CONCLUSION .....	39
CHAPTER CONCLUSION .....	40

REFERENCES .....	41
<b>Chapter 3 : A SYSTEMATIC REVIEW OF PREVALENCE AND IMPACT OF SYMPTOMS OF PELVIC FLOOR DYSFUNCTION IN IDENTIFIED WORKFORCE GROUPS. ....</b>	<b>49</b>
CHAPTER INTRODUCTION .....	49
INTRODUCTION .....	50
<i>Background</i> .....	51
THE REVIEW .....	54
<i>Aim</i> .....	54
<i>Design</i> .....	54
<i>Search methods</i> .....	55
RESULTS .....	58
<i>Study characteristics</i> .....	58
<i>Study quality</i> .....	58
<i>Research question one: Prevalence of symptoms of defined PF dysfunction subtypes in identified workforce or occupational groups</i> .....	65
<i>Research question two: The influence of symptoms of PF dysfunction on work productivity.</i> .....	67
DISCUSSION .....	68
<i>Prevalence of PF dysfunction in workforce groups: nurses</i> .....	69
<i>Impact of symptoms of PF dysfunction in workforce groups</i> .....	71
<i>Limitations</i> .....	73
CONCLUSION .....	73
<i>Literature update July 2018</i> .....	74
CHAPTER CONCLUSION .....	75
REFERENCES .....	76
<b>Chapter 4 : RESEARCH DESIGN, METHODOLOGY AND METHODS .....</b>	<b>85</b>
CHAPTER INTRODUCTION .....	85
RESEARCH DESIGN .....	87
STUDY 1: METHODOLOGY AND METHODS .....	88
<i>Study 1: Aims</i> .....	89
<i>Study 1: Design</i> .....	89
<i>Study 1: Instruments</i> .....	90

<i>Study 1: Participants</i> .....	93
<i>Study 1: Method</i> .....	94
<i>Study 1: Data analyses</i> .....	94
<i>Study 1: Ethical considerations</i> .....	95
<i>Study 1: Storage and archiving of study documents and data</i> .....	96
STUDY 2: METHODOLOGY AND METHODS .....	96
<i>Study 2: Aims</i> .....	96
<i>Study 2: Design</i> .....	97
<i>Study 2: Resources</i> .....	98
<i>Study 2 Phase 1: Method - The survey</i> .....	100
<i>Study 2 Phase 1: Instruments</i> .....	101
<i>Study 2 Phase 1: Data collection</i> .....	103
<i>Study 2 Phase 1: Sample size</i> .....	104
<i>Study 2 Phase 1: Data analyses</i> .....	105
<i>Study 2 Phase 2: Method - Focus group interviews</i> .....	108
<i>Study 2 Phase 2: Data collection</i> .....	109
<i>Study 2 Phase 2: Data analyses</i> .....	110
<i>Study 2 Phase 2: Theoretical framework</i> .....	111
<i>Study 2: Ethical considerations</i> .....	113
<i>Study 2: Storage and archiving of study documents and data</i> .....	114
CHAPTER CONCLUSION .....	114
REFERENCES .....	115
<b>Chapter 5 : URINARY INCONTINENCE, WORK AND INTENTION TO LEAVE CURRENT JOB: A CROSS SECTIONAL SURVEY OF THE AUSTRALIAN NURSING AND MIDWIFERY WORKFORCE.</b> .....	<b>122</b>
CHAPTER INTRODUCTION .....	122
INTRODUCTION .....	123
MATERIALS AND METHODS .....	125
<i>Design, participants and data collection</i> .....	125
<i>Instruments</i> .....	125
RESULTS .....	128
<i>Characteristics of participants</i> .....	128
<i>Prevalence and severity of UI</i> .....	128

<i>Associations between UI severity, health and work variables</i> .....	129
DISCUSSION .....	133
<i>Prevalence of UI in the nursing and midwifery workforce</i> .....	133
<i>UI severity and workforce participation</i> .....	134
<i>Treatable nature of UI: implications for the workforce</i> .....	135
CONCLUSION .....	136
CHAPTER CONCLUSION .....	136
REFERENCES .....	137

**Chapter 6 : SEVERITY OF URINARY INCONTINENCE AND ITS IMPACT ON WORK PRODUCTIVITY AMONG NURSES AND MIDWIVES IN URBAN**

<b>AUSTRALIA</b> .....	<b>141</b>
CHAPTER INTRODUCTION .....	141
INTRODUCTION .....	142
METHOD .....	146
<i>Data collection</i> .....	146
<i>Prevalence of UI and storage LUTS at work</i> .....	146
<i>Work productivity (impairment)</i> .....	147
<i>Characteristics of participants</i> .....	148
<i>Statistical analyses</i> .....	149
RESULTS .....	150
<i>Characteristics of participants</i> .....	150
<i>Prevalence and severity of UI and storage LUTS at work</i> .....	151
<i>UI severity and work productivity</i> .....	151
DISCUSSION .....	156
<i>UI and work productivity in nurses</i> .....	156
<i>UI and implications for occupational health policy</i> .....	157
<i>Study strengths and limitations</i> .....	158
CONCLUSION.....	159
CHAPTER CONCLUSION.....	159
REFERENCES .....	160

**Chapter 7 : DELAYING VOIDING, LIMITING FLUIDS, URINARY SYMPTOMS AND WORK PRODUCTIVITY: A CROSS-SECTIONAL SURVEY OF AUSTRALIAN NURSES AND MIDWIVES..... 166**

CHAPTER INTRODUCTION .....	166
INTRODUCTION .....	167
AIMS AND OBJECTIVES .....	171
METHODS .....	171
<i>Study Design</i> .....	171
<i>Conceptual model</i> .....	172
<i>Variables and measures</i> .....	172
<i>Sample and data collection strategy</i> .....	175
<i>Statistical analyses</i> .....	175
RESULTS .....	176
<i>Demographic and work characteristics</i> .....	176
<i>Restricted access to toilets, delaying voiding and limiting fluids at work</i> .....	177
<i>Urinary symptoms at work</i> .....	180
<i>Delaying voiding, limiting fluids and work productivity</i> .....	180
DISCUSSION .....	180
<i>Bladder practices and nurses' health</i> .....	181
<i>Delaying voiding: the 'nurses' bladder'</i> .....	181
<i>Bladder practices and work productivity</i> .....	184
<i>A workforce health issue</i> .....	185
<i>Strengths and limitations</i> .....	186
CONCLUSION .....	186
CHAPTER CONCLUSION .....	187
REFERENCES .....	188

<b>Chapter 8 : CULTURE, TEAMS AND ORGANISATIONS: A QUALITATIVE EXPLORATION OF NURSES' AND MIDWIVES' EXPERIENCES OF URINARY SYMPTOMS AT WORK .....</b>	<b>196</b>
CHAPTER INTRODUCTION .....	196
INTRODUCTION .....	197
Background .....	197
THE STUDY .....	199
<i>Aims</i> .....	199
<i>Design</i> .....	199
<i>Sample and setting</i> .....	199

<i>Data collection</i> .....	199
<i>Ethical considerations</i> .....	200
<i>Data analysis</i> .....	200
<i>Rigour</i> .....	201
FINDINGS.....	201
<i>Participant characteristics</i> .....	201
<i>Nurses' experiences of urinary symptoms at work</i> .....	202
<i>Nursing culture: 'Patient-first'</i> .....	203
<i>Nursing team relationships</i> .....	205
<i>Nursing role</i> .....	206
<i>Adequacy of amenities in the workplace</i> .....	207
<i>Prevention and management of urinary symptoms in the workplace</i> .....	207
DISCUSSION .....	209
<i>'Nurses' bladder' practice: Delaying voiding</i> .....	209
<i>Nurses' culture of caring: care of self and others</i> .....	210
<i>Relationships in the nursing team</i> .....	212
<i>Workforce management and workplace environment</i> .....	212
<i>Limitations and future research</i> .....	213
CONCLUSION.....	214
CHAPTER CONCLUSION.....	215
REFERENCES .....	216
<b>Chapter 9 : DISCUSSION, RECOMMENDATIONS AND CONCLUSION.....</b>	<b>222</b>
CHAPTER INTRODUCTION .....	222
DISCUSSION .....	222
<i>The concept of PF health</i> .....	222
<i>PF dysfunction in workforce groups</i> .....	224
<i>Prevalence and impact of symptoms of PF dysfunction in the Australian nursing and midwifery workforce</i> .....	224
<i>Factors that influence nurses' and midwives' experience of symptoms at work .....</i>	228
RECOMMENDATIONS.....	232
<i>Future research</i> .....	234
<i>Strengths and limitations</i> .....	235



CONCLUSION .....	236
REFERENCES .....	238
APPENDICES.....	247
<i>APPENDIX 1: Published manuscript: ‘Pelvic floor health: A concept analysis’</i> .....	247
<i>APPENDIX 2: Academic and dictionary definitions of terms related to ‘pelvic floor health’</i> .....	263
<i>APPENDIX 3: Published manuscript: ‘A systematic review of prevalence and impact of PF dysfunction in identified workforce groups’</i> .....	269
<i>APPENDIX 4: Search history ‘Prevalence and impact of symptoms of pelvic floor dysfunction in identified workforce groups: a systematic review’</i> .....	286
<i>APPENDIX 5: The Joanna Briggs Institute prevalence critical appraisal instrument (Munn et al., 2014)</i> .....	292
<i>APPENDIX 6: Appraisals of studies using the Joanna Briggs Institute Prevalence Critical Appraisal Instrument (Munn et al., 2014)</i> .....	293
<i>APPENDIX 7: Pelvic floor dysfunction, worker quality of life and work stress.</i> .....	294
<i>APPENDIX 8: Survey variables, sources and reported psychometric assessments for the Fit for the Future survey.</i> .....	296
<i>APPENDIX 9: The ‘Fit for the Future’ Questionnaire</i> .....	301
<i>APPENDIX 10: The ICIQUI-SF</i> .....	322
<i>APPENDIX 11: Permission to use the ICIQUI-SF</i> .....	323
<i>APPENDIX 12: Working table for predictor variables for entry into log regression for outcome ‘intention to leave’ at 12 months.</i> .....	324
<i>APPENDIX 13: Australian Bladder Foundation grant completion report</i> .....	325
<i>APPENDIX 14: Source and psychometric properties of variables used for Study 2</i> .....	331
<i>APPENDIX 15: Pelvic floor health in nurses and midwives: Survey</i> .....	335
<i>APPENDIX 16: English version of the Taiwan Teacher Bladder Survey</i> .....	345
<i>APPENDIX 17: Permission to use the Taiwan Teacher Bladder Survey items</i> .....	356
<i>APPENDIX 18: Correlation between covariates for multiple regression with US-WLQ scores as primary outcome for nurses and midwives with storage LUTS at work</i> .....	357

*APPENDIX 19: ‘Pelvic floor health in nurses and midwives’ Interview protocol and guide ..... 358*

*APPENDIX 20: Published manuscript: ‘Urinary incontinence, work and intention to leave current job: A cross sectional survey of the Australian nursing and midwifery workforce’ ..... 361*

*APPENDIX 21: Published manuscript: ‘Severity of urinary incontinence and its impact on work productivity among nurses and midwives in urban Australia’ ..... 370*

*APPENDIX 22: Concept map for mixed methods study: influences on pelvic floor health and dysfunction ..... 380*

## ***LIST OF TABLES***

Table 1.1: Thesis structure and publications.....	11
Table 2.1: Contextual attributes of ‘pelvic floor health’ and health care discipline author(s) in the academic literature.....	29
Table 2.2: Themes related to ‘pelvic floor health’ and healthcare discipline author(s) in the academic literature.....	30
Table 2.3: Themes and key words for ‘pelvic floor health’ in the academic literature.....	31
Table 2.4: Themes and key words in Google search ‘pelvic floor health’.....	31
Table 2.5: Google search of ‘pelvic floor health’: First 30 relevant websites with country of origin and order of presentation (hit number).....	34
Table 3.1: Definitions of subtypes of female pelvic floor dysfunction (modified from Haylen et al., 2010).....	52
Table 3.2: The nursing workforce.....	59
Table 3.3: Other workforce groups.....	61
Table 3.4: Pelvic Floor dysfunction subtypes and prevalence associations.....	63
Table 5.1: Comparison of the health characteristics of nurses and midwives with and without UI and the ICIQUI-SF.....	130
Table 5.2: Comparison of work characteristics of nurses and midwives with and without UI and the ICIQUI-SF.....	131
Table 5.3 Severity of UI as a predictor of intention to leave at 12 months for nurses and midwives with UI.....	132
Table 6.1: Demographic, health and work characteristics of female nurses and midwives with or without urinary storage symptoms (at work), and with or without urinary incontinence (at any time).....	152
Table 6.2: Comparison of work impairment scores for total female nurses and midwives with storage LUTS at work, with or without and severity of urinary incontinence.....	155

Table 6.3: UI severity as predictor of work impairment for nurses and midwives with storage LUTS at work.....	155
Table 7.1: Comparison of the health characteristics of female nurses and midwives who do and do not have restricted access to toilets, delay voiding or limit their fluid intakes at work. ....	178
Table 7.2: Comparison of work impairment scores for nurses with urinary symptoms at work who do and do not have restricted access to toilets, delay voiding or limit their fluid intake at work. ....	179
Table 7.3: Delaying voiding or limiting fluid intake as predictors of work impairment for nurses with urinary symptoms at work. ....	179
Table 9.1: Recommendations that reflect socio-cultural influence on health behaviours .....	233

## ***LIST OF FIGURES***

Figure 2.1: Search strategy for 'pelvic floor health' in the academic literature ..	28
Figure 3.1: Flowchart of study selection for inclusion in review .....	57
Figure 4.1: Research questions, aims and methodology .....	86
Figure 4.2: Study 2 outline of process. ....	99
Figure 5.1: Prevalence of slight, moderate and severe or very severe UI in each 15 year age band of women with UI .....	129
Figure 8.1: Socioecological model of the key themes that explain nurses' behaviour related to their experience of urinary symptoms at work .....	203

## ***LIST OF BOXES***

Box 2.1: Rodger's steps in concept analysis (Rodgers and Knafel, 2002).....	26
Box 6.1: Terminology and definitions from the ICS.....	144
Box 6.2: Sample of questions adapted for a urinary specific version of the Work Limitations Questionnaire (US-WLQ).....	148

## **ACRONYMS**

ABF	Australian Bladder Foundation
ALSWH	Australian Longitudinal Study on Women's Health
AIHW	Australian Institute of Health and Welfare
AI	Anal incontinence
BMI	Body Mass Index
CRD	Centre for Reviews and Dissemination
DON	Director of Nursing
HREC	Human Research Ethics Committee
ICIQUI-SF	International Consultation on Incontinence Questionnaire Urinary Incontinence-Short Form
ICIQ-FLUTS	International Consultation on Incontinence Questionnaire Female Lower Urinary Tract Symptoms
ICIQ-VS	International Consultation on Incontinence Questionnaire- Vaginal Symptoms
IUGA	International Urogynecological Association
LUTS	Lower urinary tract symptoms
MUI	mixed urinary incontinence
NSW	New South Wales
NSWNMA	New South Wales Nurses and Midwives Association
OAB	Overactive bladder
PF	Pelvic floor
PFMT	Pelvic floor muscle training
POP	Pelvic organ prolapse
POW	Prince of Wales (Hospital)
RN/RM	Registered Nurse/Registered Midwife
RHW	Royal Hospital for Women
SUI	Stress urinary incontinence
UI	Urinary incontinence
UTS	University of Technology Sydney
UII	Urgency urinary incontinence
WHO	World Health Organisation
WLQ	Work Limitations Questionnaire

## **GLOSSARY OF TERMS**

### **Pelvic floor health**

“... the physical and functional integrity of the pelvic floor unit through the life stages of an individual (male or female), permitting optimal quality of life through its multifunctional role, and where the individual possesses or has access to knowledge, which empowers the ability to prevent or manage dysfunction.”

(Pierce et al., 2015, p.999).

### **Health promotion**

The process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions.

([http://www.who.int/topics/health\\_promotion/en/](http://www.who.int/topics/health_promotion/en/))

### **Pelvic floor dysfunction**

Symptoms experienced by an individual when there is “...a departure from the normal in structure, function or sensation ...” of the pelvic floor unit. Signs, confirmed by investigations evidence diagnoses of a condition or disease.

(Haylen et al., 2010, p.6).

### **Workforce**

1. Workers who are engaged in a specific activity or enterprise.
2. The number of workers potentially assignable for any purpose.

(<https://www.merriam-webster.com/dictionary/workforce>)

### **Work productivity**

The ability (or capacity) to carry out specific roles and tasks when at work.

(Tang et al., 2011)

# **ABSTRACT**

## **BACKGROUND**

Integral to pelvic floor (PF) health are social practices that preserve continence. When PF health is diminished, urinary symptoms may be experienced, which by their very nature remain under-reported despite negative effects on quality of life. Many people spend large portions of their lives at work; employers and organisations have a duty to support PF health in the workplace.

## **AIMS**

This research sought to investigate PF health in the female nursing and midwifery workforce. The questions addressed were:

1. What is the prevalence and impact of PF dysfunction in the nursing and midwifery workforce?
2. What factors negatively influence the experience of symptoms at work, and what strategies will ameliorate these?
3. Based on these findings, what are key recommendations to nurses, midwives, managers and policy makers for PF health promotion in this workforce?

## **METHODS**

Firstly, an operational definition for the concept 'PF health' is offered. Then, a review of the literature with respect to the prevalence and impact of PF dysfunctions in workforce groups determined gaps in knowledge. A mixed methods observational study using surveys and focus groups investigates PF dysfunctions in female nurses and midwives. The first survey is a state-wide investigation, the second involves three urban hospitals, examining the relationship of urinary symptoms to work ability and future work plans. Experiences of symptoms in the workplace, explored through focus group discussion, provide in-depth understanding, informing recommendations for PF health at work.

## **FINDINGS**

PF health encompasses the physical and functional integrity of the PF unit through an individual's life stages to permit optimal quality of life, where access to knowledge empowers the ability to prevent or manage dysfunctions. Of the nurses and midwives surveyed in this research, half experience urinary symptoms while at work. Those with severe incontinence are likely to leave their job and moderate incontinence negatively impacts concentration and time management at work. Delaying voiding and limiting fluid intakes are common work practices linked to nurses' and midwives' experiences of urinary symptoms, reflecting poor self-care. Workplace team relationships, workforce management and adequacy of amenities are key influences on nurses' and midwives' health practices.

## **SIGNIFICANCE**

PF dysfunctions are common in this workforce, associated with poor self-care and reduced work ability. Policies for PF health at work will support cultural, social and organisational change. Equitable and dignified access to amenities will empower female nurses and midwives to self-care, enabling them to care for others.