

2017

Investigating the practice and capacity of paediatric occupational therapists to promote the physical activity levels of children in Western Australia

Sally Coombs
Edith Cowan University

Follow this and additional works at: <https://ro.ecu.edu.au/theses>



Part of the [Health Communication Commons](#), [Occupational Therapy Commons](#), [Pediatrics Commons](#), and the [Public Health Commons](#)

Recommended Citation

Coombs, S. (2017). *Investigating the practice and capacity of paediatric occupational therapists to promote the physical activity levels of children in Western Australia*. Edith Cowan University. Retrieved from <https://ro.ecu.edu.au/theses/1996>

This Thesis is posted at Research Online.
<https://ro.ecu.edu.au/theses/1996>

Edith Cowan University

Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study.

The University does not authorize you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following:

- Copyright owners are entitled to take legal action against persons who infringe their copyright.
- A reproduction of material that is protected by copyright may be a copyright infringement. Where the reproduction of such material is done without attribution of authorship, with false attribution of authorship or the authorship is treated in a derogatory manner, this may be a breach of the author's moral rights contained in Part IX of the Copyright Act 1968 (Cth).
- Courts have the power to impose a wide range of civil and criminal sanctions for infringement of copyright, infringement of moral rights and other offences under the Copyright Act 1968 (Cth). Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

Investigating the practice and capacity of paediatric occupational therapists to promote the physical activity levels of children in Western Australia

This thesis is presented in partial fulfilment of the degree of
Master of Public Health

Sally Coombs

Edith Cowan University

School of Medical and Health Sciences

2017

Abstract

Reorientation of the Australian health care system to meet the increasing burden of disease requires health workers to develop a focus on disease prevention and health promotion. In Western Australia (WA) a priority area for the promotion of health involves increasing the physical activity levels (PAL) of children in accordance with Australia's Physical Activity and Sedentary Behaviour Guidelines. There is substantial support in the literature for paediatric occupational therapists, who assist children to participate in a range of meaningful occupations, to incorporate the promotion of children's PAL into their service. However, there is a dearth of research world-wide regarding occupational therapists' capacity for and involvement in health promotion, with no studies concerning their promotion of children's PAL.

This study aimed to develop an understanding of paediatric occupational therapists' involvement in, and capacity for, implementing health promotion activities to increase the PAL of children in WA aged 0-18 years. The application of the Building Health Promotion Capacity theoretical framework throughout the study enabled robust analysis of participants' capacity for health promotion. A mixed methods design was employed with qualitative data illustrating and verifying the initial quantitative findings. Self-report questionnaires were completed by 86 paediatric occupational therapists in WA, representing 28% of the total population. This elicited cross-sectional quantitative data of participants' involvement in and capacity for promoting the PAL of children, as well as barriers to their involvement. Following these, in-depth interviews were completed with 9 paediatric occupational therapists and thematically analysed to determine barriers and enablers to promoting children's PAL.

Quantitative data revealed the majority of participants were involved in promoting the PAL of some of the individual children with whom they worked. In addition, half of the participants who worked with all children in a community setting had incorporated community-level strategies to increase children's PAL. Reflecting an alignment with the Ottawa Charter for Health Promotion, participants implemented a combination of strategies relating to creating supportive environments, developing personal skills, and strengthening community action. Participants rated their capacity positively in relation to having the necessary knowledge, skill and commitment to promote children's PAL; however, having access to necessary resources rated close to neutral. Analysis of quantitative and qualitative data revealed significant

enablers to paediatric occupational therapists' promoting children's PAL include holding a belief in its importance and having confidence in their clinical skills and knowledge. Common barriers were a lack of resources, including time due to a heavy clinical workload and inadequate funding. In addition, commitment to increasing children's PAL was impacted by competing clinical priorities, which were influenced by the priorities of each child's family, limited recognition of occupational therapists' competency, and a lack of managerial and political support for primary prevention activity.

This study raises awareness of the important contribution paediatric occupational therapists in WA have made towards promoting children's PAL. Common barriers reveal the need for ongoing efforts to increase awareness amongst occupational therapists and health services' management of the importance of a preventative approach to delivering health services. This study provides foundation information and valuable insights regarding paediatric occupational therapists' views and experiences implementing health promotion activities in WA, which can be used to inform paediatric occupational therapy practice and education, and inform initiatives for building the health promotion capacity of a multidisciplinary workforce.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

- i. incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;
- ii. contain any material previously published or written by another person except where due reference is made in the text of this thesis; or
- iii. contain any defamatory material.

Signature:



Sally Coombs

Date:

28/02/2017

Acknowledgement

I am grateful to all those who have helped me to complete this study. In particular, I appreciate the guidance and advice of my supervisors, Dr Julie Dare, Dr Celia Wilkinson and Dr Janet Richmond. I also appreciate the support of Dr Jacqui Coombes for her guidance regarding statistical analysis.

Importantly, I wish to thank all the occupational therapists who have participated in this study for their time and expertise.

Contents Page

	Page
Abstract	2
Declaration	4
Acknowledgement	5
List of Tables	9
List of Figures	10
List of Abbreviations	11
Definitions	13
Chapter 1: Introduction.....	15
1.1 Introduction to the study.....	15
1.2 Physical activity for children’s health.....	15
1.3 The physical activity levels (PAL) of Western Australian children.....	17
1.4 Health promotion priorities and strategies in Western Australia (WA).....	18
1.5 Occupational therapists’ role in health promotion.....	19
1.6 Aims and objectives of the study.....	21
1.7 Significance of the study.....	22
1.8 Overview of the thesis.....	22
Chapter 2: Literature Review.....	24
2.1 Introduction.....	24
2.2 Overview of occupational therapy practice in paediatrics in Australia.....	24
2.3 Recommended role for occupational therapists in the promotion of children’s physical activity levels (PAL).....	25
2.4 Health promotion practice of occupational therapists.....	32
2.5 Capacity for health promotion.....	36
2.5.1 Occupational therapists’ commitment to health promotion.....	37
2.5.2 Occupational therapists’ knowledge and skill for health promotion.....	41
2.5.3 Occupational therapists’ resources for health promotion.....	43
2.6 Conclusion.....	46
Chapter 3: Methods.....	47
3.1 Introduction.....	47
3.2 Research Aims, Objectives and Questions.....	47
3.3 Scope of the Study.....	48
3.4 Research Paradigm.....	48
3.5 Research Methods Overview.....	49
3.6 Part One: Self-report questionnaire.....	50
3.6.1 Sample and Sampling Approach.....	51
3.6.2 Questionnaire content and development.....	52
3.6.3 Validity and reliability of the self-report questionnaire.....	55
3.6.4 Protocol.....	55
3.6.5 Data Analysis.....	56
3.7 Part Two: In-depth Interviews.....	58
3.7.1 Participant Recruitment.....	59

3.7.2 Protocol.....	59
3.7.3 In-depth interview questions.....	60
3.7.4 Data Analysis.....	60
3.8 Human research ethics.....	62
3.9 Summary.....	63
Chapter 4: Results.....	65
4.1 Introduction.....	65
Part One Results.....	65
4.2 Demographic characteristics of Part One participants.....	65
4.3 Workplace characteristics of Part One participants.....	67
4.4 Characteristics of the children supported by Part One participants.....	68
4.5 Part One participants' practice to support children.....	69
4.6 The practice of Part One participants who worked with individual children to promote their physical activity levels (PAL)	69
4.7 The practice of Part One participants who worked with all children in a community setting to promote their physical activity levels (PAL).....	71
4.8 Part One participants' capacity to promote the physical activity levels (PAL) of children.....	72
4.9 Barriers to Part One participants' promotion of the physical activity levels (PAL) of children.....	75
4.10 Comparison of Part One responses per participants' involvement in promoting the physical activity levels (PAL) of children.....	76
Part Two Results.....	82
4.11 Demographic characteristics of Part Two participants.....	82
4.12 Thematic analysis.....	84
4.13 Enablers.....	86
4.14 Barriers.....	94
4.15 Summary of research findings.....	106
Chapter 5: Discussion and Conclusion.....	109
5.1 Introduction.....	109
5.2 Overview of the research design.....	109
5.3 Profile of participants.....	110
5.4 Paediatric occupational therapists' involvement in promoting the physical activity levels (PAL) of individual children.....	111
5.5 Paediatric occupational therapists' involvement in promoting the physical activity levels (PAL) of all children in a community setting.....	113
5.6 Paediatric occupational therapists' capacity for promoting the physical activity levels (PAL) of Western Australian children.....	116
5.7 Enabling factors to paediatric occupational therapists' promotion of the physical activity levels (PAL) of Western Australian children.....	119
5.8 Barriers to paediatric occupational therapists' promotion of the physical activity levels (PAL) of Western Australian children.....	123
5.9 Recommendations: Overview.....	129
5.9.1 Recommendations for occupational therapists.....	130
5.9.2 Recommendations for health services management.....	134
5.9.3 Recommendations for health promotion practitioners.....	136
5.10 Significance of the Study.....	138

5.11 Limitations and Further Research.....	139
5.11 Conclusion.....	141
Reference List	144
Appendices	151
Appendix 1: Self-Report Questionnaire.....	151
Appendix 2: Introductory letter to members of Developmental Occupational Therapy (Western Australia) Inc.....	160
Appendix 3: Information sheet for Part One.....	162
Appendix 4: Information sheet for Part Two.....	164
Appendix 5: Questions for Part Two	166
Appendix 6: Transcripts of In-depth interviews.....	167

List of Tables

		Page
Table 3.1	Definitions included in the self-report questionnaire	52
Table 3.2	An example to illustrate the connections between data, theory-driven and data-driven codes and themes and sub-themes from the in-depth interviews	62
Table 4.1a	Demographic characteristics of Part One participants – nominal data	67
Table 4.1b	Demographic characteristics of Part One participants – continuous data	67
Table 4.2	Workplace characteristics of Part One participants	67
Table 4.3a	Characteristics of the children supported by Part One participants – continuous data	68
Table 4.3b	Characteristics of the children supported by Part One participants – nominal data	68
Table 4.4a	Part One participants' practice to support children – nominal data	69
Table 4.4b	Part One participants' practice to support children – continuous data	69
Table 4.5a	The practice of Part One participants who worked with individual children to promote their physical activity levels – nominal data	70
Table 4.5b	The practice of Part One participants who worked with individual children to promote their physical activity levels – continuous data	70
Table 4.6	The practice of Part One participants who worked with all children in a community setting to promote their physical activity levels	71
Table 4.7	Internal reliability of rating scale measuring participant's capacity to promote the physical activity levels of children.	73
Table 4.8	Part One participants' ratings of their capacity to promote the physical activity levels of children	74
Table 4.9	Number of participants within each cohort	76
Table 4.10a	Comparison of demographic characteristics across cohorts – nominal data	77
Table 4.10b	Comparison of demographic characteristics across cohorts – ordinal data	77
Table 4.11	Comparison of workplace characteristics across cohorts	78
Table 4.12a	Comparison of characteristics of children across cohorts – nominal data	78
Table 4.12b	Comparison of characteristics of children across cohorts – ordinal data	79
Table 4.13	Comparison of capacity ratings across cohorts	80
Table 4.14	Comparison of common barriers across cohorts	82
Table 4.16	Demographic characteristics of Part Two participants	83
Table 4.17	Workplace characteristics of Part Two participants	83
Table 4.18	Characteristics of the children supported by Part Two participants	84
Table 4.19	Part Two participants' involvement in promoting children's physical activity levels	84
Table 4.20	Themes and subthemes relating to enablers and barriers to participants' involvement in promoting children's physical activity levels	85

List of Figures

		Page
Figure 3.1	Overview of research approach employed by the study	50
Figure 4.1	The activities of Part One participants who promoted the physical activity levels of individual children	71
Figure 4.2	The activities of Part One participants who promoted the physical activity levels of all children in a community setting	72
Figure 4.3	Barriers to Part One participants' promotion of the physical activity levels of children	75

List of Abbreviations

AHPRA	Australia Health Practitioner Regulation Agency
AOTA	American Occupational Therapy Association
CALD	Culturally and Linguistically Diverse
CDC/CDS	Child Development Centre/Child Development Service
CMCE	Canadian Model of Client-Centred Enablement (Townsend & Polatajko, 2013)
CMOP-E	Canadian Model of Occupational Performance and Engagement (Townsend & Polatajko, 2013)
DCD	Developmental Coordination Disorder
DOT (WA) Inc.	Developmental Occupational Therapy Western Australia Incorporated.
EACH-Child	Engaging and Coaching for Health (EACH)-Child (Ziviani, Poulsen, & Hansen, 2009)
ECU	Edith Cowan University
HPSF	Western Australian Health Promotion Strategic Framework 2012–2016
ICF	World Health Organization’s International Classification of Functioning, Disability and Health
NHMRC	National Health and Medical Research Council
NSW	New South Wales
OT	Occupational therapy/Occupational therapist

PAL	Physical activity levels
PEOP	Person-Environment-Occupation-Performance Model (Christiansen & Baum, 1991)
URL	Uniform Resource Locator
WA	Western Australia
WACHS	Western Australian Country Health Service
WA Health	Western Australian Department of Health
UK	United Kingdom
USA	United States of America

Definitions

Capacity for health promotion	“Having the knowledge, skills, commitment, and resources at the individual and organizational levels and in the wider environment to conduct effective health promotion.”(Prairie Region Health Promotion Research Centre, 2004, p. 1)
Community level	In this study, activities provided at the “community level” refers to interventions aimed at all children in a community setting, such as a school.
Health literacy	“Represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health.” (World Health Organization, 1998, p. 10)
Health promotion	The “process of enabling people to increase control over, and to improve, their health.” (World Health Organization, 1998, p. 1).
Individual children	In this study, “individual children” refers to children who were individually referred to a health service.
Individual level	In this study, activities provided at the “individual level” refers to interventions aimed at the specific needs of a child who was referred for health services.
Occupation	Refers to people’s everyday activities.
Occupational therapy	“Occupational therapy is the art and science of enabling engagement in everyday living, through occupation; of enabling people to perform the occupations that foster health and well-being; and of enabling a just and inclusive society so that all people may participate to their potential in the daily occupations of life” (Townsend & Polatajko, 2013, p. 380).

Physical activity	Any bodily movement produced by skeletal muscles that requires energy expenditure (World Health Organization, 2010, p. 53)
Physical activity levels (PAL)	In this study, “physical activity levels” (PAL) refers to participating in physical activity and limiting use of electronic media for entertainment on a daily basis, as recommended by the Australian Physical Activity and Sedentary Behaviour Guidelines (Department of Health, 2014).
Physical inactivity	An absence of physical activity or exercise (World Health Organization, 2010, p. 53).
Preventative approach	An approach to health services that emphasises disease prevention which “covers measures not only to prevent the occurrence of disease, such as risk factor reduction, but also to arrest its progress and reduce its consequences once established” (World Health Organization, 1998, p. 4).
Primary prevention	Activity that is “directed towards preventing the initial occurrence of a disorder” (World Health Organization, 1998, p. 4).
Secondary and tertiary prevention	Activity that “seeks to arrest or retard existing disease and its effects through early detection and appropriate treatment; or to reduce the occurrence of relapses and the establishment of chronic conditions through, for example, effective rehabilitation” (World Health Organization, 1998, p. 4).
Reorientation of health services	One of five priority action areas outlined by the World Health Organisation’s Ottawa Charter. It involves a shift in emphasis from hospital-based clinical and curative health services to more health promoting, community-based services that encourage consumer participation (Baum, 2002).

Introduction

1.1 Introduction to the study

This study investigates paediatric occupational therapists' capacity and involvement in promoting the physical activity levels (PAL) of Western Australian children. This first chapter provides a background to the study, commencing with evidence on the importance of physical activity to children's health, and guidelines for children's levels of physical activity and limits related to sedentary behaviour. A description of context, including the current state of Western Australian children's PAL is reviewed along with an overview of the relevant Western Australian health promotion priorities and strategies. A synopsis of occupational therapy's role in health promotion is also provided. The aims and objectives of the study are then detailed along with its significance. Finally, the structure of the thesis is outlined.

1.2 Physical activity for children's health

There is significant evidence on the benefits of heightened PAL to children's health and wellbeing, both nationally and internationally (Okely et al., 2012; World Health Organization, 2010). In childhood, physical activity is vital to enable motor and cognitive development (Dwyer, Baur, Higgs, & Hardy, 2009; Salmon et al., 2014). Moreover, physical activity in children is associated with positive physical health measures, including bone formation which is crucial in adolescents, adiposity and a reduction in cardiovascular risk factors which may yield long term health benefits (Carter & Micheli, 2012; Salmon et al., 2014). Scientific evidence confirms that children and youth who are physically active have greater cardiorespiratory fitness and musculoskeletal health than inactive peers, with resultant benefits including reduced risk of cardiovascular and metabolic disease as well as reduced symptoms of anxiety and depression (World Health Organization, 2010). In addition to positive physical and psychosocial health, there is evidence of a positive relationship between physical activity and positive academic performance (Salmon et al., 2014).

Of great concern to public health is a worldwide trend toward greater levels of physical inactivity amongst all ages, which is a leading risk factor for mortality and is responsible for more deaths than obesity (World Health Organization, 2010). While play is particularly important to children, the nature of children's play has become more sedentary, and this has

been associated with poorer health outcomes (Dwyer et al., 2009). Children with disabilities are particularly at risk as evidence shows they participate in fewer active recreational activities than children without disabilities (Law, 2002). Moreover, children with developmental disabilities have been found to become overweight at a much greater rate than their peers (Pizzi et al., 2014).

Scientific evidence supports the view that a lifestyle incorporating high levels of physical activity, commenced in childhood and maintained into adulthood, reduces the risks of morbidity and mortality from non-communicable disease (World Health Organization, 2010). Therefore, developing positive habits in childhood is integral to maintaining regular physical activity into adulthood and preventing the decline in physical activity that contributes to chronic health issues (Dwyer et al., 2009; Scaffa, Reitz, & Pizzi, 2010). To reduce the health risks associated with physical inactivity, advice on the levels of activity needed for children at different ages are outlined in Australia's Physical Activity and Sedentary Behaviour Guidelines (Department of Health, 2014). Evidence-based national guidelines provide an important foundation for health promotion initiatives to increase the PAL of children (World Health Organization, 2010). Australian guidelines are based upon an extensive systematic review of high level evidence, revealing the impact on health outcomes of physical inactivity and sedentary behaviour amongst children aged between 5 and 17 years (Okely et al., 2012). The evidence-based guidelines thus identify a minimum amount of physical activity and maximum amount of sedentary behaviour required for children's health and wellbeing, including the prevention of chronic disease and obesity (Okely et al., 2012). The guidelines relate to children's developmental needs at different ages; for children aged between 5 and 17 years, participating in at least one hour of moderate to vigorous intensity physical activity every day and limiting use of electronic media for entertainment to no more than two hours a day is recommended (Department of Health, 2014). National guidelines are for all children irrespective of their gender, culture or ability (Department of Health, 2014), and thus children with disabilities are also encouraged to meet the guidelines. However, they should be supported by a health care provider to determine any modifications required given their disability (World Health Organization, 2010).

1.3 The physical activity levels (PAL) of Western Australian children

The most significant lifestyle risk factors for chronic disease amongst Western Australian children aged 5-15 years are obesity, poor nutrition from inadequate vegetable consumption, and physical inactivity (Department of Health Western Australia, 2012). Physical inactivity is strongly associated with the increase in obesity in Western Australian children, and is a major contributor to the growth of chronic diseases in the community (Children's Physical Activity Coalition, 2008). Obesity is now the largest contributor to morbidity and mortality in Western Australia (WA), to such an extent that without appropriate intervention, the life expectancy of Western Australians could decline (Department of Health Western Australia, 2012).

Data from the Australian Health Survey 2011-12 revealed that overall very few children in WA met the Australian guidelines for physical activity and screen time limits, with only 10% of girls and 12% of boys aged 2-17 years meeting both guidelines each day of the week (Australian Bureau of Statistics, 2013). Research also indicates that physical activity decreases with age (Salmon et al., 2014), and sedentary behaviour increases as Western Australian children move into adolescence (Martin et al., 2008). Recent research data from 2015 in WA revealed that only 38% of children aged between 5 to 15 years met the age-specific physical activity guideline for time spent doing physical activity every day of the week and worryingly, this is the lowest proportion on record (Tomlin, Joyce, & Radomiljac, 2016). With regard to guidelines for time spent using electronic media for leisure, 76% of 5 to 15 year old children and 65% of children under 2 met their respective guidelines; however, only 32% of children aged between 2 and 5 met their guidelines (Tomlin et al., 2016).

With regard to the PAL amongst children and adolescents with a disability in the Western Australian capital, Perth, Packer et al's (2006) research revealed that they participated in even less physical activity than their peers who did not have a disability (Packer, Briffa, Downs, Ciccarelli, & Passmore, 2006). Their research revealed that those with a disability participated in a narrower range of activities and fewer community groups, while spending more time using electronic media (Packer et al., 2006). Indeed, the risk of contracting chronic disease, which has a substantial impact on health, economic and social wellbeing, is generally greater amongst disadvantaged populations in WA, including people with a disability or mental health illness (Department of Health Western Australia, 2012).

1.4 Health promotion priorities and strategies in Western Australia

In recognition of the need to improve health by addressing lifestyle risk factors such as physical inactivity, the Western Australian Government developed the Western Australian Health Promotion Strategic Framework 2012–2016 (HPSF), which outlines priorities and strategies to prevent avoidable chronic disease (Department of Health Western Australia, 2012). The priority areas addressed in the HPSF relate to healthy eating, maintaining a healthy weight, reducing smoking and alcohol use, creating safer communities and increasing PAL (Department of Health Western Australia, 2012). Increasing PAL is similarly a priority for health promotion nationally, with the authors of the 2016 Getting Australia's Health on Track report arguing "getting all children active is the first step towards a national physical activity strategy" (Lindberg et al., 2016, p. 14).

The HPSF is designed to act as a catalyst for concerted action and cooperation between individuals and organisations from within and outside the health promotion sector, including capacity building initiatives (Department of Health Western Australia, 2012). The Framework draws upon the World Health Organization's Ottawa Charter for Health Promotion which outlines five key action areas for health promotion: healthy public policy, the creation of supportive environments, strengthening community action, the development of personal skills, and reorientation of health services (World Health Organization, 1986). The HPSF endorses using a combination of health promotion interventions for promoting PAL which align with these action areas, such as "the creation of childcare and school environments that increase opportunities for active play" (Department of Health Western Australia, 2012, p. 45). Increasing the public's awareness of the need to increase children's PAL and reduce their sedentary behaviour is encouraged at the population level, as well as through practical information delivered in appropriate settings (Department of Health Western Australia, 2012). Targeted interventions that aim to increase caregivers' abilities to establish an active lifestyle for children, as well as programs to develop the knowledge and skill of people who are unlikely to participate in physical activity are likewise supported (Department of Health Western Australia, 2012).

As noted above, 1 of the 5 principal action areas for health promotion as outlined by the Ottawa Charter is reorientation of health services (World Health Organization, 1986). This involves a shift in emphasis from hospital-based clinical and curative health services to more

health promoting, community-based services that encourage consumer participation (Baum, 2002). Similarly, the Western Australian Government's WA Health Strategic Intent 2015 – 2020 (Department of Health Western Australia, 2015) prioritises reducing the burden of chronic disease by supporting healthier lifestyles, as well as the provision of prevention and community care services that focus on promoting healthy behaviours. The Department of Health also identified the importance of developing partnerships between WA Health and other government, non-government and private sector organisations to promote the health of all Western Australians (2015).

1.5 Occupational therapists' role in health promotion

Much of the international research into reorientation of health services has focussed upon general practitioners and nurses; however, some researchers and occupational therapy associations are encouraging occupational therapists to become proactive in health promotion in line with the principles outlined in the Ottawa Charter for Health Promotion (Scriven & Atwal, 2004; Tucker, Vanderloo, Irwin, Mandich, & Bossers, 2014). It is argued that occupational therapists are ideally placed to incorporate health promotion into their services, drawing upon their skills in promoting health by supporting people to participate in a balanced pattern of meaningful occupations (Baxter & Porter-Armstrong, 2012; Holmberg & Ringsberg, 2014; Scaffa, Van Slyke, & Brownson, 2008). Indeed, the domain and process of occupational therapy is based around the view that health and well-being is the outcome of actively engaging in occupation (American Occupational Therapy Association, 2014). The word "occupation" aligns with the World Health Organization's International Classification of Functioning, Disability and Health (ICF) term "participation" (Ziviani, Desha, Poulsen, & Whiteford, 2010), which refers to "involvement in a life situation" (World Health Organization, 2002, p. 10). Occupational therapists view participation in meaningful occupation as a necessary right and determinant of health due to its influence on health and development across the lifespan, as noted by Gupta et al. (2011, p. S65):

Occupational therapy is based on the belief that occupations may be used for health promotion and wellness, remediation or restoration, health maintenance, disease and injury prevention, and compensation/ adaptation. The use of occupation to promote

individual, community, and population health is the core of occupational therapy practice, education, research, and advocacy.

Thus it is argued that occupational therapists may make an important contribution to the health of individuals and communities through their unique occupational perspective of health promotion (Moll, Gewurtz, Krupa, & Law, 2013).

Occupational balance, considered integral to a healthy lifestyle, refers to patterns of occupational engagement or habits that incorporate a balance between work, rest and play (Townsend & Polatajko, 2013). Occupational therapists view a lack of occupational balance as a risk factor for health problems (Scaffa et al., 2008), and hold a belief in the need for occupational balance to promote health (Flannery & Barry, 2003). They view engagement in occupation as a result of a transactive relationship between individuals or communities, their daily occupations, as well as the environment and context (American Occupational Therapy Association, 2015). Tucker et al. (2014) highlighted the ease with which these core constructs of occupational therapy can be integrated with the Ottawa Charter for Health Promotion's health promotion action areas, to enhance the health and well-being of the individuals and communities with whom occupational therapists work. In addition, it is suggested that by drawing upon the five action areas of the Ottawa Charter, occupational therapists will broaden their scope beyond the development of their clients' personal skills to more broadly promote their clients' health (Tucker et al., 2014). To bring an easily understood occupational perspective to health promotion, Moll et al. (2014) have developed a framework that focuses on people's experience of what they do every day. It provides an understanding that these experiences, along with patterns of engagement, affect health outcomes and are impacted upon by both personal and social factors (Moll et al., 2014).

Despite the support in the literature for occupational therapists' involvement in health promotion, there is a paucity of research in Australia regarding occupational therapists' involvement in, and capacity for, implementing health promotion interventions. In particular, while there are recommendations for occupational therapists to increase the PAL of children, the extent to which these recommendations are being enacted is unknown. The next chapter will therefore review existing national and international literature regarding the role of occupational therapists in promoting children's PAL, as well as their involvement in, and capacity to implement, health promotion interventions.

1.6 Aims and objectives of the study

Overall, this study aimed to develop an understanding of paediatric occupational therapists' involvement in, and capacity for, implementing health promotion activities to increase the physical activity levels (PAL) of children aged 0-18 years in Western Australia (WA).

The specific objectives guiding this study were:

1. To explore paediatric occupational therapists' involvement in promoting the PAL of children in WA.
2. To investigate paediatric occupational therapists' capacity (knowledge, skill, commitment and access to resources) for promoting the PAL of children in WA.
3. To identify factors that paediatric occupational therapists perceive as enablers and/or barriers to their implementing health promotion activities to increase the PAL of children in WA.

The study therefore aimed to answer the following research questions:

1. What is the extent of paediatric occupational therapists' practice in promoting the PAL of children in WA?
 - a. What proportion of paediatric occupational therapists currently promote children's PAL by engaging in health promotion activities at the individual and/or community level in WA?
 - b. What proportion of children are supported to increase their PAL by their current paediatric occupational therapist in WA?
 - c. What health promotion activities, at the individual and community level, do paediatric occupational therapists currently engage in to increase children's PAL in WA?
2. To what extent do paediatric occupational therapists consider that they have the capacity to promote the PAL of children in WA?
 - a. How knowledgeable do paediatric occupational therapists consider themselves to be in promoting the PAL of children in WA?
 - b. How skilled do paediatric occupational therapists consider themselves to be in promoting the PAL of children in WA?

- c. How committed are paediatric occupational therapists to promoting the PAL of children in WA?
 - d. How satisfied are paediatric occupational therapists with their access to resources for promoting the PAL of children in WA?
3. What factors do paediatric occupational therapists perceive as enablers to their implementing health promotion activities to increase the PAL of children in WA?
 4. What factors do paediatric occupational therapists perceive as barriers to their implementing health promotion activities to increase the PAL of children in WA?

1.7 Significance of the study

Promoting the PAL of children is a priority area for health in WA, and there is support in the literature for it to be incorporated into occupational therapists' practice. However, there is a dearth of research regarding occupational therapists' involvement in and capacity for delivering health promotion interventions, particularly with relation to increasing the PAL of children. Consequently, this study aimed to provide much needed foundation information to occupational therapy professional associations and universities in WA and beyond, to better inform both occupational therapy practice and education. In addition, engaging paediatric occupational therapists in this study was expected to raise their awareness of the importance of promoting the PAL of children. This study aimed to provide a greater understanding of clinician's views regarding health promotion for the benefit of the broader allied health community, and enable health services management and health promotion practitioners in the Western Australian Department of Health to make informed decisions regarding building the health promotion capacity of the workforce.

1.8 Overview of the thesis

This thesis has five chapters, of which Chapter 1 has covered the background and context of the study as well as the objectives and significance. Chapter 2 provides a literature review regarding occupational therapists' involvement in and capacity to deliver health promotion initiatives, particularly with relation to increasing children's PAL. Chapter 3 provides a description of the methodology used and Chapter 4 presents the results. Chapter 5 includes

a discussion of the research findings along with their significance and provides recommendations. Chapter 5 also includes limitations of the study and provides a conclusion to this thesis.

Chapter 2: Literature Review

2.1 Introduction

Chapter 2 details a review of the literature regarding occupational therapists' involvement in and capacity to deliver health promotion initiatives, with particular reference to increasing children's physical activity levels (PAL). The chapter commences with a brief overview of occupational therapy practice with regard to children in Australia, followed by an exploration of recommendations for their role in increasing children's PAL. Existing evidence regarding occupational therapy practice in health promotion is then reviewed, and the chapter concludes by examining the literature regarding occupational therapists' capacity for health promotion, in relation to their commitment, knowledge and skill, and access to resources.

2.2 Overview of occupational therapy practice in paediatrics in Australia

Studies in Australia of paediatric occupational therapists reveal they commonly work with children of all ages from 0 to 18 years (Lyons, Brown, Tseng, Casey, & McDonald, 2011; Rodger, Brown, & Brown, 2005). Studies also reveal that Australian paediatric occupational therapists work with children with a wide variety of medical conditions and disabilities, including neurodevelopmental, learning and attentional disorders (Baker, Galvin, Vale, & Lindner, 2012; Ziviani, Poulsen, Kotaniemi, & Law, 2014). Paediatric occupational therapists assist children to overcome limitations caused by such conditions, to promote their participation in daily occupations including self-care, school activities and play (Occupational Therapy Australia, 2011). They achieve this by optimising the "fit" between the child and their environment, drawing upon their expertise in helping children with disabilities learn skills, as well as changing or modifying factors in the environment or occupation (Occupational Therapy Australia, 2011). Best practice guidelines for occupational therapists working with children in the community include providing services guided by family priorities and within children's daily routines (Dunn, 2011). This is consistent with a family-centred approach, employed within many Australian paediatric health services, which involves collaboration between families and therapists to develop goals, plan interventions and evaluate progress (Hanna & Rodger, 2002).

Paediatric occupational therapists draw upon occupational therapy theories for the core constructs of practice, as well as conceptual models of practice to plan for evidence-based interventions (Dunn, 2011). A profile of paediatric occupational therapy practice in Australia by Rodger et al. (2005), revealed Australian paediatric occupational therapists drew upon clinically relevant theories, most frequently relating to sensory processing and motor-based practice models (Neurodevelopmental treatment), in addition to occupation-based theories. However, despite being guided by occupation-based theory, Australian paediatric occupational therapists focussed more on body structures and function than occupation or participation during assessment and intervention (Rodger et al., 2005). For example, they frequently used the Bruininks-Oseretsky Test of Motor Proficiency (Bruininks, 1978), the Developmental Test of Visual Motor Integration (Beery & Buktenica, 1997) and the Sensory Profile (Dunn, 1999) to assess children's motor skill, visual perceptual skill and sensory processing, respectively (Rodger et al., 2005). Paediatric occupational therapists use assessments to gather data to develop a comprehensive understanding of a child's strengths and needs (American Occupational Therapy Association, 2014; Dunn, 2011). Following assessment, common intervention strategies used by Australian occupational therapists for children with a range of diagnoses were found to include parent education, management of activities of daily living and sensory integration/sensory processing (Rodger et al., 2005).

2.3 Recommended role for occupational therapists in the promotion of children's physical activity levels (PAL)

Occupational therapists are encouraged to support children's engagement in occupation to promote their physical and mental health in the short term, as well as facilitating the development of lifelong healthy lifestyles (Pizzi, 2013). This unique occupational perspective involves taking a broad view of children's need to actively engage in their world, and offers a greater understanding of the multitude of factors contributing to health and wellbeing than a focus on exercise and diet alone (Moll et al., 2014). In other words, supporting children to become involved in meaningful activity, which engages mind body and spirit, inspires the development of healthy habits, routines and roles that empower children in a holistic way to develop healthy lifestyles (Pizzi, 2013). It is important, therefore, that occupational therapists increase awareness amongst both individuals and communities of the health benefits of

actively engaging in occupation, as well as the risks of some patterns of behaviour (Moll et al., 2013).

When assessing patterns of engagement in daily activities, physical activity is an area of occupational performance that occupational therapists should consider (Poulsen & Ziviani, 2004). In particular, paediatric occupational therapists are encouraged to extend their practice to include assessing children's habitual level of physical activity and sedentary behaviour (Dwyer et al., 2009; Persch, Lamb, Metzler, & Fristad, 2015). In order to implement appropriate preventative strategies, occupational therapists need to be cognisant of the conditions placing children at risk of limited participation in physical activity and obesity, as well as the associated physical, emotional and social challenges they are likely to experience (Pizzi et al., 2014). In addition, occupational therapists are encouraged to determine how physical activity occurs and could be enhanced within children's daily occupations, such as at home, school and during travel, to develop sustainable health promotion interventions (Pont, Ziviani, Wadley, & Abbott, 2011; Ziviani et al., 2010). Indeed, taking a broad perspective of the complexities impacting upon children's engagement in physical activity is supported by occupational therapy philosophy (Poulsen & Ziviani, 2004). Occupational therapy researchers have identified a range of factors influencing adolescents' participation in physical activity, including physical, psychological, emotional, social and physical environmental determinants (Ketteridge & Boshoff, 2008). Similarly, the importance of the environment in shaping patterns of physical activity in childhood is acknowledged within the Western Australian Health Promotion Strategic Framework 2012–2016 (HPSF) (Department of Health Western Australia, 2012).

Supporting children's right to participate in healthy activities and environments is an important role for occupational therapists (Rodger, 2010). In particular, in communities where the environment places children at high risk of adopting unhealthy lifestyles, the expertise of occupational therapists is required to increase children's activity levels (Cahill & Suarez-Balcazar, 2009). For example, occupational therapists should advocate for children's access to physical activity infrastructure with urban planners, as there may be a limited range of opportunities in low-socioeconomic areas (Ziviani et al., 2008). Furthermore, occupational therapy practice should expand into community level initiatives, such as providing information about children's patterns of engagement and supporting policies and

preventative health programs that encourage physically active lifestyles for children (Poulsen & Ziviani, 2004). Healthy behaviours, such as limiting screen time and using active modes of transport, can then be embedded into a child's daily routine (Ziviani et al., 2010). In addition, occupational therapists should collaborate with other members of the community to provide interventions addressing family habits as well as school and community supports, to encourage children to establish healthy patterns of behaviour and uphold their right to participate in active lifestyles (Cahill & Suarez-Balcazar, 2009). The EACH-Child model (Ziviani et al., 2009) supports occupational therapists to undertake a collaborative, community and occupation-based approach to promoting children's engagement in physical activity by optimising the fit between children, their environment and occupations. Suggested interventions under the EACH-Child model include engaging children in motivating physical activity, enhancing participation through skill training and supporting inclusion in physical activities run by community organisations (Ziviani et al., 2009).

Occupational therapists also play an important role in promoting PAL within school settings. For example, occupational therapists can promote children's success in the school environment by drawing upon strategies consistent with the Ottawa Charter for Health Promotion strategies (World Health Organization, 1986), including advocating for the importance of occupational balance and assessing personal and environmental factors impacting upon participation (Maglio & McKinstry, 2008). Occupational therapists can also collaborate with schools to ensure children have access to a wide range of enjoyable physical activities during school breaks and after school (Pizzi et al., 2014). For example, Waite (2013) advocated for occupational therapists to promote play, including physical activity, amongst all children during school breaks as it is a meaningful occupation for children with a myriad of health benefits. Similarly, Persch et al. (2015) contended that occupational therapists' expertise in activity analysis means they are ideally placed to implement evidence-based interventions in schools to promote healthy habits, including increased physical activity. These recommendations for occupational therapists to promote healthy environments for children, are consistent with evidence-based health promotion strategies such as building healthy active environments, promoting participation amongst all children in community-based physical activities, and encouraging physical activity breaks at schools (Active Healthy Kids Australia, 2014).

An inactive lifestyle may start at an early age; therefore, individual and community-level occupational therapy interventions should commence with preschool aged children to promote physical activity (Yu, Ziviani, & Haynes, 2011). Play, a central occupation for young children, contributes to children's physical activity, but may be impacted upon by sedentary activity options (Pizzi et al., 2014). Therefore, working with children, families and teachers to increase children's opportunities for physical activity through both unstructured play and structured classes can be an important part of the occupational therapists' role (Pizzi et al., 2014). Targeted interventions such as physical activities should be embedded in early intervention and preschool programs for groups at risk of limited participation in physical activity and obesity (Pizzi et al., 2014). A family-centred approach to intervention is also important as children benefit from a family environment that values and encourages physical activity (Yu et al., 2011). In this context, occupational therapists can support families and children to create a home environment that enables them to engage in physical activity together, and increases physical activity as part of their family routine (Pizzi et al., 2014). For example, following their successful implementation of a one-year occupation-focused intervention with parents of young children with obesity, Orban, Erlandsson, Edberg, Onnerfalt, and Thorngren-Jerneck (2014) advocated for occupational therapists to support parents to develop sustainable lifestyle change. They suggested supporting parents to develop an understanding of the impact of their routines on the wellbeing of all family members, and to identify opportunities and resources for increased involvement in their children's daily occupations (Orban et al., 2014).

Occupational therapists are also well placed in their traditional role of working with individuals within health services to incorporate many evidence-based health promotion strategies (Reynolds, 2001). For example, interventions to increase physical activity that are suitable for occupational therapists to incorporate into their practice, include "educational interventions, exploring barriers to physical activity, promoting self-efficacy for exercise, maximising rewards, encouraging goal setting, enhancing resistance to relapse, building social support and providing reminders or cues to action" (Reynolds, 2001, p. 330). Explicit goal-setting is also a recommended strategy to effectively promote physical activity with individual children participating in occupational therapy or as part of a health promotion group program (Lau, Stevens, & Jia, 2013). It is recommended that occupational therapists assist children

they work with to meet physical activity guidelines by supporting age appropriate play development, and delivering family education and motor development intervention programs (Dwyer et al., 2009). Furthermore, activities in children's natural environments that are often used by occupational therapists to target traditional goals in the areas of motor coordination, attention and self-regulation, can be leveraged to promote children's knowledge and skills necessary for healthy lifestyles (Lau et al., 2013). These suggested strategies which can be incorporated into occupational therapy with children, are consistent with evidence-based strategies to increase children's PAL. For example, Active Healthy Kids Australia (2014) recommend evidenced based strategies such as developing children's movement skills; encouraging opportunities for outdoor play; encouraging families to replace sedentary activities with physical activities; and education regarding physical activity guidelines.

A key strategy to develop children's motivation and self-efficacy for behavioural change is for occupational therapists to promote children's inclusion in sociable, achievable and enjoyable physical activities (Ziviani et al., 2010). When working with adolescents, occupational therapists should provide opportunities to participate in social, fun, physical activities within a supportive environment (Ketteridge & Boshoff, 2008). Ketteridge and Boshoff (2008) also recommend that to facilitate the development of skills, adolescents should be provided with a choice of activities that are of an appropriate level of challenge. Similarly, when working with children who are overweight, Pizzi et al. (2014) recommend that occupational therapists introduce a range of physical activities in order to identify those which the child finds enjoyable. In addition, occupational therapists should gradually grade the child's participation in physical activity and work to increase their access to regular physical activity (Pizzi et al., 2014).

Another important area that occupational therapists can play a pivotal role in, is by providing therapeutic and health promotion interventions to children and youth with special health care needs, along with their families, to support an active lifestyle (O'Neil, Fragala-Pinkham, Ideishi, & Ideishi, 2012). In particular, occupational therapists' interventions can offer a unique contribution to support children with obesity who are at an increased risk of injury due to impairments in motor adaptation (Gill, 2011). Gill (2011) recommends occupational therapists use meaningful physical activity to support children who are obese to adapt their

movements and improve their safe participation. In addition, Persch et al. (2015) advised occupational therapists to emphasise the benefits of physical activity to vulnerable children, and collaborate with individuals who are physically inactive and their families to promote physical activity routines. To promote participation in active recreation, in addition to implementing health promotion programs, therapists need to be aware of local resources and collaborate with existing programs to support participation of children with special health care needs (O'Neil et al., 2012). Strategies, such as using meaningful occupations, along with grading and structuring of activities, should be implemented at the individual level to improve personal competencies and to engage children and shape their movement patterns to meet environmental demands (Gill, 2011). Strategies should also be implemented at the community level to target community partnerships and programs, and at a policy level to advocate for policies which support community-based programs (O'Neil et al., 2012).

Typically, occupational therapists work with children who experience difficulty participating in their everyday occupations, including children with disabilities (Rodger, 2010). Children with physical disabilities have been found to be at high risk of obesity, physical inactivity and poor diet (McPherson, Keith, & Swift, 2014). For example, children and adolescents with a disability in Western Australia (WA) were found to participate in less physical activity and spend more time using electronic media than peers (Packer et al., 2006). Therefore, an important goal of occupational therapy intervention with children with motor impairments is to increase their participation in physical play and leisure, as it supports children's engagement with the world and has long term benefits for their health, development and social connectedness (Kolehmainen et al., 2015). Determining factors influencing the physical activity engagement patterns of children at risk of low levels of physical activity, such as children with motor impairments, is essential to determine appropriate interventions (Kolehmainen et al., 2015; Poulsen, Ziviani, & Cuskelly, 2007). Moreover, promoting suitable conditions and activities to promote active lifestyles before unhealthy habits develop, is crucial for such at-risk groups (Poulsen et al., 2007).

Factors influencing the capacity of children with a disability to participate in physical activity are complex, with Western Australian children reporting social barriers; parents noting the disability itself as a barrier; and researchers noting families were likely to be time poor as a result of assisting the child with their daily activities (Packer et al., 2006). One potential factor

impacting upon children's engagement in physical activity is motor skill proficiency, which has been found to be positively associated with PAL and inversely related to sedentary activity (Wrotniak, Epstein, Dorn, Jones, & Kondilis, 2006). Childhood proficiency in object control, such as ball skills, has also been found to be positively associated with the amount of time adolescents spent in moderate to vigorous physical activity (Barnett, van Beurden, Morgan, Brooks, & Beard, 2009). In addition, Kolehmainen et al. (2015) found children's participation in physical activity was related to the whole family's engagement in physical play and leisure, and thus recommended this be evaluated by paediatric occupational therapists during assessment.

The complexity of this issue has been acknowledged by the Western Australian HPSF, who have highlighted the need to target vulnerable groups, such as people with a disability, through specific strategies to promote physical activity (Department of Health Western Australia, 2012). Occupational therapists can play a critical role here, as they are skilled in providing individualised support to promote engagement in occupation amongst children with disabilities (Occupational Therapy Australia, 2011). There is emerging evidence that using motivational strategies, supporting child direction in activities, and gradually increasing the level of physical activity may be beneficial strategies for increasing PAL in children with physical difficulties (McPherson et al., 2014). When necessary, occupational therapists should develop an individualised, graded exercise program to meet the specific needs of a child with a disability (Persch et al., 2015). For example, some children with cerebral palsy may find that replacing sedentary behaviour with light physical activity has positive health benefits, without the challenges more intensive exercise may pose (Verschuren, Darrah, Novak, Ketelaar, & Wiart, 2014). Research with parents of children with Developmental Coordination Disorder (DCD) who were participating in an occupational therapy program, revealed that intervention which focussed upon the child's own functional goals for physical activity was effective in promoting greater participation, and also increased their children's social network and quality of life (Mandich, Polatajko, & Rodger, 2003). Occupational therapists also have a role in advocating more broadly for accessible activities and environments in order to address barriers for participation in physical activity (Scaffa et al., 2010), and therefore promote inclusion for children with a range of abilities.

A review of the literature has revealed many recommendations for the role occupational therapists should take in promoting children's PAL. Proposed interventions targeted towards young children through to adolescents, are consistent with many evidence-based health promotion interventions. In performing this role, occupational therapists are encouraged to take a broad perspective of the many factors impacting upon children's engagement in physical activity, to determine appropriate interventions. Community level interventions, outside the traditional role of an occupational therapist, are identified as particularly important in enabling all children to access activities and environments conducive to physical activity. In addition, intervention strategies that may be incorporated into more traditional occupational therapy sessions have been discussed. Health promotion interventions are suggested for occupational therapists working with children with special health care needs, including obesity. In addition, as in section 2.2, occupational therapists' expertise in working with children with disabilities to promote their participation in daily occupations is acknowledged, including supporting children's engagement in physical activity.

2.4 Health promotion practice of occupational therapists

No studies were found that revealed the extent of occupational therapists' involvement in implementing health promotion interventions to increase children's PAL. Case studies are contained within the international literature, however, revealing examples of occupational therapists' implementing health promotion interventions to increase the PAL of children at risk of obesity (O'Neil et al., 2012; Pizzi et al., 2014). Case studies of interventions for individuals at risk of obesity reveal the multi-faceted benefits of such intervention, including increased self-esteem and social participation, reductions in bullying, increases in self-help skills and motor development as well as establishing positive healthy routines for the whole family (Pizzi et al., 2014). With regard to community-based interventions for children at risk of obesity, one example is The Adapted Ice Skating Program which successfully promoted access to a local public facility to ice-skate and resulted in children continuing to skate in their community during winter, with some children being able to participate in non-adapted skating programs (O'Neil et al., 2012). Another example is The Kids Fitness Program, an afterschool program for overweight children that promoted physical activity, fitness, and healthy eating. This program resulted in children increasing in strength and aerobic fitness as

well as parents reporting an increased awareness and determination to eat more healthily and be more active (O'Neil et al., 2012). At the family level, Orban et al. (2014) implemented an occupation-focused group intervention for parents of children diagnosed with obesity which was effective in increasing the amount of time parents spent in physically active occupations with their children.

Successful pilot health promotion programs involving occupational therapy students and faculty staff have been reported in the USA that include promoting children's PAL (Cahill & Suarez-Balcazar, 2009; Kuo et al., 2013; Lau et al., 2013). For example, occupational therapy students successfully engaged the community in promoting healthy lifestyle initiatives to increase physical activity of school children, with outcomes including school children detailing how the information they learned would influence their family's habits and routines (Cahill & Suarez-Balcazar, 2009). Community-based obesity prevention programs were also implemented by occupational therapy students in low socio-economic areas which resulted in positive increases in self-efficacy and behavioural change of participants in relation to nutrition (Lau et al., 2013). Furthermore, multi-disciplinary team members found the contribution of occupational therapy students, who assisted in the delivery of interactive activities and behaviour intervention in a community-based paediatric weight management program, to be valuable due to their holistic and family-centred perspective (Kuo et al., 2013). An evidence-based intervention, skipping, has also been used by occupational therapists with children individually and in schools, through the Jump Kids Jump Movement program, as a therapeutic occupation-based activity that promotes a healthy lifestyle and reduces the risks of physical inactivity and obesity (Yamkovenko, 2009).

Typically, physical therapists and occupational therapists are recognised as health professionals with the expertise to address the needs of children with motor impairments and increase their participation in physical play and leisure (Kolehmainen et al., 2015). However, recent research by Kolehmainen et al. (2015) found therapists focussed on the child's motor impairment and basic motor activities in assessment, and rarely considered broader environmental factors that may impact upon children's participation in physical play and leisure. Nevertheless, examples of community-based occupational therapy interventions to promote physical activity amongst children with disabilities do exist, such as a physical fitness program for adolescents with Down Syndrome (Cahill, Clone, Wilson, & Moroni, 2015). This

program, which supported adolescents' development of healthy habits and routines, integrated the adolescents' interests, offered appropriate challenges and emphasised social interaction, and was implemented in collaboration with members of a community organisation (Cahill et al., 2015).

Whilst there is also a scarcity of literature revealing the extent of occupational therapists' practice in health promotion generally, there is emerging evidence that Australian occupational therapists are following recommendations in the literature to engage in health promotion. For example, a study of community-based occupational therapists in Victoria found that health promotion was recognised as an important aspect of their role, with 61% engaging in health promotion activities including promotion of physical activity, parenting skills and providing health information to adolescents (Quick, Harman, Morgan, & Stagnitti, 2010). In addition, research in regional New South Wales identified that 65% of local occupational therapists provided physical activity advice to adult clients who were obese, although 53% reported weight management to be outside their scope of practice (Lang et al., 2013). Research in Canada, however, has found occupational therapists working with older adults with disabilities rarely integrated health promotion strategies which addressed the determinants of health and promoted engagement in meaningful activity into their practice (Turcotte, Carrier, Desrosiers, & Levasseur, 2015). This suggests continuing uncertainty about the scope of occupational therapy practice in relation to integrating health promotion strategies.

When considering the type of health promotion activities occupational therapists engaged in, Flannery and Barry (2003) found Irish occupational therapists' activities most frequently related to the Ottawa Charter's action areas of creating supportive environments and developing personal skills. These action areas are similarly associated with activities Welsh occupational therapists working in geriatrics reported using, such as providing advice to clients about healthy lifestyles; discussing issues related to the client's health; promoting independence; and advising on maintaining a healthy environment (Seymour, 1999). Irish occupational therapists' health promotion activities were least often related to the Ottawa Charter's action areas of strengthening community action and building healthy public policy (Flannery & Barry, 2003). This finding is consistent with the assertion by Hildenbrand and Lamb (2013) that historically, occupational therapy has had little involvement and influence

in health and wellness policy development. In addition, focus groups with Norwegian occupational therapists revealed that occupational therapy practice focused more on individual, rather than community interventions (Holmberg & Ringsberg, 2014).

A recent literature review found that in the past, occupational therapy practice in health promotion has mostly occurred at the secondary and tertiary prevention level (Haracz, Ryan, Hazelton, & James, 2013). Certainly, this was evident in the health promotion activities undertaken by Welsh occupational therapists working in geriatrics in the late 1990s (Seymour, 1999). Secondary level interventions aim to prevent the development of chronic conditions with people at risk of ill health, and tertiary level interventions aim to optimise the living conditions of those already experiencing chronic disease (Haracz et al., 2013). More recently, case studies of Canadian occupational therapists working within Family Health Teams observed occupational therapy services often reflected secondary prevention and management of chronic health conditions as a means of preventing the need for tertiary health services (Donnelly, Brenchley, Crawford, & Letts, 2014).

Whilst secondary and tertiary health promotion interventions are important aspects of occupational therapy practice, recent literature has also suggested occupational therapists should be involved in primary prevention interventions with communities by influencing policy, urban design and supporting communities and school programs (Haracz et al., 2013). There is emerging evidence that this is happening, with over half of the health promotion activities conducted by community-based occupational therapists in Victoria being primary prevention activities (Quick et al., 2010). In addition, Wood, Fortune, and McKinstry (2013) found Victorian community health workers with an occupational therapy background used health promotion strategies including capacity building, community development and advocacy, with community groups and organisations. One particular case study revealed that a partnership between a community circus and occupational therapists resulted in children at a number of Victorian schools becoming more physically active through their access to a stimulating and engaging circus environment (Maglio & McKinstry, 2008).

In summary, there is emerging evidence of Australian occupational therapists' engagement in health promotion activities. International case studies also provide some evidence of occupational therapists implementing health promotion interventions to increase children's PAL, although typically these related to creating supportive environments and developing

personal skills, with less involvement in strengthening community action and building healthy public policy. Whilst traditionally occupational therapists have been more involved in tertiary or secondary prevention with individuals experiencing disability or disease, there is recent evidence in Australia of engagement at the primary prevention level with both individuals and communities.

2.5 Capacity for health promotion

The World Health Organisation's Commission on Social Determinants of Health identified developing a health-care system with a focus on equity, disease prevention, and health promotion as a key strategy to improve health equity (Marmot, Friel, Bell, Houweling, & Taylor, 2008). In order to achieve this their report highlights the need to build a health workforce with the capacity to address the social determinants of health (Marmot et al., 2008). Capacity for health promotion encompasses "having the knowledge, skills, commitment, and resources at the individual and organizational levels and in the wider environment to conduct effective health promotion" (Prairie Region Health Promotion Research Centre, 2004, p. 1). Globally, a lag in reorientating health services and mainstreaming health promotion has been observed to be impacting upon progress towards health equity (Ziglio, Simpson, & Tsouros, 2011). Likewise, in Australia, Baum (2011) observed that whilst the evidence regarding the need for action on the social determinants of health to improve population health is significant, it is less politically popular than a focus upon the behaviour of individuals which aligns with neo-liberal political philosophies drawing upon individualism.

Ziglio et al. (2011) recommended that a multi-disciplinary and whole of government approach be adopted so that all health workers are included in the health promotion agenda. Similarly, in Australia, researchers propose that reorientation of the health care system to meet the increasing burden of disease requires health workers to develop a focus on disease prevention and health promotion (Brooks, Robinson, & Ellis, 2008; Lilley & Stewart, 2009). Professional development to upskill workers in prevention and health promotion (Harris, Zwar, Walker, & Knight, 2011), as well as supportive organisational structures, are thus required to reorientate Australian health services (Lilley & Stewart, 2009). When considering the specific health profession of occupational therapy, Hildenbrand and Lamb (2013) argued

that the profession needs to consider its preparedness to actively engage in health promotion and to expand their approach and perceptions of what occupational therapy can offer. Specifically, the occupational therapy profession may need to change to a focus on disease prevention, including in their language, training and research, as well as increase their involvement in healthy public policy (Hildenbrand & Lamb, 2013). Furthermore, occupational therapists may need to consider new practice partners and different payment arrangements to enable more engagement in preventative initiatives as currently payment streams are typically tied up in traditional health structures (Hildenbrand & Lamb, 2013).

When considering the capacity of health professionals, such as occupational therapists, to reorientate their services to include health promotion, it is useful to draw upon the model of the elements of health promotion capacity, developed by McLean, Feather, and Butler-Jones (2005). Their model, based on five years of research, reveals factors influencing health promotion capacity to be the clinicians' commitment, skills, knowledge and access to resources; the organisation's culture, structures & resources; and finally community and policy environment (McLean et al., 2005). This is consistent with views by researchers in Australia who identify that in order to build health promotion capacity, health professionals need to be upskilled and workplaces need to provide supportive structures and policies (Judd & Keleher, 2013). Given the scope of this thesis, this literature review will focus upon the individual level, and consider evidence of occupational therapists' commitment, skill, knowledge and access to resources necessary for conducting effective health promotion activities.

2.5.1 Occupational therapists' commitment to health promotion

Health promotion, conceptualised as "enabling determinants of health and engagement in meaningful activities" (Turcotte et al., 2015, p. 59) is within the scope of occupational therapy practice; indeed, promoting participation in meaningful occupations is at the profession's core (Hildenbrand & Lamb, 2013). Furthermore, there is much compatibility between the values, philosophy and practice of health promotion, and occupational therapy, confirming occupational therapists are ideologically well suited to participate in health promotion (Flannery & Barry, 2003; Quick et al., 2010; Wood et al., 2013). For example, both disciplines adopt a holistic approach which recognises that an individual's whole life influences their

overall health (Holmberg & Ringsberg, 2014; Tucker et al., 2014). They focus on client-centredness and share the goal of improving people's ability to take control over decisions and behaviours to improve their health and well-being (Holmberg & Ringsberg, 2014; Tucker et al., 2014). In addition, both occupational therapy and health promotion emphasise the interaction between individuals or groups and the environment, recognising the need to address multiple environments such as school, home and community to support sustainable behaviour change (Haracz et al., 2013; Tucker et al., 2014). Similarly, there is much compatibility between the health promotion concept of health literacy and occupational therapy, with consideration being given to not only the personal skills required for health but also the context in which they are needed (Levasseur & Carrier, 2012).

These core principles are represented in occupational therapy models that guide clinician's practice, such as the Person-Environment-Occupation-Performance Model (PEOP) (Christiansen & Baum, 1991) and the Canadian Model of Occupational Performance and Engagement (CMOP-E) (Townsend & Polatajko, 2013). For example, both models address the "fit" between people and their environment in order to optimise occupational participation (Wong & Fisher, 2015). The CMOP-E (Townsend & Polatajko, 2013), in particular, takes a broad view of occupational therapy's role in promoting health and addressing social inequalities by assisting in the development of supportive environments (Wong & Fisher, 2015). Joosten (2015) noted that both models represent a shift from a bio-psychological, individualised view of health to a more socio-ecological focus, taking into consideration the complex and inter-related nature of determinants influencing health and participation opportunities for the whole population. In recognition of the role of occupational therapy in promoting health in populations, both models also provide guidelines for their use with communities (Wong & Fisher, 2015). The complementary nature of occupational therapy and health promotion is exemplified by the representation by Tucker et al. (2014, p. 186) of the interconnection between the strategies and action areas from the Ottawa Charter for Health Promotion (World Health Organization, 1986) and the core constructs of occupational therapy as identified within the CMOP-E (Townsend & Polatajko, 2013).

With regard to studies with occupational therapists, Australian researchers found health promotion was positively viewed and considered well suited to being incorporated into practice (Quick et al., 2010; Wood et al., 2013). Likewise, similar philosophies in health

promotion and occupational therapy, such as a belief in the importance of the environment, as well as the need for occupational balance to promote health, was found to enable Irish occupational therapists' involvement in health promotion (Flannery & Barry, 2003). In Sweden, occupational therapists were found to be confident in their competency for health promotion and interested in role development in this area (Johansson, Stenlund, Lundstrom, & Weinehall, 2010). In addition, Victorian community health workers with an occupational therapy background reported an important factor in their taking up a role in health promotion was their personal interest in the area (Wood et al., 2013).

Encouragement for occupational therapists' involvement in health promotion is provided by The American Occupational Therapy Association (AOTA); however, they do acknowledge the importance of keeping practice within the scope of occupational therapists' training and collaborating with other health promotion disciplines (Scaffa et al., 2008). Their statement on health promotion highlights three important roles for occupational therapists: "to promote healthy lifestyles; to emphasize occupation as an essential element of health promotion strategies; and to provide interventions, not only with individuals but also with populations" (Scaffa et al., 2008, p. 696). Similarly, Donnelly et al. (2014) found that the role of occupational therapists in primary health care was to support people to participate in meaningful daily occupations in the community. Extending this perspective in Australia, Wood et al. (2013) contended that occupational therapists should address more broadly factors impacting upon the ability of both individuals and communities to participate in meaningful occupations.

Research suggests one of the key challenges to occupational therapists adopting a more proactive health promotion role is a continuing focus at the individual level. For example, whilst focus groups with Norwegian occupational therapists revealed a salutogenic approach to promoting clients' health through participation in meaningful occupations, they nevertheless were found to have a narrow focus on individuals rather than systems or societies (Holmberg & Ringsberg, 2014). The researchers inferred that this limited perspective may relate to occupational therapists' view of client-centred practice which emphasises individuals. In addition, despite occupational therapy philosophy embracing a holistic perspective regarding the need for occupational balance to promote health (Flannery & Barry, 2003), maintaining a focus on promoting health through occupational engagement can be difficult due to factors such as workplace structures (Joosten, 2015). For example, it was found that Canadian

occupational therapists working with older adults with disabilities rarely promoted their engagement in meaningful activities such as leisure and community participation (Turcotte et al., 2015). Also impacting upon clinicians' commitment to health promotion, Australian occupational therapists have reported a culture of clinical work being perceived as more important than health promotion activity (Quick et al., 2010; Wood et al., 2013)

Although recommendations for occupational therapists' involvement in health promotion are found in the literature, the role of occupational therapists in health promotion in Australia is reasonably unrecognised, and a national position statement on health promotion and occupational therapy does not exist as it does in the UK, USA and Canada (Wood et al., 2013). This lack of understanding and support for the occupational therapy role in health promotion by the occupational therapy profession in Australia was reported to be a barrier to participating in health promotion by community health workers with an occupational therapy background (Wood et al., 2013). Likewise, a study of Irish occupational therapists found that over one-third believed other health professionals, as well as occupational therapists themselves, had a limited view of what they could offer with regard to health promotion (Flannery & Barry, 2003). In addition, research with Canadian community occupational therapists working with adults with disabilities found that misunderstanding of the occupational therapy role in health promotion may be a barrier to practice (Turcotte et al., 2015).

In the health arena, occupational therapists' role in prevention is rarely recognised, even though they could embrace a role in improving the health of populations by working with communities, organisations and individuals with chronic disease (Hildenbrand & Lamb, 2013). A lack of recognition of occupational therapists' health promotion competencies by the public, other health professionals and public officials was also identified by Norwegian occupational therapists (Holmberg & Ringsberg, 2014). They noted that greater public information regarding occupational therapy competencies would be useful, as would occupational therapists themselves being more vocal regarding their skills (Holmberg & Ringsberg, 2014). In public health, the health promoting nature of occupational engagement is likewise not well recognised, nor is occupational therapists' application of the term "occupation" (Moll et al., 2013). This may be due in part to challenges with communicating the complex multidimensional and multifaceted aspects of occupation, as well as the multiple

and varied outcomes of occupation (Moll et al., 2013). Hildenbrand and Lamb (2013) argued that to increase awareness of occupational therapy's role in prevention, occupational therapists need to make their contribution clearer, for example, by focussing more on the potential of individuals and communities, rather than deficits and limitations.

2.5.2 Occupational therapists' knowledge and skill for health promotion

The AOTA reported that occupational therapists have the basic knowledge required for health promotion; however, to ensure competency, practitioners must engage in continuous learning (Scaffa et al., 2008). Specifically, occupational therapists have expertise in promoting engagement in purposeful activity, such as habitual physical activity, to support physical and psychological wellbeing (Baxter & Porter-Armstrong, 2012). They are skilled in analysing the relationships between individuals or communities, their daily occupations as well as the environment in order to make recommendations to promote health (American Occupational Therapy Association, 2015). This understanding of how environmental factors facilitate or constrain healthy participation in occupation reflects a critical health promotion concern and enables occupational therapists to provide valuable input into policies and planning regarding development of the physical environment within communities (Parnell & Wilding, 2010). In addition, their understanding of the personal skills required for health as well as the context in which they are needed means they are well placed to promote clients' health literacy (Levasseur & Carrier, 2012). In this regard, occupational therapists have a unique understanding of the impact of health conditions on people's functioning, allowing them to make an important contribution to primary health care in this regard (Donnelly et al., 2014). For example, they bring specialised knowledge of the diverse needs of vulnerable members of the community such as those with disabilities and methods to promote inclusion (Parnell & Wilding, 2010).

Whilst Metzler, Hartmann, and Lowenthal (2012) agreed that occupational therapists had core competencies beneficial for health promotion, they asserted that their role in health promotion was supplementary, and further research and collaboration with other disciplines was required to realise their potential. Indeed, the literature review by Haracz et al. (2013) found that occupational therapists may require further education to enable a reorientation from their traditional focus on developing an individual's personal skills, to those addressing

healthy public policy, creating supportive environments and strengthening communities. Community health workers with an occupational therapy background in Victoria similarly reported a need to acquire further knowledge of macro-level initiatives, beyond the basic competency gained in an occupational therapy degree (Wood et al., 2013). Moreover, a view that occupational therapists should gain further health promotion training (Flannery & Barry, 2003) and establish core professional competencies before expanding into health promotion has been expressed (Wood et al., 2013). Such a perspective finds some support in the literature, with research involving Irish occupational therapists revealing that many had knowledge and skill in preventative strategies, although some had a lack of knowledge of health promotion (Flannery & Barry, 2003). Similarly, research in Victoria indicated that the majority of community-based occupational therapists reported having insufficient knowledge to undertake a health promotion role (Quick et al., 2010). Tucker et al. (2014) recommended that additional education, which complements occupation-based knowledge, would increase occupational therapists' ability to participate in health promotion and to overcome some of the challenges to practice. Specifically, Suarez-Balcazar, Friesema, and Lukyanova (2013) advocated for occupational therapy students to receive education in nutrition, physical activity and wellness so they are able to implement evidence-based strategies to prevent obesity.

Due to the high risk of obesity amongst culturally and linguistically diverse (CALD) groups, Suarez-Balcazar et al. (2013) also advocated for occupational therapy practitioners to develop cultural competency. Similarly, McLean et al. (2005) identified a range of more generic skills clinicians require to implement health promotion initiatives, including communicating with diverse audiences, working well with others and building community capacity. These are consistent with actions of advocate, coach, collaborate, consult, coordinate, educate and engage that occupational therapists use with individuals and populations to enable occupation, as identified in the Canadian Model of Client-Centred Enablement (CMCE) (Townsend & Polatajko, 2013). They are also consistent with actions of capacity building, community development and advocacy, employed by Victorian community health workers with an occupational therapy background (Wood et al., 2013). Significantly, these are also core skill areas for health promotion practitioners, as articulated through the Ottawa Charter for Health Promotion (World Health Organization, 1986).

In addition, McLean et al. (2005) highlighted the importance of using evidence to guide clinical practice in health promotion. Best practice guidelines for paediatric occupational therapists similarly include providing services based on the best available evidence and within occupational therapists' expertise, in addition to collaborating with families and health professional colleagues (Dunn, 2011). Paediatric occupational therapists in Australia have been found to hold a positive attitude towards evidence-based practice, including accessing new information to guide clinical practice (Lyons et al., 2011). However, whilst there is a growing body of evidence supporting the many health benefits of engaging in meaningful occupation, it is also very diverse, ranging from qualitative studies to population based research (Moll et al., 2013). To assist in advancing an occupational perspective to health promotion, Moll et al. (2013) recommended focussing research on population level issues that are of priority to public health.

Pizzi (2013) asserts that occupational therapists are well placed to develop evidence-based health promotion strategies for individuals and communities to reduce obesity. Indeed, evidence already exists to support occupational therapists' analysing and adapting children's routines to enhance their healthy habits (Persch et al., 2015). However, Haracz et al. (2013) found that whilst the literature supports occupational therapists' involvement in the prevention of obesity, evidence for practice is currently limited and further research is required. Specifically, Suarez-Balcazar et al. (2013) called for research as to the effectiveness of occupational therapy interventions with at risk groups, such as children from a CALD background, to support occupational therapists who are taking on a role in preventing childhood obesity. Similarly, Kolehmainen et al. (2015) noted a lack of evidence regarding the effectiveness of occupational therapy interventions for children with motor impairments to increase their engagement in physical activity. It is important to note, however, that the need for evidence regarding interventions to increase children's long term PAL is not limited to occupational therapy, but rather is recognised internationally as a top priority for research in the area of child and adolescent physical activity and sedentary behaviour (Gillis et al., 2013).

2.5.3 Occupational therapists' resources for health promotion

International research indicates that having access to sufficient resources, in particular time and funding, is a common impediment to occupational therapists' capacity to be involved in

health promotion (Flannery & Barry, 2003; Seymour, 1999). For example, the core constraint to the capacity of Swedish health professionals, including occupational therapists, to engage in health promotion was identified as a heavy workload (Johansson et al., 2010). A lack of time associated with funding restrictions, was also found to impact upon health care providers' priorities, with the immediate needs of patients for curative care services considered more urgent than the provision of preventative interventions (Johansson et al., 2010; Johansson, Weinehall, & Emmelin, 2009). Similarly, Canadian occupational therapists working with seniors with disabilities in the community, reported their capacity to implement health promotion interventions was curtailed by the high demand for their services which reduced the number of visits per client (Turcotte et al., 2015). Research on Canadian community-based services supports these findings, with a lack of funding for staffing resulting in an infrequent paediatric occupational therapy service which did not provide services to all children in the community (Cotelleso, Mazer, & Majnemer, 2009). In addition, when comparing infrequent paediatric occupational therapy services to those of regular frequency, it was found that interventions focussed more on compensation rather than prevention and were less likely to address multiple domains, including leisure and community integration (Cotelleso et al., 2009).

Likewise, in Australia, occupational therapists have reported a lack of resources for implementing health promotion activities, including limited funding, time and organisational support (Quick et al., 2010; Wood et al., 2013). Indeed, community-based occupational therapists in Victoria reported being so time-poor that they could not discuss health promotion strategies with individuals, nor become involved in health promotion initiatives (Quick et al., 2010).

Internationally, health professionals, including occupational therapists, perceived that their capacity to be involved in health promotion was limited by their workplace values, structures, and resources (Johansson et al., 2009). In addition, Welsh occupational therapists perceived that increased interest from managers and doctors would have enabled them to take on more of a health promotion role with the elderly (Seymour, 1999). However in Australia, some Victorian community health workers with an occupational therapy background employed to undertake a role in health promotion, have reported their workplace valued and supported macro-level health promotion work (Quick et al., 2010; Wood et al., 2013). In addition,

managers of some multi-disciplinary primary health care services in central Australia acknowledged the importance of health promotion, but also reported it to be undermined by pressure from centrally directed government agendas to meet the needs of people with health problems (Baum et al., 2014).

The medical model of service delivery, dominant within many health services, has been likewise identified as a factor impacting upon occupational therapists' health promotion practice (Flannery & Barry, 2003). Whilst occupational therapists have always recognised the need to promote health through participation in physical activity, their practice in this area diminished as the profession adapted to the medical model of service delivery in the early decades of the 20th century (Scaffa et al., 2010). Hildenbrand and Lamb (2013) argued that whilst occupational therapy gained professional legitimacy by delivering services for people with chronic illness and disability, the profession must now return to core occupational therapy principles in order to re-orient to a preventative focus.

In summary, occupational therapists' capacity to implement health promotion interventions relates to their having the necessary commitment, skill, knowledge and access to resources. Much of the available literature is focused on the compatibility between health promotion and occupational therapy core constructs and values which underpin occupational therapists' commitment to health promotion. The role of occupational therapists' in health promotion is outlined in the literature, although evidence suggests this is not well recognised within and outside of the profession. Other barriers to occupational therapists' commitment to health promotion include a focus on individuals rather than communities, along with competing clinical priorities.

Diverse opinions exist in the literature regarding occupational therapists having the requisite competency for health promotion. Skill and knowledge enabling occupational therapists' involvement in health promotion include their expertise in promoting engagement in meaningful activity; understanding the impact of the environment upon healthy participation; and knowledge of the needs of people with a disability. Further knowledge may be required regarding health promotion, in particular macro-level initiatives, as well as the development of an evidence base to guide clinical practice.

Most of the literature regarding access to resources reveals that this is a common barrier to occupational therapists' capacity to implement health promotion interventions. In particular,

a lack of resources, including limited funding and time has been identified by occupational therapists nationally and internationally. Whilst access to organisational support, including organisational values and structures is often reported to be a barrier, some evidence also exists of organisational support for occupational therapists to undertake a role in health promotion.

2.6 Conclusion

Evidence indicates substantial support for occupational therapists' involvement in health promotion, in particular to increase the PAL of children. However, this review has also revealed a dearth of research regarding occupational therapists' involvement in and capacity for implementing health promotion interventions. This study aimed to meet this gap in the literature by investigating occupational therapists' involvement in, and capacity for, implementing health promotion interventions. The study focussed on interventions to increase the PAL of Western Australian children, as this has been identified as a priority area for the promotion of health and prevention of chronic disease in WA.

Chapter 3: Methods

3.1 Introduction

This chapter initially details the objectives and scope of this study along with details on the research paradigm. This is followed by a description of the mixed methods used to answer the research questions. For each part of the study, a description is provided of the tools used and their development; the sample and recruitment procedures; protocol followed and data analysis techniques employed. Finally, the Human Research Ethics procedures that were followed are noted before concluding with a summary of the chapter.

3.2 Research aims, objectives and questions

As noted in section 1.6, the aim of this study was to develop an understanding of paediatric occupational therapists' involvement in, and capacity for, implementing health promotion activities to increase the physical activity levels (PAL) of children aged 0-18 years in Western Australia (WA).

The specific objectives guiding this study were:

1. To explore paediatric occupational therapists' involvement in promoting the PAL of children in WA.
2. To investigate paediatric occupational therapists' capacity (knowledge, skill, commitment and access to resources) for promoting the PAL of children in WA.
3. To identify factors that paediatric occupational therapists perceive as enablers or barriers to their implementing health promotion activities to increase the PAL of children in WA.

The study therefore aimed to answer the following research questions:

1. What is the extent of paediatric occupational therapists' practice in promoting the PAL of children in WA?
 - a. What proportion of paediatric occupational therapists currently promote children's PAL by engaging in health promotion activities at the individual and/or community level in WA?

- b. What proportion of children are supported to increase their PAL by their current paediatric occupational therapist in WA?
 - c. What health promotion activities, at the individual and community level, do paediatric occupational therapists currently engage in to increase children's PAL in WA?
- 2. To what extent do paediatric occupational therapists consider that they have the capacity to promote the PAL of children in WA?
 - a. How knowledgeable do paediatric occupational therapists consider themselves to be in promoting the PAL of children in WA?
 - b. How skilled do paediatric occupational therapists consider themselves to be in promoting the PAL of children in WA?
 - c. How committed are paediatric occupational therapists to promoting the PAL of children in WA?
 - d. How satisfied are paediatric occupational therapists with their access to resources for promoting the PAL of children in WA?
- 3.
 - a. What factors do paediatric occupational therapists perceive as enablers to their implementing health promotion activities to increase the PAL of children in WA?
 - b. What factors do paediatric occupational therapists perceive as barriers to their implementing health promotion activities to increase the PAL of children in WA?

3.3 Scope of the study

This study gathered information from paediatric occupational therapists in WA on the extent of their practice in promoting the PAL of children over the preceding month (July – August 2015). The study also assessed paediatric occupational therapists' perceptions of their capacity to implement such health promotion activities, as well as factors perceived as enablers and barriers to promoting children's PAL.

3.4 Research paradigm

To meet the study's aims and objectives and to best develop a comprehensive picture of paediatric occupational therapists' involvement in and capacity to promote the PAL of

children, a mixed methods approach was chosen. Particular benefits of this approach included enabling the different research questions to be answered using the most appropriate tools, and using the qualitative component to illustrate and verify quantitative findings (Doyle, Brady, & Byrne, 2009). Mixed methods research is underpinned by the philosophy of pragmatism which takes a practical approach to research to determine what tools are required to answer the research questions (Doyle et al., 2009). It is not driven by theory or data exclusively, but rather a process of abduction is used where the researcher converts observations into theories and then assesses them, moving between induction and deduction to explore the concept under study (Morgan, 2007). The pragmatic framework was therefore used throughout this study to guide the research methodology.

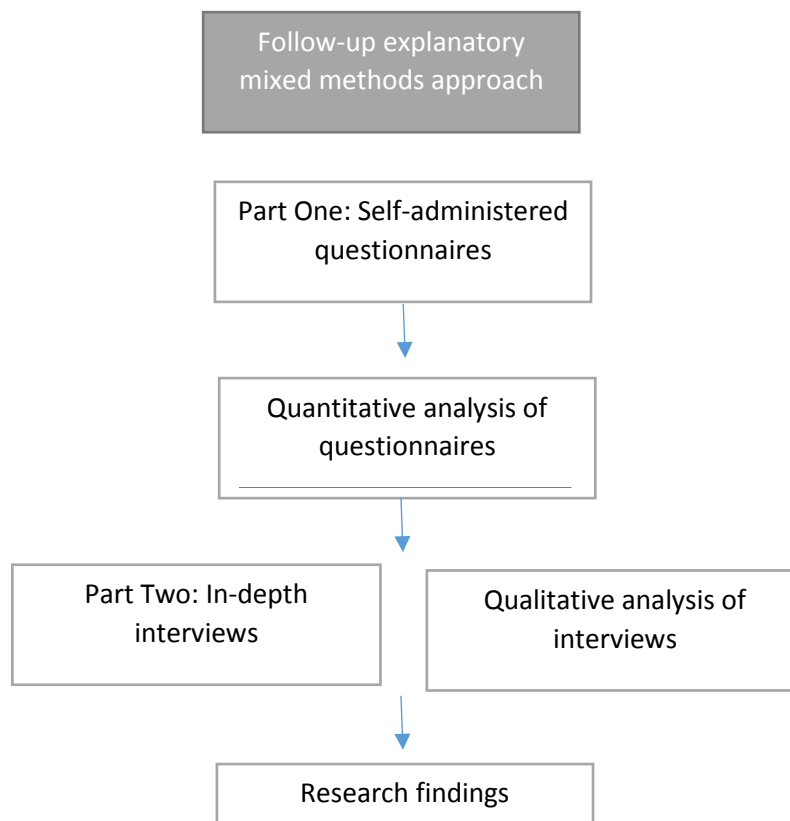
Furthermore, the research draws upon the theoretical framework regarding the nature of developing health promotion capacity, created by McLean et al. (2005) in the Building Health Promotion Capacity project. The focus was on examining and comparing the individual factors required to deliver health promotion initiatives, described in this model as knowledge, skill, commitment and access to resources (McLean et al., 2005).

In addition, the quantitative component, Part One, drew upon descriptive research methodology, as its main aim was to develop an accurate portrayal of this phenomenon about which little was known (viz. paediatric occupational therapists' involvement in and capacity for promoting children's PAL) (Ingham-Broomfield, 2014). The qualitative component, Part Two, drew upon a phenomenological approach, which is commonly used in qualitative health research to capture meanings and common features of an experience (Starks & Brown Trinidad, 2007), to elicit shared enablers and barriers to this phenomenon.

3.5 Research methods overview

With regard to the mixed methods research design, the follow-up explanatory design was employed (See Figure 3.1), where the qualitative phase of the study follows the quantitative phase (Doyle et al., 2009). The qualitative component, Part Two, was therefore designed to complement the quantitative component, Part One.

Figure 3.1. Overview of research approach employed by the study



Part One, a self-report questionnaire, was designed to elicit cross-sectional quantitative data, which when statistically analysed, described a snap shot in time of paediatric occupational therapists' involvement in and capacity for promoting the PAL of children in WA. Part Two, in-depth interviews, was designed to elicit more detailed descriptions of paediatric occupational therapists' experiences in promoting children's PAL, which when thematically analysed revealed common perceptions of enablers and barriers to their involvement in such health promotion activities.

The tools used in Parts One and Two are described in detail in sections 3.6 and 3.7 respectively.

3.6 Part One: Self-report questionnaire

The paucity of research in this area necessitated that a questionnaire be developed to meet the unique objectives of this study. Following is a description of the sample for Part One, a

description of the content and development of the questionnaire, its validity and the protocol for data collection.

3.6.1 Sample and sampling approach

To be eligible, participants had to be occupational therapists working to support children in WA at the time of data collection (August – September 2015), and registered with the Australia Health Practitioner Regulation Agency (AHPRA). The population size is estimated at 310, based upon the number of occupational therapists registered with AHPRA who were working as a clinician and chose paediatrics as their primary scope of practice on the 2014 AHPRA workforce survey (I. Titulaer, personal communication, March 02, 2016). In order to maximise contact with as many of this population as possible, support was sought from Developmental Occupational Therapy Western Australia (DOT (WA) Inc.), a professional association connecting many of the occupational therapists working with Western Australian children. DOT (WA) Inc. has close to 200 registered occupational therapists as members (T. Bushell, personal communication, May 05, 2015). Use of paediatric occupational therapy interest groups and listserves have been used to reach paediatric occupational therapists in previous Australian research, such as Ziviani et al. (2014) and Baker et al. (2012). The email coordinator of DOT (WA) Inc. acted as gatekeeper and sent an introductory email from the researcher to all members, with the information sheet and a link to the online questionnaire (see section 3.6.4 for further details). Snowballing was also used to reach paediatric occupational therapists who were not members of DOT(WA) Inc. by including a request in the introductory email for it to be forwarded to other paediatric occupational therapists working with children in WA. To maximise the response rate, a financial incentive was offered, with each participant eligible to enter a draw to win one of two \$100 vouchers.

A predetermined target number of 77 responses was identified for this research, as according to published sample size tables using Yamane's formula, this number would enable an estimation of a population proportion with specified precision of 10 percentage points with 95% confidence, given a population size of 325 (Israel, 2012). This target was considered achievable based upon the number of responses received for other questionnaires distributed online amongst networks of occupational therapists working with children in Australia. Baker et al. (2012) had 102 occupational therapists from Victoria participate in their

online questionnaire, whilst Ziviani et al. (2014) had 241 occupational therapists from Australia and New Zealand participate, of whom 32 were from WA. With regard to similar studies concerning occupational therapists' involvement in health promotion, Quick et al. (2010) received 72 responses from eligible participants in Victorian community health settings to their mail questionnaire.

3.6.2 Questionnaire content and development

The questionnaire collected cross-sectional data pertaining to all three research objectives. The self-report questionnaire collected demographic and practice data as well as capacity ratings and perceived barriers. See Appendix 1 for a list of questionnaire items and response options for each item.

Terminology

Important terminology was defined for participants, namely, 'physical activity levels', 'individual children' and 'all children in a community setting'. See Table 3.1 for detailed explanations of terminology.

Table 3.1. Definitions included in the self-report questionnaire

Term	Definition
Physical activity levels	In this survey the term "physical activity levels" refers to participating in physical activity and limiting use of electronic media for entertainment on a daily basis, as recommended by the Australian Physical Activity and Sedentary Behaviour Guidelines. (http://www.health.gov.au/internet/main/publishing.nsf/Content/healthpubhlthstrategphysactguidelines)
Individual children	In this survey, occupational therapy services for "individual children" means children individually referred to your organisation.
All children in a community setting	In this survey, occupational therapy services for "all children in a community setting" means children for whom individual referrals were not received, such as for all of the children in a school or playgroup or town.

Demographic data

Section 1 of the questionnaire collected demographic data of the children whom paediatric occupational therapists supported through their work, comprising their location, age range

and any areas of common functional difficulties. The list of functional difficulties drew upon the International Classification of Function (ICF) body functions (World Health Organization, 2002). Section 6, which collected demographic data relating to the participant, drew upon questions used in Quick et al. (2010) questionnaire which investigated occupational therapists' practice in implementing health promotion in Victoria. This section collected data on the participants' gender, age, year of qualifying as an occupational therapist, highest level of qualification, experience in paediatrics, registration status and membership of DOT(WA) Inc. It also collected demographic data regarding the participant's occupational therapy position, comprising of the type of work setting, type of organisation, therapist roles undertaken, involvement in a multi-disciplinary team and hours worked.

Practice data

Sections 2 and 3 of the questionnaire addressed research objective one, exploring paediatric occupational therapists' involvement in promoting the PAL of Western Australian children. To reduce memory distortion that impacts retrospective self-reports (Stone, Shiffman, & Atienza, 2007), participants were asked to report on their recent practice in the month prior to completing the questionnaire.

Section 2 collected data regarding participants' delivery of services to individual children, comprising the numbers, if any, of individual children served, and the percentage, if any, of individual children supported to increase their PAL. In addition, a checklist was utilised to determine the activities participants engaged in over the past month to promote the PAL of individual children. The checklist of activities was developed based on previous research by Dwyer et al. (2009); Haracz et al. (2013); Reynolds (2001); Scaffa et al. (2010); Ziviani et al. (2010), and allowed participants who had promoted the PAL of individual children to tick any number of health promotion activities, as well as note additional activities in which they engaged.

Section 3 collected data regarding participants' delivery of services to all children in a community setting, comprising the settings, if any, in which they supported all children and whether they supported them to increase their PAL. Similarly, a checklist of activities participants engaged in to support the PAL of all children in a community setting was developed based on previous research by Dwyer et al. (2009); Haracz et al. (2013); Reynolds (2001); Scaffa et al. (2010); Ziviani et al. (2010). This enabled participants who had promoted

the PAL of all children in a community setting to tick the relevant health promotion activities in which they engaged as well as note any additional activities.

Capacity ratings

Section 4 addressed research objective two, to investigate paediatric occupational therapists' capacity (knowledge, skill, commitment and access to resources) for promoting the PAL of Western Australian children. Participants were required to rate themselves against statements regarding knowledge, skill, commitment and resources. By indicating areas of relative strength and weakness, it was also intended that this section would contribute towards objective three, identifying factors that paediatric occupational therapists perceive as enablers or barriers to their implementing health promotion activities to increase the PAL of Western Australian children.

Section 4 was based upon the 'Individual Health Promotion Capacity Checklist', which was developed to assess health professionals' health promotion practices with regard to their knowledge, skill, commitment and access to resources necessary to support general population health promotion (Prairie Region Health Promotion Research Centre, 2004). The checklist items were modified to pertain specifically to the promotion of children's PAL at both the individual and community level. The checklist employed a 4 point Likert scale across all questions, ranging from 'strongly disagree', 'disagree', to 'agree' and 'strongly agree' to enable responses to be quantified, and a score determined for each factor to determine areas of relative strength and weakness (Prairie Region Health Promotion Research Centre, 2004).

The Individual Health Promotion Capacity Checklist is based upon the Building Health Promotion Capacity theoretical framework which was developed following five years of research with health practitioners in the Canadian district of Saskatchewan (McLean et al., 2005). Whilst developed in Canada, the checklists have been used internationally in Korea (Kim et al., 2009), and the model has informed research questionnaires into reorientation of health professionals' practice in Sweden (Johansson et al., 2010; Kardakis, Weinehall, Jerden, Nystrom, & Johansson, 2014). The checklists have been tested for face validity and acceptability by the authors, but due to the modifications made by the researcher, it was pilot tested with Western Australian occupational therapists as detailed in Section 3.6.3.

Barriers

Section 5 collected data on paediatric occupational therapists' perceptions of barriers to their involvement in the promotion of children's PAL. Participants selected from a list a maximum of four barriers they perceived as most significant in impeding their promotion of the PAL of children. They also had the option of noting their own barriers. The list of potential barriers to undertaking health promotion activities was gathered from questionnaires used with occupational therapists in Australia (Lang et al., 2013; Quick et al., 2010) and health professionals in Sweden (Johansson et al., 2010).

3.6.3 Validity and reliability of the self-report questionnaire

The questionnaire was built, distributed and data exported using Qualtrics software, version 2015. Each section of the questionnaire drew upon existing questionnaires as well as available literature to maximise content validity. The draft questionnaire was pilot tested by two qualified occupational therapists from Edith Cowan University (ECU) to ensure content validity and clarity, along with three paediatric occupational therapists from DOT (WA) Inc. to ensure clarity of content. They also provided the researcher with an estimate of the time required to complete the online questionnaire, that of ten minutes. Following pilot testing, definitions were inserted into the questionnaire for "individual children" and "all children in a community setting" as detailed in section 3.6.2, to ensure clarity of content.

Following collection of data, capacity ratings from section 4 were analysed using Cronbach's alpha to determine the internal consistency of items to gauge the reliability of the survey instrument (see section 4.7).

3.6.4 Protocol

After obtaining ethical approval from the Edith Cowan University Human Research Ethics Committee, an introductory letter was emailed to all members of DOT (WA) Inc. by the DOT(WA) Inc. email coordinator, see Appendix 2. Participants were assured that their responses would be confidential and would contribute to much needed research regarding occupational therapists' involvement in and views regarding promoting the PAL of children.

The email contained a URL link to an information sheet which provided more detail about the research, see Appendix 3 and section 3.8 for more detail. The email and the information sheet also contained the URL link to the questionnaire administered by Qualtrics.

When participants clicked on the link to the questionnaire they were once again provided with details regarding the purpose of the research, informed that submission of the survey indicated consent to their anonymous feedback being included in results, and provided with a definition of “physical activity levels” for the purposes of this research. The researcher’s introductory email was originally sent by the DOT(WA) Inc. email coordinator on the 15th August 2015, with a date for completing the questionnaire set as the 14th September 2015. An additional reminder email was similarly forwarded by the DOT(WA) Inc. email coordinator on the 1st of September to maximize the response rate.

3.6.5 Data analysis

De-identified data from the completed questionnaires were collated and exported to Excel using Qualtrics software, version 2015, for statistical analysis. Exploratory data analysis was expressed using descriptive statistics in terms of frequency distributions and measures of central tendency and variability as appropriate. Specifically, survey data were analysed as described below:

Demographic data

Nominal data regarding the participants and their occupational therapy position, and demographic data of the children served, were analysed using descriptive statistics, namely frequency and percentage of participants who chose each response. Ordinal data regarding participants’ age, year of qualifying, years of experience and hours worked as well as children’s age range, were analysed using descriptive statistics, specifying the response range, mean response and standard deviation.

Practice data

Nominal data regarding the participants working with individual children and all children in a community setting were analysed using descriptive statistics, namely frequency and proportion of participants who chose each response. Ordinal data regarding numbers of

children individually supported in the past month were analysed using descriptive statistics, specifying the response range, mean response and standard deviation.

The extent of paediatric occupational therapists' practice in promoting children's PAL was described by the frequency and proportion of participants who promoted the PAL of children through their work with individual children and likewise for those who worked with all children in a community setting. In addition, ordinal data regarding percentage of children individually supported in the past month to increase their PAL were analysed using descriptive statistics, specifying the response range, mean response, standard deviation and providing a total number of children supported. Descriptive statistics, specifically frequency and percentage of participants who chose each item, were used to describe participants' involvement in activities to promote the PAL of children. Any additional activities participants added were also collated.

Capacity ratings

The extent of participants' capacity to promote children's PAL was described by a rating (mean response and standard deviation) determined using the four point Likert scale for each statement. A score of 1 was allocated to 'strongly disagree', 2 for "disagree", 3 for "agree" and 4 for 'strongly agree'.

Five statements related to each factor of knowledge, skill and commitment, while six statements related to satisfaction with access to resources. Cronbach's alpha was used to determine the internal consistency of items to gauge the reliability of the survey instrument. Data were combined to determine ratings (mean response and standard deviation) of capacity in each factor (knowledge, skills, commitment and access to resources).

Any substantial differences in ratings for the items and factors overall were noted as potential enablers and barriers to implementing health promotion activities that could be further explored in Part Two of this study. As the purpose of this study is descriptive and not hypothesis based, tests of significance were not considered to be an appropriate data analysis tool.

Barriers

Descriptive statistics, specifically frequency and percentage of participants who chose each item, were used to describe participant's perceived barriers to their involvement in promoting children's PAL. Any additional barriers participants wrote were also collated.

Comparison of Part One responses per participants' involvement in promoting children's physical activity levels (PAL)

A comparison was made between questionnaire responses by participants who did promote the PAL of individual children and those who did not, as well as between participants who promoted PAL of all children in a community setting and those who did not. This comparison was made to identify substantial differences between the cohorts, regarding demographics, capacity ratings and reported barriers. These differences were noted as potential enablers or barriers to participating in such health promotion activities that could be further explored in Part Two of this study.

3.7 Part Two: In-depth interviews

In-depth interviews followed the questionnaire to further verify, illustrate and explore the quantitative results regarding paediatric occupational therapists' involvement in and capacity to implement interventions to promote children's PAL. In particular, the in-depth interviews were designed to meet objective three, that of identifying factors that paediatric occupational therapists perceive as enablers or barriers to promoting the PAL of Western Australian children. In-depth interviews are an appropriate means of eliciting descriptions of participants' experiences and their understanding of those experiences in a phenomenological approach (Starks & Brown Trinidad, 2007).

After analysing the data collected in Part One of this study, interview questions were refined so that emerging barriers and enablers for paediatric occupational therapists could be further explored and refined. Originally, focus group discussions were planned; however, participants representing a diverse range of characteristics were unavailable to attend at a common time, so consequently in-depth interviews were chosen as the preferred method to reach a diverse sample.

3.7.1 Participant recruitment

Participants from Part One, namely, occupational therapists who were registered with AHPRA and were working with children in Western Australia, were eligible to participate in Part Two. To maximise variation of experience, participants were chosen who had and had not promoted the PAL of individual children and all children in a community setting. In addition, to obtain a sample that could provide a broad range of experiences and views, participants were selected who worked in a range of work settings, government and non-government organisations, rural and metropolitan locations as well as working in both clinical and managerial roles. They were also chosen for diversity in demographics including a range of ages, years of experience and levels of qualification.

Requests for volunteers to participate in Part Two were included at the end of the questionnaire in Part One. To encourage participants to volunteer, a financial incentive of a \$50 gift voucher was offered to each participant. Of the participants who volunteered to participate in Part Two, subjects were chosen progressively, to maximise diversity of experience until data saturation was reached. Data saturation was reached when participants were referring to the same phenomena and no new themes were emerging. In addition, a diverse range of participants had completed the interviews, providing a broad cross section of experiences with regard to paediatric occupational therapy.

3.7.2 Protocol

Invitations were emailed to potential participants during October 2015, requesting their participation in an individual phone interview. The email contained a URL link to an information sheet which provided more detail about the study, see Appendix 4 and section 3.8 for more detail. Participants were requested to provide their contact number and preferred time for the researcher to call.

At the commencement of each phone interview the researcher requested and gained permission to audiotape the interview for the purposes of transcribing it at a later time. The length of each interview ranged from 8 to 40 minutes, with an average length of 20 minutes. As appropriate for a phenomenological approach, a semi-structured interview format was

utilised with the researcher using probing questions to encourage participants to elaborate on their descriptions as well as clarifying questions to check for meaning during the interviews (Starks & Brown Trinidad, 2007).

3.7.3 In-depth interview questions

Semi-structured interviews were used to explore participants' involvement in and views regarding promoting the PAL of children. Five key questions were used in each interview (see Appendix 5), with additional questions being used to further explore and clarify participants' experiences and views. Questions regarding potential enablers and barriers elicited from Part One were completed in parts so participants were not required to remember a long list of factors. The five questions were trialled on two paediatric occupational therapists to ensure they were easily understood.

The key questions for the in-depth interviews were:

1. What has helped (or would help) you to intervene to promote the physical activity levels of children?
2. Do any of the following enablers from the survey resonate with you: knowledge of appropriate strategies; confidence in your skills; ability to use evidence-based strategies; occupational therapy experience or study; ability to build the capacity of communities and having managerial and collegial support?
3. What has impeded you from intervening to promote the physical activity levels of children?
4. Do any of the following barriers from the survey resonate with you: having a heavy clinical workload; it not being a clinical priority; lack of funding and resources and lack of recognition of occupational therapy competency in this area?
5. How do you think we could encourage and support occupational therapists to be more active in intervening to promote children's physical activity levels?

3.7.4 Data analysis

Thematic analysis, involving identifying patterns or themes that are of importance to the phenomenon (Fereday & Muir-Cochrane, 2006), was undertaken following each in-depth

interview. In particular, thematic analysis was designed to meet objective three, that of identifying factors that paediatric occupational therapists perceive as enablers or barriers to their promoting the PAL of children in WA. Analytical methods chosen for completing thematic analysis included both a deductive priori template of codes and a data driven inductive approach as described by Fereday and Muir-Cochrane (2006). This is consistent with the pragmatic framework, where neither theory nor data exclusively drive research methodology to answer the research questions (Morgan, 2007). This approach enabled the Health Promotion Capacity theoretical framework developed by McLean et al. (2005) to be central to the process of deductive thematic analysis. The four broad categories of knowledge, skill, commitment and access to resources were used as a template for organising the data (Prairie Region Health Promotion Research Centre, 2004). Inductive coding ensured that the researcher was also responsive to new themes that emerged directly from the data (Fereday & Muir-Cochrane, 2006).

In-depth interviews were transcribed and all data comprehensively reviewed and thematically analysed with the support of NVivo data management software throughout the data collection process in Part Two (see Appendix 6 for full transcripts). Following listening to and transcribing the interviews, they were initially analysed by summarising the data, taking note of key points and potential themes in relation to enablers and barriers to participants' involvement in promoting the PAL of children. The researcher then applied the codes from the template, entered as nodes into Nvivo, to identify salient statements and descriptions. During the coding process, inductive codes were added as new themes emerged beyond the four individual factors. The researcher then examined the data identifying possible connections within and across the codes in order to develop code clusters and potential themes relating to enablers and barriers (Fereday & Muir-Cochrane, 2006). Areas of consensus and conflict were noted across all participants and between participants who had shared characteristics such as work setting and involvement in promoting children's PAL. As new transcripts were added, the assigned codes, code clusters and potential themes were constantly reviewed until data saturation was reached. Final themes describing code clusters that were consistent with the Health Promotion Capacity theoretical framework (McLean et al., 2005) were developed at the conclusion of this process. Within each theme, underpinning subthemes were identified that illustrate the breadth of meaning within the theme. See Table

3.2 for an example of the connection between the original data and subsequent coding and identification of themes.

Table 3.2 An example to illustrate the connections between data, theory-driven and data-driven codes and themes and sub-themes from the in-depth interviews

Participant Quote: *“If the parents do not consider it an area of concern, I probably wouldn’t go there. I know within child development services there is much discussion that access to services are finite to our clients and therapy is not going to be ongoing. So, if it is not a goal for the family as clinicians you may not have the time. You may have the eyes to see it but if it’s not a concern you are not going to go there.”*

Theory-driven codes (Individual factors)	Data-driven codes	Theme	Sub-theme
Commitment	Family values	Not a clinical priority	Family/parent priorities
Resources		Lack of resources	Finite resources Time and workload

3.8 Human research ethics

Ethical approval was obtained from the ECU Human Research Ethics Committee on the 20th July 2015, prior to data collection [Project number: 13155COMBS]. A risk assessment identified no likely physical, psychological, social, economic, or legal risks to participants. Participants were invited, but not coerced to contribute to this study. Accompanying the invitation to participate, they were provided with an information sheet for the respective parts of the study (see Appendix 3 & 4), which outlined the purpose and benefits of the study and what their contribution would involve. The information sheets also advised participants of their right to withdraw from the research without penalty and that information pertaining to participants would remain confidential at all times, including in any publications or reports originating from this research. At the commencement of the self-report questionnaire in Part One, participants were informed that submission of the survey indicated consent to their anonymous feedback being included in results and reporting. Likewise, at the commencement of each interview verbal consent was gained to record the interview and for it to be transcribed and data used in results and reporting. In addition to verbal consent,

consent from Part Two participants for the interviews was implied by their provision of contact information in the questionnaire as well as their email communication with the researcher in which they provided details of when and how they wished to be contacted to be interviewed. No identifying information about the participants will be used in published material. To ensure confidentiality, information gathered from participants was coded and de-identified. This de-identified electronic data, including Excel worksheets and interview recordings and transcripts have been stored on a password protected computer accessible only to the researcher in accordance with National Health and Medical Research Council (NHMRC) and ECU guidelines. Digital data will be destroyed after five years in accordance with the aforementioned guidelines.

3.9 Summary

The research methods outlined in this chapter aimed to collect data to describe paediatric occupational therapists' involvement in and capacity for promoting the PAL of children. Data were therefore collected from registered occupational therapists who were working to support children in WA. Mixed methods research, utilising a follow-up explanatory design, was chosen to effectively address the research questions.

Part One of this study involved subjects completing an online self-report questionnaire regarding the extent of their involvement in promoting the PAL of individual children and/or all children in a community setting. Participants also completed rating scales measuring their capacity to promote children's PAL. The questionnaires, distributed via DOT(WA) Inc. to a large network of occupational therapists working with children in WA, also contributed towards identifying factors perceived as enablers or barriers to their promotion of children's PAL.

Following data analysis of Part One, descriptive statistics revealed the extent of participant's involvement in and capacity for promoting children's PAL. In-depth interviews were used to verify, illustrate and refine information gathered from Part One, in particular to further explore potential enablers and barriers to paediatric occupational therapists' involvement in promoting children's PAL. Participants were chosen from volunteers from the questionnaire, to maximise variation of experience. Interview questions were refined based on results from

Part One and interview transcripts were thematically analysed. Analytical methods included both a deductive approach based upon the individual factors in the Health Promotion Capacity theoretical framework (McLean et al., 2005) and a data driven inductive approach.

The following chapter will present the results from this study: Part One, self-report questionnaires, and Part Two, in-depth interviews.

Chapter 4: Results

4.1 Introduction

This chapter presents the quantitative results from Part One, the online questionnaire which was completed by occupational therapists working with children in Western Australia (WA). Specifically, descriptive statistics are provided regarding the sample's demographics and practice in promoting children's physical activity levels (PAL). Mean capacity ratings for promoting children's PAL are then presented followed by frequency of barriers to such health promotion practice. Quantitative results from Part One, concludes with a comparison of responses made by participants who did and did not promote the PAL of children. Subsequently, the qualitative results from Part Two, in-depth interviews, are presented entailing themes regarding perceived enablers and barriers to participants' involvement in promoting children's PAL. This chapter will conclude with a summary of the main findings.

Part One: Results

4.2 Demographic characteristics of Part One participants

Ninety six people opened the link to the online questionnaire and 86 people answered at least some of the questions and were included in the collated results. The sample represented 28% of the estimated total population (310) of occupational therapists registered with Australia Health Practitioner Regulation Agency (AHPRA) working as a clinician with paediatrics as their primary scope of practice.

All 86 people completed information sections 1 to 3 which collected demographic data of the children participants worked with and explored occupational therapy practice and involvement in promoting the PAL of individual children and all children in the community. Smaller numbers participated in the latter sections of the questionnaire, with 74 people completing the entire questionnaire. This included section 4 which investigated occupational therapists' capacity to promote children's PAL; section 5 regarding barriers to promoting children's PAL, and section 6 which gathered demographic characteristics of the participants. Section 4, was a longer section which may account for the drop out of 12 participants as it involved participants rating their capacity for promoting the PAL of children against 21 capacity items. Response numbers for each item ranged from 66 to 74. For the purposes of

statistical analyses, the percentages and means provided throughout reflect the percentages and mean of the completed answers for each question.

A predetermined target number of 77 responses was identified for this research, as according to published sample size tables using Yamane's formula, this number would enable an estimation of a population proportion with specified precision of 10 percentage points with 95% confidence, given a population size of 325 (Israel, 2012). The target number of responses (77) for Part One was therefore met with regard to sections 1 to 3 which allowed an estimation of a population proportion for occupational therapy practice and involvement in promoting the PAL of individual children and all children in the community.

Description of sample

All participants were registered with AHPRA and worked as occupational therapy clinicians, with 40% taking on additional supervisory or managerial roles. The majority of participants were female (96%) and were members of Developmental Occupational Therapy Western Australia (DOT (WA) Inc.) (88%).

Occupational therapists in WA may become qualified by completing a Bachelor or Master's qualification. In this study, 76% of participants' highest qualification level was a Bachelor degree, 12% had achieved Masters and 9% had a Graduate Certificate or Diploma. See Table 4.1a.

Participants' age ranged from 21 to 59 years, with experience working as an occupational therapist with children ranging from 0 to 36 years. Over half (53%) of participants worked part-time hours with the average being 73% of full time hours, which can be estimated to be 28 hours per week. See Table 4.1b.

Table 4.1a Demographic characteristics of Part One participants (n=74) – nominal data

Question	Responses	N (Numbers)	% (Percentage)
Gender	Male	3	4
	Female	71	96
Registered with AHPRA	Yes	74	100
	No	0	0
Member of DOT(WA) Inc.	Yes	65	88
	No	9	12
Highest level of qualification	Bachelor Degree	56	76
	Graduate Certificate or Graduate Diploma	7	9
	Masters	9	12
	PhD	0	0
	Other	2	3
Current work roles	Clinician	73	100
	Supervisor	18	25
	Manager	17	23
	Project worker	6	8
	Other	4	5
	No response	1	N/A

Table 4.1b Demographic characteristics of Part One participants – continuous data

Question	Response Range	Mean	Standard deviation
Age	21-59	35	10.1
Years since occupational therapy qualification	0-44	13	10.6
Years worked in paediatrics	0-36	11	9.2
Percentage of fulltime hours worked	20-100	73	29.1

4.3 Workplace characteristics of Part One participants

The settings in which participants worked, included private practice (36%), community health (27%) and disability services (26%). The majority of participants worked for a non-government organisation (71%) and worked in a multi-disciplinary team (76%). See Table 4.2.

Table 4.2 Workplace characteristics of Part One participants (n=74)

Question	Responses	N	%
Work setting	Hospital	2	3
	Community health service	20	27
	Disability services	19	26
	Private practice	27	36
	Other	6	8
Type of organisation	Government	21	29
	Non-government	52	71
	No response	1	N/A
Work in a multidisciplinary team	Yes	56	76
	No	18	24

4.4 Characteristics of the children supported by Part One participants

Participants worked with children who were aged between 0-18 years, the majority of whom were located in the Perth metropolitan area (84%). The majority of participants supported children who had difficulty functioning (95%). When asked in which areas the children typically had difficulties, participants chose on average between 3 and 4 of the 7 areas of difficulty listed. Overall participants reported most frequently the children had difficulties with sensory, cognitive, emotional and movement functions, with speech functions also reported by 60% of participants. See Table 4.3a and 4.3b.

Table 4.3a Characteristics of the children supported by Part One participants – continuous data

Question	Response Range	Mean	Standard deviation
Youngest age	0-10	2	2.2
Oldest age	5-18	13	4.1

Table 4.3b Characteristics of the children supported by Part One participants (n=86) – nominal data

Question	Responses	N	%
Did children typically have difficulty with functioning	Yes	82	95
	No	4	5
Area(s) in which children typically had difficulties	Cognitive	70	81
	Emotional	63	73
	Sensory	76	88
	Movement	68	79
	Speech	52	60
	Poor health	28	33
	Other	4	5
WA health region(s) in which children reside	Perth metropolitan	72	84
	South West	6	7
	Great Southern	3	3
	Wheatbelt	0	0
	Goldfields	1	1
	Midwest	2	2
	Pilbara	3	3
	Kimberley	0	0

4.5 Part One participants' practice to support children

In the month prior to completing the questionnaire, almost all participants (93%) worked with individual children, viz. those children who were individually referred to their organisation. Collectively, participants estimated they worked with 2165 individual children. Almost half of participants (49%) provided services and support for all children in a community setting, viz. those children for whom individual referrals were not received. Of these participants, the majority (82%) supported all children in a school setting. See Tables 4.4a and 4.4b.

Table 4.4a Part One participants' practice to support children (n=86) – nominal data

Question	Responses	N	%
Did you provide services to individual children	Yes	80	93
	No	6	7
Did you provide services to all children in a community setting	Yes	41	49
	No	43	51
	No response	2	N/A
In which community setting(s) did you provide services for all children	Schools	31	82
	Child Care Centres	4	10
	Playgroups	4	10
	Local area/town	11	27
	Other	12	29
	No response	3	N/A

Table 4.4b Part One participants' practice to support children – continuous data

Question	Response Range	Mean	Standard deviation	Total children
Numbers of individual children provided services to over the past month	4-100	27	20.7	2165

4.6 The practice of Part One participants who worked with individual children to promote their physical activity levels (PAL)

During the month prior to completing the questionnaire, the majority of participants (81%) promoted the PAL of some of the children who were individually referred to their organisation. The percentage of these children supported to increase their PAL ranged from 3% to 100%. In total, during the month prior to completing the questionnaire, the participants reported promoting the PAL of 875 individual children. See Table 4.5a and 4.5b.

Table 4.5a The practice of Part One participants who worked with individual children to promote their physical activity levels (n=80) – nominal data

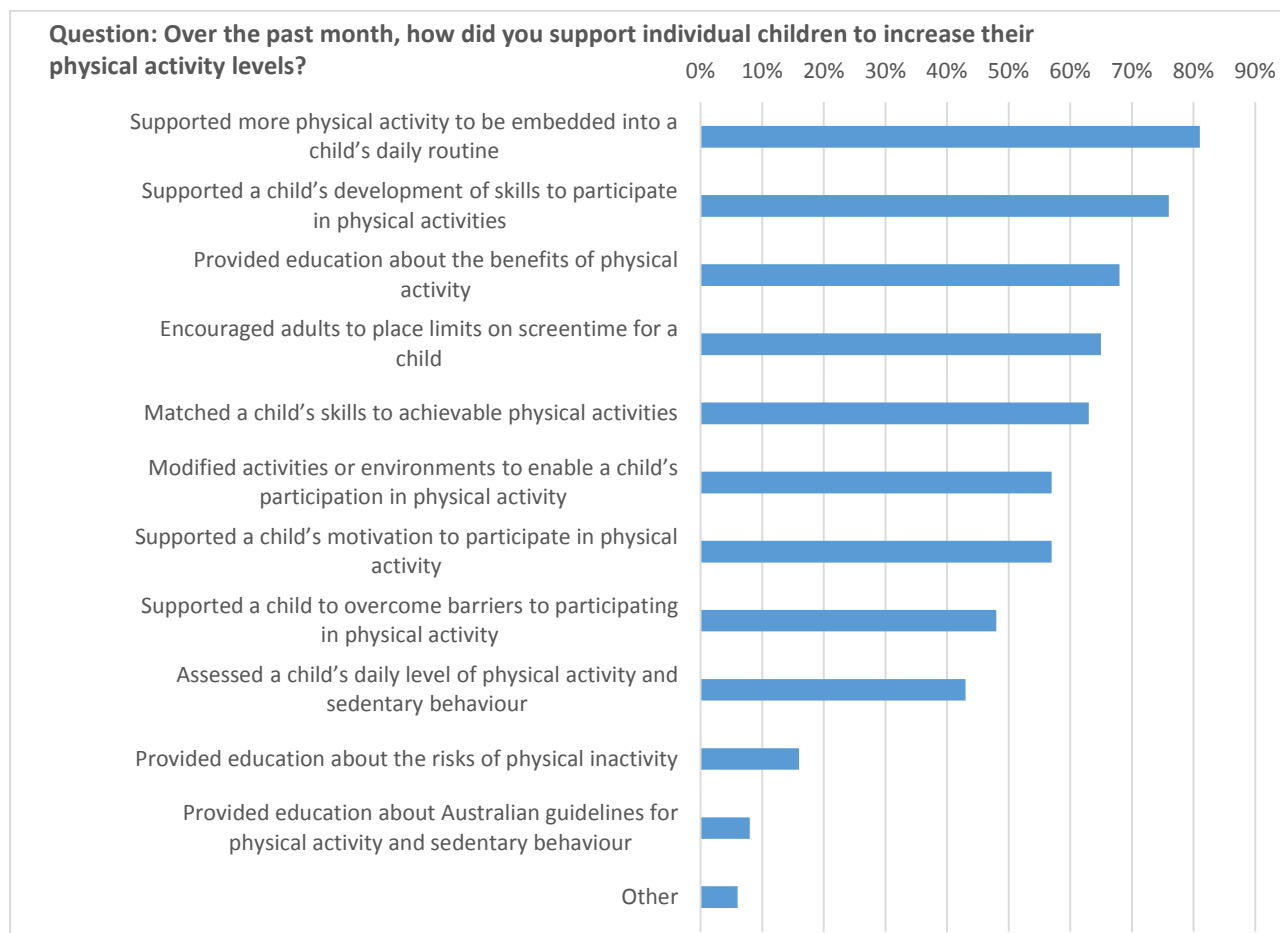
Question	Responses	N	%
Over the past month did you support individual children to increase their physical activity levels	Yes	64	81
	No	15	19
	No response	1	N/A

Table 4.5b The practice of Part One participants who worked with individual children to promote their physical activity levels – continuous data

Question	Response Range	Mean	Standard deviation	Total number individually supported to increase physical activity levels
Of all the individual children you worked with, what percentage did you support to increase their physical activity levels	3-100	48	28.1	875

Participants who had promoted the PAL of individual children (N=63) chose an average of four activities that they implemented during the month prior to completing the questionnaire. Over three quarters of these participants supported more physical activity to be embedded into a child’s daily routine and supported a child’s development of skills to participate in physical activities. Over 60% provided education regarding the benefits of physical activity; encouraged adults to place limits on screen-time for a child; and matched a child’s skills to achievable physical activities. Over half modified activities or environments to enable a child’s participation in physical activity and supported a child’s motivation to participate in such activities. Less than half (43%) assessed children’s daily level of physical activity and sedentary behaviour, and less than 10% provided education about Australian guidelines for physical activity and sedentary behaviour. See Figure 4.1.

Figure 4.1 The activities of Part One participants who promoted the physical activity levels of individual children (n=63)



4.7 The practice of Part One participants who worked with all children in a community setting to promote their physical activity levels (PAL)

In the month prior to completing the questionnaire, half of the participants who had supported all children in a community setting, implemented activities to promote the PAL of all children. See Table 4.6.

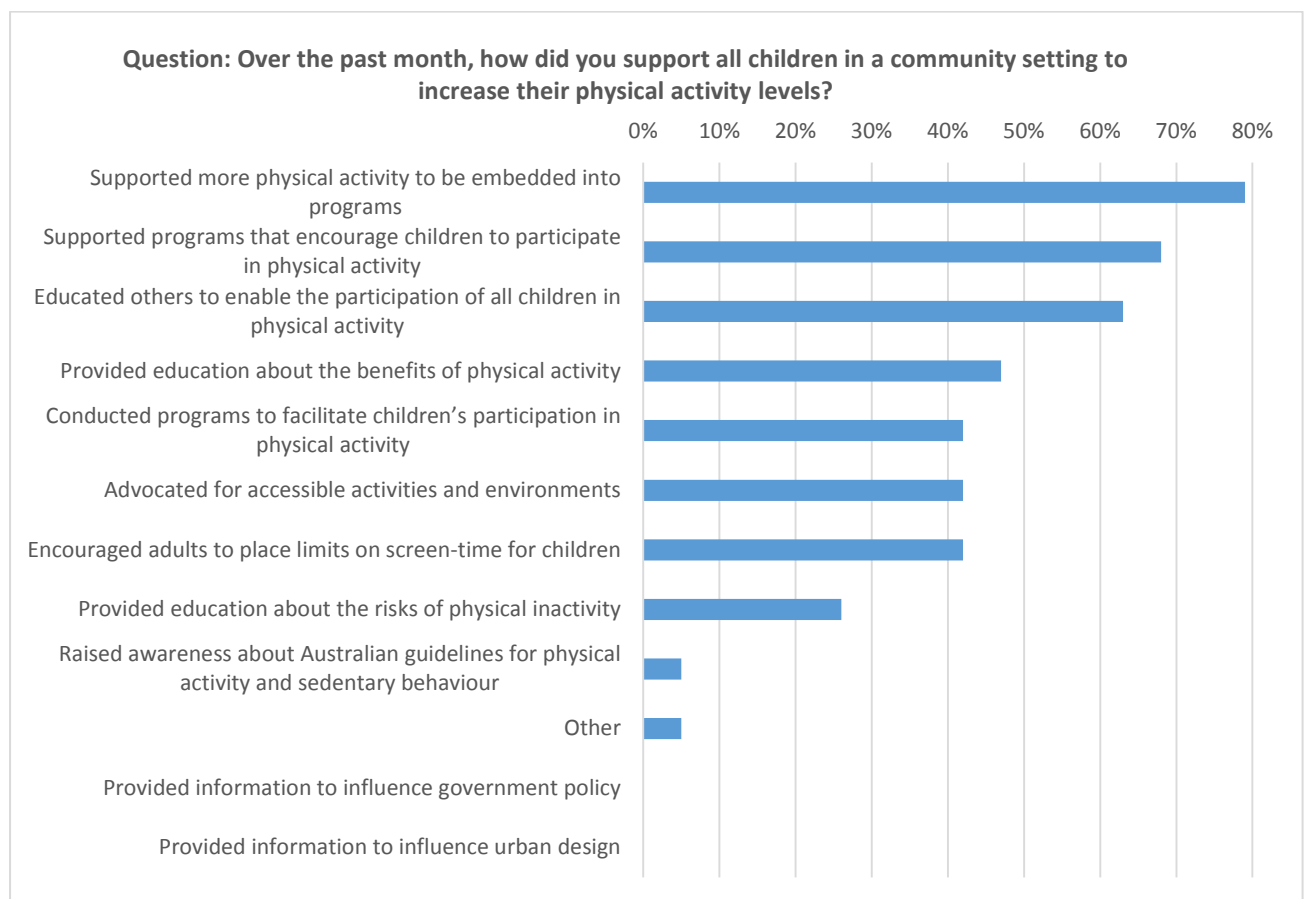
Table 4.6 The practice of Part One participants who worked with all children in a community setting to promote their physical activity levels (n=41)

Question	Responses	N	%
Over the past month did you support all children in a community setting to increase their physical activity levels?	Yes	19	50
	No	19	50
	No response	3	N/A

Participants who had promoted the PAL of all children in a community setting (N=19) chose an average of four activities that they had implemented during the month prior to completing

the questionnaire. Over three quarters of these participants supported more physical activity to be embedded into programs. Over 60% supported programs that encourage children to participate in physical activity and educated others to enable the participation of all children in physical activity. Over 40% conducted programs to facilitate children’s participation in physical activity and advocated for accessible activities and environments. Likewise, 40% provided education about the benefits of physical activity and encouraged adults to place limits on screen-time for children. Only 5% provided education about Australian guidelines for physical activity and sedentary behaviour, and no participants reported having provided information to influence government policy or urban design. See Figure 4.2.

Figure 4.2 The activities of Part One participants who promoted the physical activity levels of all children in a community setting (n=19)



4.8 Part One participants’ capacity to promote the physical activity levels (PAL) of children

A rating scale from 1 to 4 which corresponded with strongly disagree, disagree, agree and strongly agree respectively, was used by participants to rate their capacity to promote the PAL of children. Five questions related to each factor of knowledge, skill and commitment

whilst 6 questions related to satisfaction with access to resources. Cronbach’s alpha was used to determine the internal consistency of items to gauge the reliability of the survey instrument. Cronbach’s alpha ranged from 0.731 to 0.842 for the four factors and 0.929 overall, which indicates good internal reliability. See Table 4.7.

Table 4.7 Internal reliability of rating scale measuring participant’s capacity to promote the physical activity levels of children.

Capacity Factor	Number of Questions	Cronbach’s Alpha
Knowledge	5	0.73
Skill	5	0.84
Commitment	5	0.84
Resources	6	0.81
Overall	21	0.93

Overall, participants rated their capacity to promote children’s PAL positively. The highest ratings were in the areas of knowledge (3.2), skill (3.1) and commitment (3.0) where the average ratings corresponded to agree. Satisfaction with resources available was rated lower at 2.7.

All knowledge areas rated over 3 except for knowledge of the recommended amount of daily physical activity and screen time limits for Australian children (2.9). Awareness of the risks for children of physical inactivity rated the highest (3.6). With regard to skill, the highest ratings were in collaboration (3.5) and communication (3.4). Building the capacity of communities to promote children’s PAL was rated lowest (2.8).

In the area of commitment, having a belief in and advocating for promoting the health of children by supporting their PAL rated highest (3.5). Recognition of their ability to promote children’s PAL rated lowest (2.6). Promoting children’s PAL being a priority (2.9) also rated under 3 and had the largest standard deviation (0.8) of all capacity items, indicating a diversity of opinion.

With regard to satisfaction with access to resources, participants were most satisfied with managerial and collegial support (3.1) and having the necessary workplace values and structures for promoting individual children’s PAL (3.0). Satisfaction with funding to engage in activities to promote children’s PAL rated the lowest (2.3). In addition, having adequate time and the necessary resources and equipment to engage in activities to promote children’s PAL, both rated close to neutral (2.6). See Table 4.8.

Table 4.8 Part One participants' ratings of their capacity to promote the physical activity levels of children

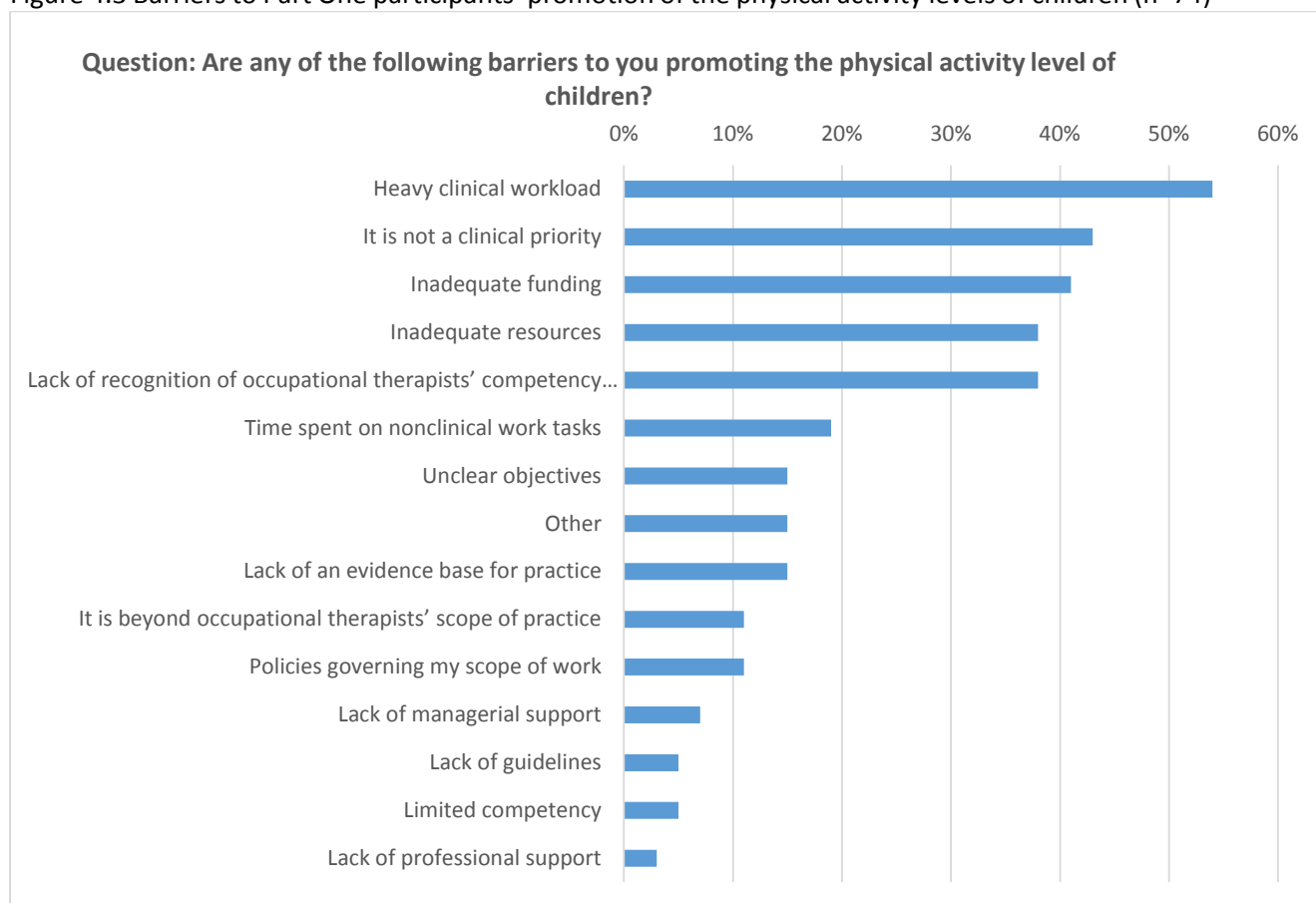
Capacity to promote the physical activity levels of children	Response Range	Mean	Standard deviation
Knowledge			
I have a sound knowledge of health promotion principles	2-4	3.2	0.6
I know the recommended amount of daily physical activity and screen time limits for Australian children	1-4	2.9	0.7
I am aware of the risks for children of physical inactivity	2-4	3.6	0.5
I know a range of strategies to promote the physical activity levels of individual children	2-4	3.3	0.6
I know a range of strategies to promote the physical activity levels of all children in a community setting	2-4	3.1	0.6
Knowledge Total	11-20	16.1	2.1
Skill			
I have the skills to plan, implement and evaluate health promotion activities to promote children's physical activity levels	2-4	2.9	0.6
I can communicate effectively with diverse audiences, using a variety of means	2-4	3.4	0.5
I have the skills to collaborate with others in a range of contexts	2-4	3.5	0.5
I am able to gather and use evidence-based strategies to guide my practice in promoting children's physical activity levels	2-4	3.1	0.6
I am able to build the capacity of communities and organisations to promote children's engagement in physical activity	1-4	2.8	0.7
Skill Total	11-20	15.6	2.3
Commitment			
I believe in and advocate for promoting the health of children by supporting their physical activity levels	3-4	3.5	0.5
I am confident in my ability to promote the physical activity levels of individual children	2-4	3.2	0.6
I am confident in my ability to promote the physical activity levels of all children in a community setting	2-4	2.9	0.7
My ability to promote children's physical activity levels is well recognised	1-4	2.6	0.7
Promoting the health of children by supporting their physical activity levels is a priority in my work	1-4	2.9	0.8
Commitment Total	11-20	14.8	2.5
Satisfaction with Resources			
I have adequate time to engage in activities to promote children's physical activity levels	1-4	2.6	0.6
I have access to the necessary resources and equipment to promote children's physical activity levels	2-4	2.6	0.6
My workplace values and structures enable me to participate in activities to promote the physical activity levels of individual children	2-4	3.0	0.6

My workplace values and structures enable me to participate in activities to promote the physical activity levels of all children in a community setting	1-4	2.7	0.7
I have managers and colleagues who support my activities to promote children's physical activity levels	2-4	3.1	0.6
There is adequate funding for me to engage in activities to promote children's physical activity levels	1-4	2.3	0.7
Resources Total	10-23	16.3	2.9

4.9 Barriers to Part One participants' promotion of the physical activity levels (PAL) of children

Participants were asked to choose up to four of the most significant barriers to their involvement in promoting children's PAL. Heavy clinical workload was the most common choice (54%) followed by it not being a clinical priority (43%), inadequate funding (41%) inadequate resources (38%) and lack of recognition of occupational therapists' competency for promoting the PAL of children (38%). See Figure 4.3.

Figure 4.3 Barriers to Part One participants' promotion of the physical activity levels of children (n=74)



4.10 Comparison of Part One responses per participants' involvement in promoting the physical activity levels (PAL) of children

A comparison was made between responses of participants who did promote the PAL of individual children (Cohort A) and those who did not (Cohort B). A similar comparison was made between participants who promoted the PAL of all children in a community setting (Cohort C) and those who did not (Cohort D). The results, including responses by all participants, are detailed in this section. The total number of participants within each Cohort appear in Table 4.9 below, however as some participants did not answer all questions, nor are all answer options included within this comparison, total numbers for each question vary. As noted above, for the purposes of statistical analyses, the percentages provided reflect the percentages of the completed answers for each question.

Table 4.9 Number of participants within each cohort

Cohort	Description	N
Cohort A	Participants who had promoted the PAL of individual children	64
Cohort B	Participants who had not promoted the PAL of individual children	15
Cohort C	Participants who had promoted the PAL of all children in a community setting	19
Cohort D	Participants who had not promoted the PAL of all children in a community setting	19

Demographic comparison

Little variance was noted across the cohorts with regard to membership of DOT(WA) Inc. nor between those identifying as clinicians only and those also identifying as supervisors and/or managers. When comparing most common highest qualification levels across cohorts, little variance was noted apart from Cohort C having a higher percentage with either a graduate certificate or diploma (29% compared to 9% overall). See Table 4.10a.

When comparing age and experience, little variance was noted apart from when comparing Cohort D to overall responses. Cohort D were on average a little younger (33 compared to 35 years) and more recently graduated (year 2004 compared to 2002) with fewer years working in paediatrics (8 years compared to 11 years). They also reported working on average more hours compared to overall responses (88% compared to 73% of full time hours). See Table 4.10b.

Table 4.10a Comparison of demographic characteristics across cohorts – nominal data

		Percentage of Cohort (Numbers in brackets)				
Question	Responses	Overall	Cohort A	Cohort B	Cohort C	Cohort D
Member of DOT (WA) Inc.	Yes	88% (65)	88% (50)	92% (12)	76% (13)	82% (14)
	No	12% (9)	12% (7)	8% (1)	24% (4)	18% (3)
Highest level of qualification (most common)	Bachelor Degree	76% (56)	75% (43)	85% (11)	65% (11)	76% (13)
	Graduate Certificate/ Graduate Diploma	9% (7)	9% (5)	0	29% (5)	6% (1)
	Masters	12% (9)	12% (7)	15% (2)	6%(1)	18% (3)
Current work roles	Clinician only	60% (44)	59% (33)	69% (9)	59% (10)	65% (11)
	Supervisor/ Manager	40% (29)	41% (23)	31% (4)	41% (7)	35% (6)

Table 4.10b Comparison of demographic characteristics across cohorts – ordinal data

Question	Mean response of Cohort				
	Overall	Cohort A	Cohort B	Cohort C	Cohort D
Age	35	34	35	35	33
Year completed OT qualification	2002	2002	2001	2003	2004
Years worked in paediatrics	11	11	10	10	8
Percentage of fulltime hours worked	73	73	66	76	88

Comparison of workplace characteristics

With regard to the common workplaces where participants worked, Cohort B worked in disability services more frequently (46% compared to 26% overall) and in community health services less frequently (15% compared to 27% overall). It is also noted that only five participants (25%) in a community health service worked with all children in a community setting (Cohort C and D) compared to 49% overall (as noted in section 4.5). Only two participants in Cohort B (17%) and Cohort C (12%) worked for a government organisation compared to 29% overall. See Table 4.11.

Table 4.11 Comparison of workplace characteristics across cohorts

		Percentage of Cohort (Numbers in brackets)				
Question	Responses	Overall	Cohort A	Cohort B	Cohort C	Cohort D
Work setting (most common)	Community health service	27% (20)	30% (17)	15% (2)	18% (3)	12% (2)
	Disability services	26% (19)	23% (13)	46% (6)	35% (6)	35% (6)
	Private practice	36% (27)	39% (22)	31% (4)	29% (5)	35% (6)
Type of Organisation	Government	29% (21)	32% (18)	17% (2)	12% (2)	37% (6)
	Non-government	71% (52)	68% (39)	83% (10)	88% (15)	63% (10)
Work in a multidisciplinary team	Yes	76% (56)	75% (43)	77% (10)	82% (14)	71% (12)
	No	24% (18)	25% (14)	23% (3)	18% (3)	29% (5)

Comparison of characteristics of children

Only three participants (21%) working with children in rural Western Australia (WA) worked with all children in a community setting (Cohort C and D), compared with 49% overall (as noted in section 4.5). Cohort A was similar to overall responses with regard to working with children in the Perth metropolitan area or rural WA. With regard to areas children typically had difficulty functioning, Cohort B reported children having difficulties with speech functions more frequently (80% compared to 60% overall). Cohort C reported children having difficulties with emotional (95% compared to 73% overall), sensory (100% compared to 88% overall) and speech functions (74% compared to 60% overall) more frequently. See Table 4.12a.

Table 4.12a Comparison of characteristics of children across cohorts – nominal data

		Percentage of Cohort (Numbers in brackets)				
Question	Responses	Overall	Cohort A	Cohort B	Cohort C	Cohort D
WA health regions in which children reside	Perth metropolitan	84% (72)	85% (66)	75% (6)	89% (17)	95% (18)
	Rural WA	16% (14)	15% (12)	25% (2)	11% (2)	5% (1)
Area(s) in which children typically had difficulties	Cognitive	81% (70)	81% (52)	87% (13)	79% (15)	74% (14)
	Emotional	73% (63)	77% (49)	67% (10)	95% (18)	74% (14)
	Sensory	88% (76)	89% (57)	87% (13)	100% (19)	79% (15)
	Movement	79% (68)	78% (50)	80% (12)	68% (13)	74% (14)
	Speech	60% (52)	58% (37)	80% (12)	74% (14)	63% (12)
	Poor health	33% (28)	30% (19)	40% (6)	37% (7)	32% (6)

The average ages of children that participants worked with were quite consistent across cohorts, apart from Cohort C participants who worked with children that were a little older. As most participants working with all children (Cohorts C and D) were in a school setting (as noted in section 4.5), this may have contributed to the slightly older age range. See Table 4.12b.

Table 4.12b Comparison of characteristics of children across cohorts – ordinal data

Question	Mean response of Cohort				
	Overall	Cohort A	Cohort B	Cohort C	Cohort D
Youngest age	2.0	2.1	1.6	2.9	2.3
Oldest age	13.2	13.4	13.1	14.7	13.4

Comparison of capacity to promote the physical activity levels (PAL) of children

Participants involved in promoting children’s PAL (Cohort A and C) rated their capacity in knowledge, skill, commitment and access to resources higher than those who did not promote children’s PAL (Cohort B and D). Differences were most apparent for participants working with individual children (Cohort A and B) with ratings of 3.3 compared to 3.0 for knowledge, 3.2 compared to 2.9 for skill, 3.1 compared to 2.6 for commitment and 2.8 compared to 2.4 for satisfaction with resources. Items with the greatest difference between Cohort A and B related to the area of commitment; specifically, recognition of their ability to promote children’s PAL (2.7 compared to 2.1) and the priority placed upon promoting children’s PAL (2.9 compared to 2.4). With regard to resources, the item with the largest difference was having the necessary workplace values and structures for promoting physical activity with individuals (3.1 compared to 2.5). When comparing Cohort C and D, items with the greatest difference in average rating related to the area of resources; specifically having access to necessary resources and equipment (3.1 compared to 2.3), adequate time (2.9 compared to 2.4), managerial and collegial support (3.2 compared to 2.7) and having workplace values and structures necessary for promoting the PAL of all children in a community setting (3.1 compared to 2.6). See Table 4.13.

Table 4.13 Comparison of capacity ratings across cohorts

Capacity to promote the physical activity levels of children	Mean response of Cohort				
	Overall	Cohort A	Cohort B	Cohort C	Cohort D
Knowledge					
I have a sound knowledge of health promotion principles	3.2	3.3	3.0	3.1	3.2
I know the recommended amount of daily physical activity and screen time limits for Australian children	2.9	2.9	2.8	3.0	2.8
I am aware of the risks for children of physical inactivity	3.6	3.7	3.4	3.6	3.4
I know a range of strategies to promote the physical activity levels of individual children	3.3	3.4	3.0	3.4	3.4
I know a range of strategies to promote the physical activity levels of all children in a community setting	3.1	3.1	2.7	3.4	3.0
Average Knowledge	3.2	3.3	3.0	3.3	3.2
Skill					
I have the skills to plan, implement and evaluate health promotion activities to promote children's physical activity levels	2.9	3.0	2.8	3.1	2.9
I can communicate effectively with diverse audiences, using a variety of means	3.4	3.4	3.2	3.5	3.1
I have the skills to collaborate with others in a range of contexts	3.5	3.5	3.3	3.6	3.4
I am able to gather and use evidence-based strategies to guide my practice in promoting children's physical activity levels	3.1	3.2	2.8	3.2	3.1
I am able to build the capacity of communities and organisations to promote children's engagement in physical activity	2.8	2.9	2.3	3.0	2.6
Average Skill	3.1	3.2	2.9	3.3	3.0
Commitment					
I believe in and advocate for promoting the health of children by supporting their physical activity levels	3.5	3.5	3.2	3.6	3.4
I am confident in my ability to promote the physical activity levels of individual children	3.2	3.3	2.9	3.3	3.1
I am confident in my ability to promote the physical activity levels of all children in a community setting	2.9	2.9	2.7	3.2	3.1
My ability to promote children's physical activity levels is well recognised	2.6	2.7	2.1	2.6	2.4

Promoting the health of children by supporting their physical activity levels is a priority in my work	2.9	2.9	2.4	2.9	2.5
Average Commitment	3.0	3.1	2.6	3.1	2.9
Satisfaction with Resources					
I have adequate time to engage in activities to promote children’s physical activity levels	2.6	2.7	2.4	2.9	2.4
I have access to the necessary resources and equipment to promote children’s physical activity levels	2.6	2.7	2.3	3.1	2.3
My workplace values and structures enable me to participate in activities to promote the physical activity levels of individual children	3.0	3.1	2.5	3.1	2.7
My workplace values and structures enable me to participate in activities to promote the physical activity levels of all children in a community setting	2.7	2.6	2.7	3.1	2.6
I have managers and colleagues who support my activities to promote children’s physical activity levels	3.1	3.1	2.7	3.2	2.7
There is adequate funding for me to engage in activities to promote children’s physical activity levels	2.3	2.4	2.1	2.4	2.3
Average satisfaction with resources	2.7	2.8	2.4	3.0	2.5

Comparison of common barriers to promoting physical activity levels (PAL) of children

With regard to common barriers to promoting the PAL of children, when comparing Cohort A and B, a higher percentage of Cohort B selected a “heavy clinical workload” (69% compared to 49%) and “It (PAL) is not a clinical priority” (69% compared to 37%). A higher percentage of Cohort A selected “inadequate funding” (42% compared to 31%) as well as “lack of recognition of occupational therapists’ competency in this area” (40% compared with 23%).

When comparing Cohort C and D with regard to common barriers to promoting the PAL of children, a higher percentage of Cohort D selected a “heavy clinical workload” (71% compared to 47%). Likewise, a higher percentage of Cohort D selected barriers “It (PAL) is not a clinical priority” (53% compared to 29%) and “inadequate resources” (41% compared to 29%). See Table 4.14.

Table 4.14 Comparison of common barriers across cohorts

Question	Responses	Percentage of Cohort (Numbers in brackets)				
		Overall	Cohort A	Cohort B	Cohort C	Cohort D
Are any of the following barriers to you promoting the physical activity levels of children? Please choose up to 4 of the most significant barriers.	Heavy clinical workload	54 (40)	49 (28)	69 (9)	47 (8)	71 (12)
	It is not a clinical priority	43 (32)	37 (21)	69 (9)	29 (5)	53 (9)
	Inadequate funding	41 (30)	42 (24)	31 (4)	41 (7)	47 (8)
	Inadequate resources	38 (28)	39 (22)	38 (5)	29 (5)	41 (7)
	Lack of recognition of occupational therapists' competency in this area	38 (28)	40 (23)	23 (3)	47 (8)	41 (7)

Part Two Results

4.11 Demographic characteristics of Part Two participants

Of the 27 Part One participants who volunteered to be contacted for Part Two of the study, subjects were chosen progressively, to maximise diversity of experience until data saturation was reached. This occurred after nine interviews were conducted by the researcher, which is towards the higher end of typical sample sizes for phenomenological studies (Starks & Brown Trinidad, 2007). A variety of qualification levels, ages and years of experience were represented. In addition to working as a clinician, 44% also took on a managerial or supervisory role and 56% worked part-time hours. All but one of the participants were female, with 78% members of DOT (WA) Inc. and all registered as occupational therapists with AHPRA. See Table 4.16.

Table 4.16 Demographic characteristics of Part Two participants

Question	Possible Responses	Number
Gender	Male	1
	Female	8
Registered with AHPRA	Yes	9
	No	0
Member of DOT(WA) Inc.	Yes	7
	No	2
Highest level of qualification	Bachelor Degree	3
	Graduate Certificate or Graduate Diploma	3
	Masters	3
Current work roles	Clinician only	5
	Supervisor and/or Manager	4
Age	21-29	2
	30-39	4
	40-49	1
	50-59	2
Year completed OT qualification	1981-1989	2
	1990-1999	1
	2000-2009	4
	2010-2015	2
Years worked in paediatrics	0-5	2
	6-15	5
	16-25	1
	26-35	1
Hours worked	Full-time	4
	Part-time	5

With regard to their workplace, the majority of participants (89%) worked in a multi-disciplinary team and 56% worked for the government. A variety of work settings were also represented. See Table 4.17

Table 4.17 Workplace characteristics of Part Two participants

Question	Responses	N
Work Settings	Hospital	2
	Community health service	2
	Disability services	2
	Private practice	2
	Not for profit	1
	WACHS remote health	1
Type of Organisation	Government	5
	Non-government	4
Work in a multidisciplinary team	Yes	8
	No	1

Participants in Part Two worked with children across a variety of ages. All children typically had difficulty with cognitive, emotional and sensory functions, and 78% had difficulties with movement and speech functions. The participants in Part Two worked with children of which, 67% were based in the Perth metropolitan area. See Table 4.18 for further detail.

Table 4.18 Characteristics of the children supported by Part Two participants

Question	Responses	Numbers
WA health regions in which children reside	Perth metropolitan	6
	Rural WA	3
Area(s) in which children typically had difficulties	Cognitive	9
	Emotional	9
	Sensory	9
	Movement	7
	Speech	7
	Poor health	3
Age range –from youngest	0-1	4
	2-5	3
	6-10	2
Age range –to oldest	5-9	3
	10-13	2
	14-17	4

With regard to involvement in promoting children’s PAL, 67% of Part Two participants promoted children’s PAL by providing individual services and 33% by providing services to all children in a community setting. See Table 4.19

Table 4.19 Part Two participants’ involvement in promoting children’s physical activity levels

Question	Responses	Numbers
Over the past month did you support individual children to increase their physical activity levels?	Yes	6
	No	2
	N/A	1
Over the past month did you support children to increase their physical activity levels by providing services to all children in a community setting?	Yes	3
	No	1
	N/A	5

4.12 Thematic analysis

As described in section 3.7.4, the Building Health Promotion Capacity theoretical framework (McLean et al., 2005) was used as a template for organising the data into the four broad

categories of knowledge, skill, commitment and access to resources. Additional themes that emerged directly from the transcripts were identified and labelled using inductive coding. The additional codes related to environmental elements rather than individual factors impacting upon participants' capacity for health promotion. All the codes were then grouped into subthemes and overarching themes which related to key enablers and barriers to participants' involvement in promoting children's PAL as outlined in Table 4.20.

Table 4.20 Themes and subthemes relating to enablers and barriers to participants' involvement in promoting children's physical activity levels

Key Theme: Enablers	Subtheme
Belief in importance of physical activity for children	Personal beliefs
	Changing levels of PAL in the community
	Family/parent priorities
Applicability to occupational therapy role	Recognised part of occupational therapy role
	Applicable to occupational therapy role in child development
	Connections between promoting children's PAL and common occupational therapy intervention areas
Confidence in skills	Confidence in promoting PAL of children
	Confidence building community capacity
	Credibility
Holding the necessary knowledge	Experience
	Tertiary education
	Evidence-based practice
Access to resources	Managerial and collegial support
	Few resources required
Key Theme: Barriers	Sub-theme
Promoting children's PAL not being a clinical priority	Client/family/parent priorities
	Finite resources/funding for services
	Public and political preference for individual care services
	Priorities of the health service/organisation
	Different focus for occupational therapists
Lack of recognition of occupational therapists' competency in promoting children's PAL	Lack of managerial support
	Lack of recognition of occupational therapy role in promoting PAL
	Delineation of roles within a multi-disciplinary team
Lack of managerial and political support for primary prevention activity	Lack of managerial and collegial support
	Lack of strategic planning directing services to promote children's PAL
	Lack of funding for primary prevention activities
	Lack of managerial support for primary prevention activities
Lack of expertise	Shift towards an individual treatment-focussed model for health services
	Lack of expertise
	Lack of knowledge
	Lack of parental knowledge

Lack of resources	Lack of suitable space in the health service
	Lack of suitable space and programs in the community
	Lack of family leisure time
	Clinician's time and workload
	Public and political preference for individual care services
	Lack of funding – for equipment; for preventative services; for occupational therapy services

4.13 Enablers

Participants were initially asked what had helped or would help them to intervene to promote the PAL of children. Following their response, participants were asked to reflect on the major enabling factors that were identified in Part One, namely knowledge of appropriate strategies; confidence in skills; using evidence; occupational therapy experience or further study; ability to build the capacity of communities; and having managerial and collegial support. Participants' responses were then categorised into a number of subthemes; these were subsequently clustered into 5 overarching themes: belief in importance of physical activity for children; applicability to occupational therapy role; confidence in skills; holding the necessary knowledge; and access to resources. Subthemes that related to environmental elements rather than individual factors included priorities of the client's family and changing levels of PAL in the community. Themes and subthemes are listed in Table 4.20 above and are discussed in more detail below, with reference to the factors identified by McLean et al. (2005) as necessary for the delivery of health promotion initiatives – knowledge, skill, commitment and access to resources.

Belief in importance of physical activity for children

Beliefs around the importance of physical activity to children's health and wellbeing underpinned participants' commitment to promoting children's PAL. All participants commented on their belief in the importance of habitual physical activity for child development. Indeed, when initially asked what supported their involvement in promoting children's PAL, most participants reflected on their personal beliefs regarding their role as an occupational therapist. For example, a participant reported that their impetus for promoting children's PAL was:

A personal belief. I've encouraged my family to be active... They have all played sport... So I guess the first thing is just thinking that it's an important part of a child's development. So being able to advocate for that in a real way. (Participant 4)

Many participants also commented on the importance of parents' sharing a concern regarding their child's level of physical activity. For example, when initially asked what helped them to intervene to promote children's PAL, a participant working for a government organisation reported:

If parents when they come to see us have indicated that it's an area of concern. The type of work we do is very much based on parent goals. So, if that's an area that they are concerned about we will provide intervention in that area. In addition, if children are turning up to occupational therapy sessions and their general body tone is really poor and they are having difficulty sitting upright at their desk or on the mat and that's impacting upon their ability to function in their home or school then this is a good way to broach the whole subject. (Participant 25)

As indicated above, many participants shared a view that there is a connection between trends in PAL and presenting concerns of children. For example, the same participant provided the following example:

I think if little kids were playing outdoors and spending less time behind screens we would not be seeing as many kids as we are. I have a classic example: I had a 4 or 5-year-old who could only use 1 hand. He could not build a tower out of blocks because all they did was, whilst the mother worked from home, the child was behind an iPad for babysitting. (Participant 25)

Similarly, another participant commented on a connection between changing PAL at school and reasons for referral:

I think the other thing that's helped me is seeing that children aren't doing enough and schools are reducing the amount of movement every day... the referrals are happening probably because what was an ordinary activity is not being done anymore. They all have smartboards in their classrooms and screen-time in school is increasing. We need to think about how that is balanced with what they are doing at home. New technologies and modern life is what's creating more referrals. (Participant 15)

Applicability to occupational therapy role

Another important factor influencing participants' commitment was the universal perception that promoting children's PAL is a legitimate part of the occupational therapist's role in paediatrics. The following comment, from a participant with significant occupational therapy experience, highlights the view that promoting children's PAL is consistent with the occupational therapy role:

I think OTs (occupational therapists) are well situated to incorporate physical activity into people's everyday routines. I really try and encourage families to think about what they do every day – and if physical activity is something that we discussed – how can it be incorporated in to your everyday without needing to go to a class or spend a lot of money. (Participant 25)

Another participant with many years of experience in paediatrics agreed that promoting children's PAL aligned with the occupational therapy role, but noted that in practice it is not always the focus of occupational therapists' clinical practice:

I see it as part of the OT (occupational therapy) role. It's part of their (young children's) daily activities to move around and explore and improve their skills in those areas. I know from stints working with pre-primary children and older, the OT focus comes narrowly down to handwriting and fine motor. (Participant 4)

In addition, when asked if a lack of recognition of occupational therapy competency in promoting children's PAL was a barrier to their involvement, four participants commented that while it was a recognised part of their role, the reason for referral might not be explicitly to increase children's participation in physical activity. For example:

There are much more referrals coming through to OTs to do sensory work which nearly always involves movement work, tactile work, heavy work. They don't put it into the active play umbrella but it fits there... There is a lot of focus on sensory. People recognise that OTs will work on that. I'm not sure they see it explicitly links up with active play or the need to be more active but it certainly would help some of those issues they are having. It is clearly part of what I'm allowed to do. I think it can be for the other OTs on the team. (Participant 4)

It can therefore be understood that promoting children's PAL is applicable to the occupational therapy role in child development whilst not necessarily the focus. In particular, the common intervention area of sensory processing was noted by participants as an activity that may be leveraged by paediatric occupational therapists to promote children's PAL.

Confidence in skills

The transcripts confirmed that another important factor influencing participants' commitment to promoting children's PAL was their confidence in having the necessary skills. For example, a participant working in private practice, as well as in a hospital and in schools provided many examples demonstrating their range of skills from assessment and intervention to evaluation employed to promote children's PAL as follows:

I do an assessment and as part of that I do clinical observations. From there I look at their whole movement, motor skills, proprioception and usual sort of OT stuff. In my private clinic I do a lot of gross motor stuff... I've got loads of stuff that I actually do with a child in a session and I also promote to the kids that they seek outside community activities.

I'm allowed to do one off assessment (at the hospital) ... as soon as I deem that there's a gross motor, balance, vestibular, proprioception element I straight away demonstrate some activities that the kids can do because I hate sending them home without any practical ideas and activities.

I have a questionnaire I always use in my private practice. I ask what they do after school and how long do they spend on an activity so then I have more specific (information about) what the time span is.

I'm also confident in my ability to assess it and in my private practice when I'm doing my weekly or fortnightly therapy I have a handle on how much they are actually improving in that skill.

I tend to promote it in the schools that I work... I've been talking to some schools and some of the schools have reintroduced trampolines. I have been trying to encourage that direction. (Participant 5)

In addition, participants who worked with all children in a community setting also reported having confidence in their ability to build the capacity of communities to promote the PAL of children. A participant who worked in a school reported their skill in promoting the school's capacity:

I often do that. I do parent PDs (training). I always include that as a component about the need for movement. I do talks with teachers about needing to have daily movement and how to embed it throughout the day in transitions. So it's (capacity building) definitely something I use and promote and put entries in newsletters, talks and my reports. It's slowly, slowly. You have to plant a seed and slowly expand it. You can't come in and say this is what has to be done. (Participant 15)

Another participant who was not involved in promoting the PAL of all children in the community spoke of their ability to promote community capacity to support children's health:

We just had the healthy kids' week program ... we certainly are promoting that now and we are doing it in partnership with the community and other stakeholders ... So we do this stuff. (Participant 23)

This participant further demonstrated their confidence in having the necessary knowledge and skills, including the capacity to develop trusting client relationships, to promote local community health:

The relationships we build with our Aboriginal communities aren't just through doing therapy but they are through building trust and building relationships. Building that trust bond that can then move into that more therapeutic model. (Participant 23)

A few participants also commented on the link between their confidence and credibility to parents when promoting children's PAL. For example, a participant commented:

It does assist me having worked with lots and lots of kids - it gives you a certain amount of confidence and credibility with families. It gives me confidence in my ability and having seen situations. (Participant 4)

Finally, a participant with less experience commented on drawing upon evidence to assist in feeling credible with parents when recommending an increase in the level of physical activity for their child:

Where I do have evidence for me I feel more confident to put it forward to parents because I like to put in a way that says, "evidence shows that". And I think for them as well, when I do have evidence to back me its definitely something that they take a bit more seriously. It feels like a bit more of a scientific base. Maybe a bit more respectable I guess. (Participant 8)

Holding the necessary knowledge

Highlighting the connection between knowledge, skill and commitment, four participants reflected on their knowledge of and ability to use evidence-based practice that assisted their promotion of children's PAL. For example a participant, who worked in the area of child behaviour reported drawing upon evidence when asked what helped them to intervene to promote children's PAL:

Using standardised assessments like the Sensory Profile for the child who has movement needs provides evidence to suggest that sort of intervention to the family. The only other aspect is the screen-time guidelines and the effects of too much screen-time, so exploring other engaging activities. (Participant 21)

Later in the interview, the participant described how occupational therapists can also draw upon evidence in relation to participation in physical activity and mental health and sensory processing as follows:

They can also come at it from the sensory processing and self-regulation side of it as well. There is good evidence of physical activity in regulating emotions and moods. (Participant 21)

When participants were asked to reflect on their knowledge, all of the participants involved in promoting children's PAL commented on having appropriate knowledge, as reflected in the following comment:

My general background and awareness as an OT including core stability, postural control, body awareness, need for proprioceptive input for our brains, whole body functioning, knowing about body requirements, whole body movement and need for movement. (Participant 15).

When asked where that knowledge had come from, the participant spoke of their occupational therapy degree, experience as an occupational therapist and working alongside colleagues as follows:

I think it was touched on ever so slightly as an undergraduate (student). It wasn't until I was working that I really understood the concepts... I thought it's obviously not explicit enough in our training. Perhaps I got that understanding from professional development but also from doing it and seeing the difference. I definitely think it's from experience... The other thing I think that's helped me is working with physios - you probably have (developed) a greater awareness of the body, core strength and postural stability. (Participant 15)

A participant who had recently graduated as an occupational therapist commented that they had developed the knowledge and skills from their studies, experience and supervision:

I have supervision every fortnight and I get a lot of strategies from her, she's fabulous. She gives me ideas, strategies and a bit of confidence. I still do have a lot to learn. I have an undergraduate degree in exercise health and science. So my previous knowledge in health and exercise and the importance of it has helped shape my opinion of why it's necessary. So that's provided me with some knowledge but I wouldn't say expertise... It's a bit from that (OT Master's degree) and a bit from my undergraduate degree as well. Definitely from my practicums that I've completed with children. (Participant 8)

Access to resources

Similar to Part One, access to resources for promoting children's PAL in Part Two incorporated the physical resources and equipment participants required as well as their having adequate time and funding for such health promotion activities. Access to resources also encompassed participants having supportive workplace values and structures as well as managers and colleagues who supported participant's activities to promote children's PAL. Almost all participants agreed that having managerial and collegial support assisted their involvement in promoting children's PAL, although for some participants it was both an enabler and a barrier. For example, one participant commented that having managerial support was an enabler to promote the PAL of all children in the school:

Definitely having managerial support. So if the school is on board then they can recognise the need. I think it would be very hard if you had a principal who was very pro technology and neglected or was unaware of the need for it... I definitely have that support base. (Participant 15)

A couple of participants commented that having collegial support, in particular from physiotherapists, improved their ability to promote the PAL of children. For example:

Our Physios help me. They are a very strong advocate for (active) play.

The same participant went on to say:

If I ever have any really tricky movement things or I notice their movement patterns are unusual I can very easily access experienced physiotherapists (who are) happy to point me in the right direction for information, or come on a visit with me or take a referral to check it out. (Participant 4)

Some participants identified that their promotion of children's PAL is enabled by intervention not requiring a lot of physical resources. For example, when asked whether a lack of resources was a barrier to their promoting PAL to children, many disagreed, with four reflecting that few resources were required. For example, one participant commented that access to knowledge was more important than resources:

Lack of resources – I think if you've got a good understanding of what is out there in your community I don't think that's a barrier (Participant 25)

Another participant commented that there were resources available on the internet:

In terms of resources I don't think it's that critical. You can hand out flyers that are accessible for free with reports, with ideas that are free for families to do. (Participant 15)

One participant who did not promote children's PAL commented that they did not think this was due to an inability to access resources, although their comment suggests this may be an issue for some families using occupational therapy services:

I don't think it is. I see promoting it as encouraging and verbally talking to parents about what's available and encouraging them to get their kids involved in things. So I

wouldn't see myself as running an afternoon activity for children. It may be parents' personal finances could affect it. (Participant 16)

4.14 Barriers

Participants were initially asked what 'gets in the way' of them promoting the PAL of children. Following their response, participants were asked to reflect on some of the possible barriers identified in Part One, namely having a heavy clinical workload; promoting children's PAL not being a clinical priority; lack of funding and resources; and a lack of recognition of occupational therapists' competency in this area. Participants' responses were then categorised into a number of subthemes; these were subsequently clustered into 5 overarching themes: promoting children's PAL not being a clinical priority; a lack of recognition of occupational therapists' competency in promoting children's PAL; a lack of managerial and political support for primary prevention activity; a lack of expertise; and a lack of resources. Subthemes that related to environmental elements rather than individual factors included client priorities; public and political preference for individual care services; a shift towards an individual treatment-focussed model for health services; a lack of suitable space and programs in the community and a lack of family leisure time. Themes and subthemes are listed in Table 4.20 above, and are discussed in more detail below, with reference to the framework by McLean et al. (2005) which identified knowledge, skills, commitment and access to resources as necessary to performing a health promotion role.

Promoting children's PAL not being a clinical priority

Many participants initially identified organisational and parental priorities as impeding their capacity to promote children's PAL. Indeed, issues around prioritising health promotion activity amongst participants manifested itself in different ways including, clinical, parental, organisational and political priorities. Competing priorities, overlapping with an awareness amongst clinicians of finite resources, emerged as common themes in the interviews. For example, when asked what got in the way of promoting children's PAL, one participant replied:

If the parents do not consider it an area of concern, I probably wouldn't go there. I know within child development services there is much discussion that access to services

are finite to our clients and therapy is not going to be ongoing. So if it is not a goal for the family, as clinicians you may not have the time. You may have the eyes to see it but if it's not a concern you are not going to go there. (Participant 25)

This recognition of working within tight parameters which limited occupational therapists' capacity to focus on promoting the PAL of children, was further emphasised by another participant. When asked what got in the way of promoting children's PAL, their reply revealed a perception that it can be difficult to justify primary prevention activities to the public when comparing it to the need for individual secondary care services:

I think it's probably competing priorities. Child development service tends to be more based in the medical model. What strikes loudest is kids that don't get services and if we are perceived to be out playing games and having fun. Sometimes to the untrained eye and to someone who's missing out on a service or thinks they need more it's really hard to balance out with them without sort of trying to break it down into the preventative and community development type of discussions. So for us the competing priorities and probably resourcing. And also giving permission to do this – recognising the value of it. (Participant 23)

This perception of a connection between organisational commitment to clinical priorities and limited resources is also highlighted by another participant, working in the disability sector. This participant commented on the connection between organisational and client goals when initially asked about what impedes their involvement in promoting children's PAL, as follows:

Now that I am working in the area of behaviour it has to be related to their goal. Even though it might be something that they would benefit from, it's not about what we think is best. It needs to relate to the (target) behaviour. If it (increasing physical activity) does, then it is part of their program.

The participant later went on to explain how addressing clients' goals relates to resourcing of the program:

It's just that the program I am in doesn't relate necessarily to specifically recommending physical activity. If it suits the (child's) program, it's fine as then it's part of funding and my time. (Participant 21)

A participant new to occupational therapy commented on some of the challenges to promoting children's PAL, and feeling credible with parents who may not be concerned about their child's physical activity level:

So if the parent's concerns are mainly around the child's handwriting and I'm saying maybe it's to do with their poor posture and core control and they need to do more activity, the parents might not take it on board as it doesn't look like it's specifically related to the concern at hand. (Participant 8)

The overlapping nature of organisational and parental priorities was also referred to by a participant who did not promote children's PAL. When asked about managerial and collegial support for promoting children's PAL, they commented:

I think we probably don't talk about it very much. We are very family centred. It depends on what parents bring up as their goal and what's important to them. So, I think it is an area that we probably just miss. I think if we did some promotion and then talked to our management they would definitely encourage it. Currently it's just something that's missed here. (Participant 16)

The participant later discussed doing some physical activity with children to meet sensory processing and social inclusion needs, identified as priorities for occupational therapy within their disability services organisation. When asked whether this therefore promoted children's PAL, the participant expressed some doubt:

I don't think I do it with younger children. More the school aged children for social inclusion, especially years 2-4 level, which is a lot of my caseload. From a sensory perspective I don't think we probably do enough. We will start a session if they need it for regulation – we might jump on a trampoline outside – before we come and sit at the desk top. So I personally don't think it's enough for a physical activity health and wellbeing point of view. (Participant 16)

As noted by Participant 4 in the enablers section above, the focus for occupational therapists in some areas can be narrow. A participant who worked as a private practitioner also commented on occupational therapy reports received from other therapists that indicated a narrower focus on traditional occupational therapy areas of fine motor and sensory processing as follows:

I don't know if the CDCs (child development centres) are on board with sharing this information with families or if perhaps the physios are more involved. Some of the reports I get through from OTs might talk about proprioception and heavy work activities but not just moving. (Participant 15)

Lack of recognition of occupational therapists' competency in promoting children's PAL

While the participants accepted that promoting the PAL of children was a legitimate part of their role, their commitment to this role was mediated by a belief that other health professionals may not necessarily share this view. In addition, with managers and colleagues helping to define the roles of different disciplines, access to necessary resources and structures and funding for occupational therapists to promote children's PAL may be impacted. Participant 15 above touches on the issue of recognition of occupational therapy competency, in relation to physiotherapists perhaps having a greater involvement in promoting children's PAL. Two other participants also commented on this being an issue for other occupational therapists, and three participants identified it as a concern for themselves. For example, a participant in a child development service reported:

It's still that traditional – if there's a movement issue that's a physio thing. If there's a fine motor issue – that's an OT thing. And sensory is seen as OT rather than physio. There's still that dividing line. (Participant 4)

Both of the participants not involved in promoting children's PAL commented on the restricted perceptions of the roles of occupational therapists and physiotherapists. For example, a participant in disability services reported:

I do know what to promote, good ideas from a sensory point of view. I work in an interdisciplinary team with physiotherapists, social workers, psychologists, speech therapists. I guess it's that role definition. What's my role and what's the physio role. I see in working with children with disability and physical education I see it as a bit more of a physio perspective. But for a lot of the kids then physios not involved so then it commonly gets missed. (Participant 16)

Similarly, the other participant not involved in promoting children's PAL reflected on perceptions by the organisation and occupational therapy profession of occupational therapists' limited competency for promoting children's PAL:

I don't think it is recognised because we do say it's a physio issue. But reality is depending on how you view the same thing it's not really a physio issue. It's just that we want to prescribe and make it. Also it depends on what your team dynamic is. Yes, I don't think we have a high perception of what we can offer. (Participant 23)

The participant went on to describe a need for increasing the recognition of what occupational therapists can offer with regard to health promotion, as occupational therapists can be reticent to promote their own expertise as follows:

We are quiet achievers. But we are not all things either and I think this needs some pioneering in this area. We do all the disability stuff but we don't do all the ability stuff which is just as core in the performance model and occupational performance.
(Participant 23)

Furthermore, a lack of understanding of occupational therapists' skill was indicated by one participant, who referred to clinical psychologists having the greater role in promoting children's PAL in their organisation. When asked about managerial and collegial support for promoting children's PAL, this participant reported:

One of the difficulties I face mainly in regards to collegial and managerial support is that they mainly look towards clinical psychologists to run the activities. They haven't really picked up on the OT role. They are happy that there is an additional person willing to go out and do it but it could be a really big part of my role. They more see it as a clinical psychologist role. (Participant 12)

A lack of managerial and political support for primary prevention activity

Limitations in managerial support for occupational therapists promoting children's PAL have been referred to in the above sections in relation to clinical priorities and recognition of occupational therapy competency. In this context, managerial support can be seen to particularly impact upon occupational therapists' commitment and access to resources to perform an effective health promotion role. When participants reflected on how managerial and collegial support had enabled their involvement in promoting children's PAL, some noted they were not proactive in their support. Both of the participants who were not involved in promoting the PAL of children reflected on the limits of managerial support, with one commenting on the strategic planning required to direct clinical priorities as follows:

I think it (permission to promote children's PAL) needs to come from a strategic level and also a local management level... So someone in the (local area) needs to say look, physical activity is a new priority for us because of obesity, chronic disease. We know all the literature behind that. So how do we go about promoting it and then you need

to start looking at dedicating a percentage of your time to it, in partnership with others and the health promotion team. So that real integrated approach. So that's where the leadership needs to come from. From a local level – my level- it comes from me and I'm trying to say as a new person for the parents that we can do things in many different ways. (Participant 23)

In addition, one participant working as an occupational therapy supervisor reflected on the limits to which managers prioritise primary prevention activities such as the promotion of children's PAL:

I think management are very in support of clinician's role in supporting parental goals. I think that's a big push from management. I wouldn't suggest that support goes much further than that. So, I think it depends a lot on clinician's experience as to whether or not they will go down that path or not. I'm the coordinator in the department. If it comes up in supervision, we will discuss that and support them as they explore that area further. I might direct them towards community resources they may be able to direct carers along to. Other than that, probably not. (Participant 25)

Both participants who worked for child development services reported a lack of managerial support for occupational therapists conducting health promotion activities with all children in the community. For example:

It would be great if we could. But going out to the schools and having those discussions – it is felt that is not the best use of our time in that capacity anymore, it's more assessing kids. So that real community development that CDS (child development service) used to be well known for has gone to the wayside. I remember when I first started I would visit schools and give talks. Now it's teacher workshops once a year if at all.

Moreover, when asked where the change in service delivery was coming from, the participant highlighted a management driven shift from a population level, preventative approach towards an individual treatment-focused medical model in funding and delivery of health services:

I think it's management. Health services in general are being put under the spotlight. It's down to money. They look at services that look the most effective. So that

preventative goal that we used to do, those services don't appear to be valued as highly as assessment. This is a shame as CDS (child development services) could have a preventative role by educating the community about child development. Rather than giving individual strategies, by giving universal strategies you could reduce the referrals. (Participant 25)

Similarly, the other participant who had worked within a child development service for many years reported a shift away from primary prevention activities:

It's a management position that we no longer have capacity to promote play and active play is a big part of that for young children. But I'm not allowed to do any of those talks. I used to go to mothers' groups and give sessions on all sorts of play including active play. But management now has restricted that we don't do that anymore. (Participant 4)

As with Participant 25, this participant observed a shift away from primary health care had limited their capacity to promote PAL with clients:

So we were quite a medical model and then we became a primary health care – get out in the community, train people up, spread the message far and wide... Now it has swung back right the other way. Assess, give a brief intervention and (discharge). It's a bit depressing. I used to love doing that. (Participant 4)

The difficulties of implementing primary health care initiatives were also described by a participant working in rural WA. This participant described the limitations caused by funding and evaluation of health services being based upon activities for individuals rather than communities:

I believe in community development. I believe in community involvement. We are not just therapists doing technical stuff we are part of the community and part of the stakeholder group. I try to facilitate it but we still have limitations so we have to be careful that WACHS (WA Country Health Service)/WA Health is a little bit unsure about all this these days. Although we talk about the model of primary health we have difficulty defining it as it doesn't always lead to an occasion of service. So it's a tricky environment. Its activities/inputs approach rather than looking at longer term and outcomes. (Participant 23)

Lack of expertise

Overall, as noted in the previous discussion on enabling factors, participants involved in promoting children's PAL confirmed they have confidence in having the necessary knowledge and skill for promoting children's PAL. However, two participants also commented that they are not necessarily experts in the area, with one commenting that physiotherapists may have more applicable knowledge. For example, when asked if they had the necessary skills to promote children's PAL, a participant with many years of occupational therapy experience reported:

As an OT you are looking out for it anyway but I recognise that a physiotherapist may have even more knowledge in that area.

The participant went on to say:

I think I have a good eye to identify the concerns. I've got experience to direct parents to appropriate activity. Am I an expert? I don't know. I wouldn't consider myself an expert. I haven't done any study in the area but it's my general observations over the years and chatting with other parents as well. (Participant 25)

Interestingly, both the participants who were not involved in promoting children's PAL reported some gaps in knowledge and skill necessary for promoting children's PAL. For example, when asked if they had the necessary knowledge and skills, one of the participants with many years of experience reported:

I feel comfortable that I have most of that required and I wouldn't be doing it alone I would be working in partnership in the model I would be doing it in.

When asked about an awareness of evidence supporting promoting children's PAL, the participant reported:

I'm probably not that abreast of it but I could find whatever I needed to find, I'm masters qualified and have done a fair bit of research. Should we take it on as a goal I would be confident that we could find it and confident that we could network and come up with an agreed approach that would be based on the best evidence too. (Participant 23)

The other participant not involved in promoting children's PAL was clear in reporting that the most significant barrier to their involvement was lack of knowledge of the amount of time children should be physically active. When asked what would assist their promotion of children's PAL they commented:

It's a lot about knowledge. I personally have no idea how much kids should be doing these days. Any information about any community groups or the sporting groups around in each area, more information on the kid's sport... But mostly how much they should be doing. I always encourage it from a social aspect or co-ordination or other point of view. I work with children with disabilities. Not knowing how much they (all children) should be doing. Then we can encourage parents and spread the word.

(Participant 16)

The participant went on to report they were also unaware of the evidence that would support promoting children's PAL but that they did have some of the necessary skills to implement interventions. When asked what impeded intervention to promote children's PAL, the participant reported the significance of knowledge once again, as well as commitment:

Knowledge and actually thinking about it. I guess knowledge around the encouragement from the healthy outlook and maintaining weight and strength. We look at it from different points of view, social inclusion or the sensory point of view.

(Participant 16)

In addition, three participants reported lack of knowledge amongst parents can be a barrier to their promotion of children's PAL. For example, a participant reported:

When I asked if they go to the park they said no they do not take him outside. They do go to a playgroup. She was asking if I thought she should take him outside and play on the grass. "Yes I do". So it was a complete lack of understanding that that would be a good thing for a small child to do to have those sensory experiences of sand, grass, sun, dirt. That sort of exploration. I don't come across that too often. I do find some families don't see the benefits of those outdoor active experiences. It is a big concern.

(Participant 4)

Another described difficulty in communicating kindergarten children's screening test results and recommendations to parents, including the need for increasing their child's physical activity level:

Numbers of children had really poor strength and motor skills. I recommended that up to one third would benefit from therapy. Because they weren't involved in the process the parents didn't understand it and found this information challenging. They just need to know that their children need to sit less and move more. But they probably hadn't seen anyone since the 18-month health screen. I think people are pensive about telling parents that their child is having difficulties. (Participant 15)

This participant also identified that limited awareness amongst teachers of children's need for physical activity acted as a barrier:

Lack of understanding in the community or amongst teachers is also a barrier. They say that that is the way we are going – it all being about technology and they don't know how to balance that with broader skills for life or best practice guidelines for technology for children. (Participant 15)

Lack of resources

As noted above, a lack of resources overlaps many other barriers to occupational therapists' involvement in promoting children's PAL. In this section the issue of resources, encompassing space, time and funding are particularly explored, in terms of how they influence some occupational therapists' promotion of children's PAL. When initially asked what impacted upon their involvement in promoting children's PAL, both participants working in hospitals reported that space and safety concerns in a hospital were barriers. For example:

In terms of inpatient - lack of space and safety can often be an issue for mental health clients. Even though children want to engage it can be tricky to identify activities or locations where we can do activities that are safe enough for their current mental space. (Participant 12)

Another participant reflected on the differences between working in private practice and the hospital as follows:

I sometimes wish I had a bigger gym area (in the private practice) to show the variety of stuff. The hospital is very restricted for space. It is also much more safety conscious in the hospital. There is a little bit more flexibility if you are a private practitioner. (Participant 5)

Issues relating to both physical space and family time restraints were also raised as barriers. For example, when initially asked what impacts their ability to promote children's PAL, one participant working in the community reflected on both the physical space available to families and their time, as follows:

I think parents, in the sense that parents are busy now, so even though sometimes I get to visit a family they are structuring it so they come home from work early or leave for work late. They are working or they are busy. Sometimes they haven't got as much time as they'd like to spend walking to the park. Sometimes the home environments that I am visiting more and more have very little space and not very appropriate space for young toddlers. So you've got your small paved patios and not much else to move about in. The change in how people are living with bigger houses and no more outdoor spaces. They often have a play room that's set up. You feel like there's not enough space in a room. I personally would like to just be outside. I think there are less opportunities to have access to a larger outdoor space. Parents go to Gymparoo or go to playgroup and ... are looking for more structured experiences rather than integrating it into something we do every day. (Participant 4)

Issues relating to a lack of community programs was raised as a barrier by a couple of participants. For example, one participant working in rural WA noted:

Other barriers include being in a rural location and the activities available and the weather. There might be a community social sport but it's not available as regular as it might be in the city and might clash with things. There aren't as many options as well – there might not be an alternative that the child likes. (Participant 8)

Similarly, a lack of community programs for people with a disability was raised as a barrier by one participant working in disability services:

There's a big miss in the community for modified sports. So, sporting groups for people with a disability, where they can't go to the general sporting club because they can't keep up; whether it's physical or intellectual. (Participant 16)

Over half the participants also agreed their own lack of time or a heavy workload impacted upon their involvement in promoting children's PAL. This was an issue for those working in a range of sectors from hospital to community-based services. For example, one participant commented that work hours impacted upon their ability to promote children's PAL:

My work hours, 8:30-4:30, and school is 8:30-3:30 so unless I want to work late, we don't really work in schools, there isn't a lot of time after school (to promote physical activity). (Participant 8)

Conversely, one participant based in a school disagreed that a heavy workload impacted upon their capacity to promote children's PAL. As the following comments suggests, for her, knowledge and commitment are more important than having more time:

A heavy clinical workload probably gets in the way if you don't understand the importance of it (physical activity). I think this is a tool for a heavy clinical caseload. I think if you have a greater understanding and know where to access the resources (it can be time effective)... I think perhaps we are not using it (physical activity) as a tool. It reduces the pressure on the families as well. I don't have to tell my families to sit down for half an hour and do a fine motor game; I'm telling them to go out and go to the playground after school or to go on the trampoline. (Participant 15)

Another participant working in management responded by reflecting upon the time and political pressures placed upon the health service as a whole. The participant's response reveals the connection between resources and public and political pressure for individual care services which ultimately leads health services toward a medical model of practice:

It becomes rather political after a while. You can't carry waitlists because people waiting 6-12 months reasonably and rightly so complain. So it comes back to the resourcing level. You are caught between the devil and the deep blue sea. We know that this (waitlists) can happen and people complain but the organisation gets scared of it because it highlights the gap. So we work harder to do it so we keep burying ourselves (in work) and doing the same things over and over again without looking at

how we could break the cycle a bit and be more in that preventative model and self-directed model. Not everything gets the opportunity to bring itself up as we are so busy trying to avoid what is considered an adverse event. (Participant 23)

This participant similarly reflected upon the lack of funding for preventative services as follows:

I would love to see us look at it. I know there was some talk about leisure with Ann Passmore when I went through (university). There was a lot of focus on that. I suppose we sort of dropped that ball. It hasn't translated into someone wanting to pay for that service or engage an OT in that service. We've just got to go back to looking at occupation and occupational roles and purposeful activity. (Participant 23)

Indeed, a lack of funding was identified as a barrier for a number of participants, with four agreeing that it impacted upon their capacity to promote children's PAL. Issues around funding included limited funds to purchase equipment to promote physical activity amongst children, as well as minimal investment in broader preventative services, and limited financial resources for occupational therapy services in general. For example, the two occupational therapists working in a hospital setting reported:

Funding is (a barrier) for a supply of sports equipment. It is hard to get funds for new stuff. (Participant 12)

There are always restrictions in the hospital of how much money they have to employ people. But they do try to expand as much as possible. (Participant 5)

Another participant reported that providing group sessions to promote physical activity was not financially viable in their not for profit organisation:

Funding such as group sessions I'd like to run to work on social skills in a physical activity session aren't really feasible. (Participant 8)

Limited funding meant that at least one participant was self-funding their health promotion activities:

(I do it) off my own back. I know there are some grants available but it's another thing that I've got to organise and I don't need the extra hassle. (Participant 5)

4.15 Summary of research findings

This chapter presented the results of Part One, the online questionnaire, and Part Two, in-depth interviews. A key finding from Part One was that the majority of participants (81%) promoted the PAL of some of the children with whom they had worked individually, in the month prior to completing the questionnaire. Of the 2165 children with whom Part One participants had worked, 875 children had been supported to increase their PAL. In addition to working with children individually, almost half (49%) of Part One participants worked with all children in a community setting. Of these participants, half (50%) implemented activities to promote all of the children's PAL, in the month prior to completing the questionnaire.

Part One participants rated their capacity to promote children's PAL positively. The strongest responses were in the knowledge, skill and commitment areas where the average ratings corresponded to agree (3.2, 3.1 & 3.0 respectively). Access to resources to promote children's PAL was rated lower (2.7). In the area of commitment, one measure, that of recognition of their ability to promote children's PAL, notably rated close to neutral (2.6). Also within commitment, promoting children's PAL being a priority, had the largest standard deviation (0.8) of all capacity items. With regard to access to resources, sufficient funding rated lowest (2.3), with adequate time and access to necessary resources/equipment both rated close to neutral (2.6).

Comparison of ratings by Part One participants revealed that those who promoted the PAL of individual children and/or all children in a community setting, rated their capacity in knowledge, skill, commitment and access to resources higher than those not involved. When comparing the ratings of participants who did and did not promote the PAL of individual children, the largest difference was for recognition of their competency for such health promotion activity (2.7 compared to 2.1). In addition, when comparing participants who did and did not promote the PAL of all children in a community setting, the largest difference in ratings regarded having access to necessary resources/equipment (3.1 compared to 2.3).

When Part One participants chose their most significant barriers to promoting children's PAL, a heavy clinical workload was the most frequent choice (54%); followed by it not being a clinical priority (43%); inadequate funding (41%); inadequate resources (38%) and lack of recognition of occupational therapy competency in the area (38%). When comparing responses of participants who did not promote PAL to individual children and/or all children

in a community setting to those who did, it was observed that the former reported more frequently barriers of a heavy clinical workload and it not being a clinical priority.

Key findings from Part Two, in-depth interviews, identified factors acting as enablers and barriers to participants' involvement in promoting the PAL of children that related to knowledge, skill, commitment and access to resources. Participants particularly emphasised the importance of commitment to promoting children's PAL, with the themes of holding a belief in the importance of physical activity for children and the belief that promoting children's PAL is applicable to the role of an occupational therapist emerging as key enablers. Additional themes of having confidence in their skills and knowledge and having supportive managers and colleagues were also identified as enablers. Prominent barriers also related to commitment, including conflicting clinical priorities and lack of recognition of occupational therapists' competency for promoting children's PAL. Themes were also identified related to limited access to resources, including a lack of funding, time and physical space. Barriers relating to resourcing and commitment were often associated with a lack of managerial and political support for primary prevention activity, and a concurrent return in recent years to a medical model of service provision. Some barriers regarding a lack of expertise in promoting children's PAL were also identified.

Chapter 5: Discussion and Conclusion

5.1 Introduction

This chapter addresses the research objectives by bringing together the study's findings and literature. It commences with an overview of the research design and a review of the profile of participants in this study, viz paediatric occupational therapists in WA. Their involvement in promoting children's physical activity levels (PAL) at both the individual and community level is explored, followed by an analysis of their capacity for promoting children's PAL. Common enablers and barriers to paediatric occupational therapists' involvement in promoting children's PAL are then identified. To enhance paediatric occupational therapists' promotion of children's PAL, this chapter provides recommendations for occupational therapists, their managers, and health promotion practitioners. To complete this thesis, a discussion of the significance of the study as well as its limitations and areas for further research are presented, followed by the conclusion.

5.2 Overview of the research design

The aim of this study was to develop an understanding of occupational therapists' involvement in, and capacity for, implementing health promotion activities to promote the PAL of children. No other studies have been identified that investigate practice and capacity in this area. The study population was occupational therapists working with children aged 0-18 years in Western Australia (WA).

A mixed methods design was employed to enable the different research questions to be answered using the most appropriate tools. Part One, self-report questionnaires, was designed to collect cross-sectional quantitative data of participants' involvement in and capacity for promoting the PAL of children, as well as barriers to their involvement. Part Two, in-depth interviews, was designed to illustrate and verify the findings from the initial quantitative phase of the study, and to gather more information on participants' views regarding barriers and enablers to promoting children's PAL. By drawing upon both quantitative and qualitative research methods, a more comprehensive understanding of occupational therapists' involvement in, and capacity to, implement health promotion activities to promote the PAL of children has been developed.

5.3 Profile of participants

The majority of participants were female and held a Bachelors degree as their highest qualification in this Western Australian study of paediatric occupational therapists. This is a picture which is consistent with other Australian studies conducted with paediatric occupational therapists (Baker et al., 2012; Lyons et al., 2011; Rodger et al., 2005; Ziviani et al., 2014). The vast majority (91%) of all registered occupational therapists in WA and nationally are similarly female (Australian Institute of Health and Welfare, 2017). Ziviani et al. (2014) found the average age of Australian paediatric occupational therapists to be 35 years, with an average of 10.5 years of experience. This is consistent with the participants in this research, although a slightly higher average of 13 years of experience was observed.

In contrast to the findings of an Australia-wide study, which found paediatric occupational therapists worked most frequently in the community (36.5%) (Rodger et al., 2005), participants in this Western Australian study worked most frequently in private practice (36%). Other common work settings were community health (27%) and disability services (26%). This finding has implications for the delivery of public health messages with 71% of participants working for non-government organisations. Of particular importance will be partnerships between WA Health and non-government and private sector organisations to enhance community-focussed programs that promote the health of all Western Australians, as identified in The Western Australian Government's WA Health Strategic Intent 2015 – 2020 (Department of Health Western Australia, 2015).

With regard to the children with whom occupational therapists work, it has been observed that paediatric occupational therapists work with a wide variety of ages (Lyons et al., 2011; Rodger et al., 2005) and a wide variety of diagnoses (Baker et al., 2012; Ziviani et al., 2014). Likewise, participants in this study worked with children aged 0-18 years who experienced difficulties in many areas, such as sensory, movement, cognitive, and emotional functions. As expected, most children with whom participants worked typically had difficulty functioning in their everyday occupations (95%), and thus were at risk of failing to participate in adequate daily physical activity. Packer et al. (2006) established that Perth children and adolescents with a disability participate in less physical activity than their peers and spend more time using electronic media. They are therefore vulnerable to developing preventable chronic disease.

This study confirms that paediatric occupational therapists in WA are ideally positioned to support vulnerable children with specific health promotion strategies related to increasing children's PAL, as recommended in the WA Health Promotion Strategic Framework 2012–2016 (HPSF) (Department of Health Western Australia, 2012).

5.4 Paediatric occupational therapists' involvement in promoting the physical activity levels (PAL) of individual children

The majority of participants (81%) were found to have recently promoted the PAL of at least some of the children with whom they provided an individualised service. No other studies have been identified to enable analysis of how these figures compare with other jurisdictions. Notably, however, this is higher than the 61% of community-based occupational therapists in Victoria who engaged in health promotion activities with a range of population groups (Quick et al., 2010), and the 65% of occupational therapists in a regional area of NSW who provided physical activity advice to adults who were obese (Lang et al. (2013). The high percentage identified in this study may be due to a number of factors, including the close connection between promoting the PAL of children and occupational therapists' role in addressing the domain of motor skills (Cotelleso et al., 2009; Rodger et al., 2005), and the needs of children with motor impairments (Kolehmainen et al., 2015). That this study provides evidence that such a high proportion of paediatric occupational therapists in WA are involved in promoting the PAL of vulnerable children is very encouraging. However, quantitative analysis revealed that of all the children receiving individual occupational therapy services from participants in this study, only 40% (N=875) were supported to increase their PAL. Thus, over half of the children were not recently provided with this support and may remain vulnerable to developing unhealthy habits of sedentary behaviour. There is potential, therefore, to further increase the numbers of children in WA whom occupational therapists support to increase their PAL.

When considering the type of health promotion activities in which occupational therapists engage, Flannery and Barry (2003) found Irish occupational therapists' activities most frequently related to the Ottawa Charter for Health Promotion action areas of creating supportive environments and developing personal skills. Participants in this study reported using, on average, a combination of four health promotion activities to promote children's

PAL which similarly related to these areas. For example, to create supportive environments, participants implemented strategies to increase the levels of physical activity embedded into a child's daily routine (81%); encouraged adults to place limits on screen-time for a child (65%); and modified activities or environments to enable a child's participation in physical activity (57%). To develop personal skills of the child and/or caregiver, participants supported a child's development of skills to participate in physical activities (76%); provided education regarding the benefits of physical activity (68%); and supported a child's motivation to participate in such activities (57%).

The combination of activities reported by participants provides evidence of occupational therapists broadening their focus from developing children's motor skills, to also consider environmental factors that may support children's participation in physical activity. This differs from the findings of Kolehmainen et al. (2015) that clinicians often focussed on the child's motor impairment and basic motor activities in assessment, rather than considering broader environmental factors that may impact upon children's participation in physical play and leisure. The most common health promotion activity, that of supporting more physical activity to be embedded into a child's daily routine, is consistent with recommendations for occupational therapists to encourage healthy lifestyle behaviours in childhood (Cahill & Suarez-Balcazar, 2009; Pizzi, 2013; Poulsen & Ziviani, 2004; Ziviani et al., 2010) and a balanced pattern of occupational engagement (Baxter & Porter-Armstrong, 2012; Holmberg & Ringsberg, 2014; Scaffa et al., 2008). This health promotion activity draws upon occupational therapists' expertise in providing individualised support to children experiencing functional difficulties to promote habitual engagement in healthy occupations (Occupational Therapy Australia, 2011).

Creating supportive environments and developing personal skills relates to common interventions used in paediatric occupational therapy, that of providing education to caregivers and promoting skills for activities of daily living (Rodger et al., 2005). These activities were reported in both parts of this study, with participants taking a broad view of activities of daily living to include play, school work and leisure. The activities reported by participants are consistent with recommendations that occupational therapists assist children they work with to meet physical activity guidelines by supporting age appropriate play development, and delivering family education and motor development intervention

programs (Dwyer et al., 2009). In addition, Part 2 revealed another common intervention used in paediatrics, that of sensory integration/sensory processing (Rodger et al., 2005) to assist children with self-regulation, was likewise identified as a means by which to promote children's PAL. This is consistent with the assertion by Lau et al. (2013), that activities often used by paediatric occupational therapists to target traditional goals in the areas of motor coordination, attention and self-regulation, may be leveraged to promote children's participation in a healthy, active lifestyle.

Participants reported implementing some of the evidence-based health promotion strategies to promote the PAL of individuals recommended by Reynolds (2001), such as providing education regarding the health benefits of physical activity and supporting individuals to overcome barriers to physical activity. However, only 8% incorporated providing education regarding the Australian guidelines for physical activity, potentially indicating a gap in their knowledge and practice. In addition, just under half (43%) incorporated assessment of children's habitual levels of physical activity and sedentary behaviour into their health promotion practice, as encouraged by Dwyer et al. (2009). Whilst the purpose of occupational therapy assessment of children is to compile comprehensive information about a child's participation in priority areas as identified by the family (Dunn, 2011), in practice Australian paediatric occupational therapists often focus more on body structures and function than participation (Rodger et al., 2005). Therefore, many caregivers may be unaware of the extent to which their child is meeting Australian guidelines for physical activity, which may lessen the overall effectiveness of occupational therapists' interventions to promote children's PAL.

5.5 Paediatric occupational therapists' involvement in promoting the physical activity levels (PAL) of all children in a community setting

Almost half of the participants (49%) provided services and support for all children in a community setting, mostly in schools. Of these participants, it was observed that half had recently promoted the PAL of all the children. That is, one quarter of all participants delivered primary prevention activities to increase the PAL of all children in a community setting. Thus, this study provides evidence that a sizeable proportion of paediatric occupational therapists in WA are following the recommendations in the literature and using their skills to support all children to participate in healthy activities and environments (Maglio & McKinstry, 2008;

Persch et al., 2015; Pizzi et al., 2014; Rodger, 2010). There is potential, however, for this to be increased. No other studies have been identified to enable comparison of this specific proportion with other samples of paediatric occupational therapists. However, the result is comparable to the finding of Quick et al. (2010) that over half of health promotion activities conducted by community-based occupational therapists in Victoria were primary prevention activities. The reorientation of occupational therapy services to include community level health promotion activities is also indicated by recent occupational therapy models providing guidelines for their use with communities as well as individuals (Wong & Fisher, 2015) and case studies in the literature (Cahill et al., 2015; Maglio & McKinstry, 2008; O'Neil et al., 2012). Moreover, the findings of this study differ from that of Holmberg and Ringsberg (2014), who found occupational therapy practice has a narrow focus on individuals rather than systems or societies. It also indicates change from occupational therapy practice in health promotion in the past that mostly occurred at the secondary and tertiary prevention levels (Haracz et al., 2013).

Similar to promoting PAL in individuals, a combination of strategies relating to the Ottawa Charter for Health Promotion action areas of creating supportive environments, developing personal skills, and strengthening community action were utilised by participants to promote the PAL of all children in a community setting. For example, to create supportive environments participants supported more physical activity to be embedded into programs (79%) and encouraged adults to place limits on screen-time for children (42%). To develop personal skills of the children and/or members of the community, participants conducted programs to facilitate children's participation in physical activity (42%) and provided education about the benefits of physical activity (47%). However, only one participant reported providing education regarding the Australian guidelines for physical activity. In contrast to Irish occupational therapists whose activities were least often related to strengthening community action (Flannery & Barry, 2003), occupational therapists in this study may be involved in strengthening community action as 68% reported supporting programs that encourage children to participate in physical activity. For example, one participant reported that they had facilitated connections between families and a community group to encourage their development and implementation of an afterschool sporting activity, whilst others reported supporting schools and community groups such as playgroups,

a child care centre and a local sports club. There is evidence, therefore, that occupational therapists are following recommendations in the literature to expand into providing community level initiatives, such as supporting programs that encourage physically active lifestyles (Poulsen & Ziviani, 2004).

The activities identified in Part One and elaborated on in Part Two of this study, are consistent with health promotion strategies reported by Victorian community-based occupational therapists including capacity building, community development and advocacy (Wood et al. (2013). For example, during the in-depth interviews, occupational therapists who worked with all children in a community setting emphasised building relationships and providing education and advice to parents, teachers and community members to promote the health of all children in the community. It is evident, therefore that some occupational therapists are following recommendations to collaborate with members of the community to encourage children to participate in active lifestyles (Cahill & Suarez-Balcazar, 2009), and are reorientating their service to address factors impacting not only upon the ability of individuals but also that of communities to participate in healthy occupations (Wood et al., 2013).

Activities aimed at promoting the inclusion of children with varying abilities into the community were also reported, consistent with occupational therapists' skill in this area. For example, participants educated others to enable the participation of all children in physical activity (63%) and advocated for accessible activities and environments (42%) as recommended by Scaffa et al. (2010). Supporting the inclusion of children with a disability in community organisations, including sport, was a high priority for some participants working in disability services, as it supports children's engagement with the world and has long term benefits for social connectedness (Kolehmainen et al., 2015).

A significant finding in this study was that no participant reported being involved in primary prevention activities with communities influencing policy and urban design, as recommended by Haracz et al. (2013). Whilst this study will not have captured activities of occupational therapists working in non-clinical positions, nor infrequent activities, the finding is consistent with research by Flannery and Barry (2003) which indicated that Irish occupational therapists had little involvement in building healthy public policy. It is also consistent with the view that historically, occupational therapy has had little involvement and influence in health and wellness policy development (Hildenbrand & Lamb, 2013). Further investigation would be

required to determine whether occupational therapists working in other areas, such as public health, are involved in developing healthy public policy in WA, which is another key action area identified in the Ottawa Charter for Health Promotion.

5.6 Paediatric occupational therapists' capacity for promoting the physical activity levels (PAL) of Western Australian children

Reorientation of the health care system requires health workers to develop a focus on health promotion (Brooks et al., 2008; Lilley & Stewart, 2009). The focus of this study was on examining and comparing the individual factors required to deliver health promotion activities, identified by McLean et al. (2005) as knowledge, skill, commitment and access to resources. Varied views can be found in the literature regarding occupational therapists' willingness and competency for implementing health promotion activities (Holmberg & Ringsberg, 2014). Research with community-based occupational therapists in Victoria, found that whilst they believed health promotion was well suited to occupational therapy practice, the majority did not perceive they had sufficient knowledge or resources to undertake this role (Quick et al., 2010). Metzler et al. (2012) acknowledged that occupational therapists had some relevant core competencies, but purported that their role in health promotion required further research and collaboration with other disciplines. In contrast, Swedish occupational therapists were found to be confident in their competency for health promotion (Johansson et al., 2010); this is consistent with the positive ratings by participants in this research for knowledge, skill and commitment to promote children's PAL. These findings were verified during in-depth interviews which revealed a strong connection between promoting children's PAL and paediatric occupational therapists' expertise in promoting engagement in healthy activity (Baxter & Porter-Armstrong, 2012) and their common intervention strategies: parent education, supporting children's activities of daily living, and sensory integration/processing (Rodger et al., 2005).

Varied findings regarding occupational therapists' knowledge of health promotion can be found in the literature. In Australia, for example, the majority of community-based occupational therapists in Victoria did not perceive they had sufficient knowledge to undertake a health promotion role (Quick et al., 2010). However, research with Irish occupational therapists revealed that many had knowledge of preventative strategies,

although some had a lack of knowledge of formal health promotion principles (Flannery & Barry, 2003). In contrast, participants in this study rated their knowledge of both health promotion principles and strategies to promote children's PAL positively. The knowledge area that rated lowest was knowing the recommended amount of daily physical activity and screen time limits for children, which may partly explain the small percentage of participants involved in educating others regarding these guidelines. It is recommended that raising occupational therapists' awareness of Australian physical activity guidelines for children would increase their capacity to promote children's PAL and thus promote lifelong healthy behaviours.

Participants also expressed confidence in having the necessary skills for promoting children's PAL. The strongest ratings were for collaboration and communication skills, which were confirmed during in-depth interviews as skills integral to the role of paediatric occupational therapists. These skills are consistent with the Canadian Model of Client-Centred Enablement (CMCE) which reveals occupational therapists working with individuals and populations use a range of actions to enable occupation, including advocating, coaching, collaborating, consulting, coordinating, educating and engaging (Townsend & Polatajko, 2013). These skills are also integral to occupational therapists' recognised role in advocacy and liaison (Flannery & Barry, 2003).

Of the health promotion skills assessed in Part One, "building the capacity of communities to promote children's physical activity levels" was rated the lowest. As only half the participants in Part One worked with all children in a community setting, it is understandable that some may feel less skilled in this area. It does support similar findings, however, that occupational therapists may require further education to enable a reorientation from their traditional focus on developing an individual's personal skills, to macro-level initiatives for strengthening communities (Haracz et al., 2013; Wood et al., 2013).

Participants embracing their role in advocacy is further emphasised with the highest rated commitment item in Part One being "belief in and advocacy for increasing children's physical activity levels". This concept was likewise strongly supported in Part Two. Indeed, there is much consistency in research with occupational therapists that health promotion is perceived to effectively complement occupational therapy philosophy and practice (Flannery & Barry, 2003; Quick et al., 2010; Tucker et al., 2014). In addition, occupational therapists specifically

believe in the importance of physical activity, as indicated by the finding of Lang et al. (2013), that providing physical activity advice was the most common intervention used by occupational therapists in NSW to encourage weight management. A diversity in views regarding the priority of promoting children's PAL was, however, observed during Part One and Two of this study, with this item having the greatest variance of all capacity items in the questionnaire. Similarly, Australian occupational therapists have previously reported a culture of clinical work being perceived as more important than health promotion activity (Quick et al., 2010; Wood et al., 2013). Therefore, whilst participants' belief in the value of promoting the PAL of children is wide-spread, the importance placed on such activities varies and impacts upon commitment to incorporating it into practice.

A common perception amongst participants in Part One and Two was that other health professionals are unaware of occupational therapists' competency for health promotion activities. Similarly, findings in a study of Irish occupational therapists found over one third believed that other health professionals, as well as occupational therapists themselves, had a limited view of what they could offer with regard to health promotion (Flannery & Barry, 2003). The lack of recognition of occupational therapists' competency for health promotion is also documented within international and national literature (Holmberg & Ringsberg, 2014; Wood et al., 2013). Whilst this study provides evidence of occupational therapists' commitment to promoting the PAL of children, participants perceived their capacity to do so is limited by a lack of recognition of their health promotion competency amongst other health professionals.

In contrast to the positive ratings for knowledge, skill and commitment, satisfaction with resources to promote children's PAL was rated by participants just above neutral. Ratings for having the necessary funding, time and resources/equipment rated lowest. These findings are consistent with international studies that indicated a lack of resources, in particular time and funding (Flannery & Barry, 2003; Johansson et al., 2010), as well as managerial support (Johansson et al., 2009; Seymour, 1999) to be common impediments to occupational therapists' capacity for health promotion. Similarly, Australian occupational therapists have reported a lack of funding, time and support for health promotion work (Quick et al., 2010; Wood et al., 2013). However, in Part One of this study, satisfaction with managerial and collegial support was rated highest amongst the resource items, with most participants in

agreement. Further exploration during Part Two revealed mixed views regarding having the necessary managerial support. Mixed views were also expressed regarding the need for physical resources to support health promotion work, which related to the variety of work settings in which paediatric occupational therapists work. These mixed views are further explored in section 5.8.

In summary, participants generally held positive views of their knowledge and skill to promote children's PAL; however, many perceived this competency is not well recognised. Whilst there is a strong belief in promoting children's health by encouraging PAL, the priority occupational therapists place upon this work is varied. Occupational therapists are less satisfied with their resources for promoting children's PAL, in particular noting insufficient funding, time and equipment.

5.7 Enabling factors to paediatric occupational therapists' promotion of the physical activity levels (PAL) of Western Australian children

The compatibility between the values, philosophy and practice of health promotion and occupational therapy has been identified by previous studies as an important enabling factor supporting occupational therapists' commitment to participate in health promotion (Flannery & Barry, 2003; Quick et al., 2010; Wood et al., 2013). For example, the CMOP-E reveals a broad scope for occupational therapy practice that includes a focus on creating supportive environments to promote health, well-being and address inequalities (Wong & Fisher, 2015). Likewise, all participants in Part Two reported that promoting children's PAL is a legitimate part of the occupational therapist's role in paediatrics, whilst not necessarily the primary focus. Furthermore, evidence from this study reveals that participants shared a strong belief regarding the importance of habitual physical activity for healthy child development, and shared a willingness to advocate for this with individuals and communities. Their holistic perspective is consistent with the philosophy underpinning health promotion, where there is recognition that an individual's whole life and their social context influences their overall health and wellbeing (Holmberg & Ringsberg, 2014; Tucker et al., 2014).

The shared emphasis of both occupational therapy and health promotion on the role of the environment in supporting sustainable healthy behaviours (Haracz et al., 2013; Tucker et al.,

2014) strengthens occupational therapists' commitment to implementing health promotion activities. For example, occupational therapy models such as PEO (Christiansen & Baum, 1991) and CMOP-E (Townsend & Polatajko, 2013) represent a shift from a bio-psychological, individualised view of health to a more socio-ecological focus (Joosten, 2015), and address the "fit" between people and their environment in order to optimise occupational participation (Wong & Fisher, 2015). In addition, occupational therapists bring skills in analysing the relationships between individuals or communities, their daily occupations and the broader environment to make recommendations to promote health (American Occupational Therapy Association, 2015). A belief in the importance of the environment, as well as the need for occupational balance to promote health, were similarly found to be enablers for Irish occupational therapists' involvement in health promotion (Flannery & Barry, 2003). Likewise, many participants in Part Two perceived a connection between declining opportunities at home and school for physical activity, and children's presenting concerns. These perceptions were identified by some participants as underpinning their implementation of activities to promote children's PAL, such as creating supportive environments, as well as building the capacity of communities and educating caregivers. Accordingly, another factor identified in Part Two that enabled occupational therapists' involvement in promoting children's PAL was parents sharing a concern for their child in this area. This is significant, given that participants emphasised the need to follow a family-centred approach to service delivery which involves collaboration between families and therapists to develop goals and plan interventions (Hanna & Rodger, 2002).

Quantitative analysis highlighted the importance of commitment to enabling health promotion practice, with occupational therapists involved in promoting children's PAL on average rating it a priority, compared with neutral ratings on average observed in those not involved. Participant's experiences, both personal and professional, along with confidence in their knowledge and skill, contributed towards their commitment to promote the PAL of children. Furthermore, consistent with the finding of Lyons et al. (2011) that paediatric occupational therapists in Australia hold a positive attitude towards evidence-based practice, participants in Part Two revealed that their commitment to promoting PAL in children was strengthened by an awareness of the evidence showing its importance for motor and cognitive development (Dwyer et al., 2009; Salmon et al., 2014), physical health (Carter &

Micheli, 2012; Salmon et al., 2014) and psychosocial health (Salmon et al., 2014). This was reported by both experienced and inexperienced participants, and related to their confidence and perception of being viewed credibly by clients.

Participants' confidence in their competency for implementing individual and community health promotion activities to promote the PAL of children was evident in both parts of this study. Participants in Part One who were involved in promoting children's PAL rated their knowledge and skill higher than those not involved; however, overall, all cohorts rated their competency positively. These views are consistent with those of Flannery and Barry (2003), who suggested that knowledge and skill in preventative strategies of Irish occupational therapists' enabled their involvement in health promotion. Importantly, while the American Occupational Therapy Association (AOTA) confirms that occupational therapists have the basic knowledge required for health promotion, they also highlight the need for continuous learning (Scaffa et al., 2008). Reflecting this dynamic, participants in Part Two reported acquiring the necessary knowledge to promote children's PAL from their occupational therapy degree, as well as through their experience as an occupational therapist, clinical supervision and work in multi-disciplinary teams, in particular with physiotherapists. They also referred to drawing upon evidence-based interventions familiar to paediatric occupational therapists such as sensory processing, postural control and motor development to facilitate their promotion of children's PAL. This familiarity with appropriate interventions supports occupational therapists' assertion in this study that their knowledge and skill is an enabler to their health promotion activities. This finding contrasts with some other studies, such as Quick et al. (2010), who found the majority of community-based occupational therapists in Victoria perceived they had insufficient knowledge to satisfy the requirements of a health promotion role.

Confidence held by participants working with all children in a community setting in their ability to build the capacity of communities is an enabling factor in the implementation of primary prevention interventions. However, it was observed that participants in Part One, who were not involved in promoting children's PAL, rated their ability to build the capacity of communities and organisations as neutral, revealing less confidence in delivering primary prevention strategies. This is consistent with the perspective shared by occupational therapists in Australia working in primary health promotion, who expressed a need to acquire

further knowledge of macro-level initiatives, beyond the basic competency gained in an occupational therapy degree (Wood et al., 2013). This study provides further evidence of the benefits of further learning for enabling paediatric occupational therapists' implementation of health promotion strategies at the community-level, as participants who promoted the PAL of all children in the community held a graduate certificate or diploma more frequently (29%) than participants overall (9%).

With regard to resources, this study revealed that managerial and collegial support, along with workplace values and structures, were important factors enabling participants' involvement in promoting children's PAL. Indeed, satisfaction with these resources was observed to differ more than most other capacity items between those involved and not involved in promoting children's PAL. This finding is consistent with other studies that have found managerial and organisational support enable occupational therapists' involvement in health promotion activities (Seymour, 1999; Wood et al., 2013). Further exploration of managerial support in Part Two revealed that whilst most participants did believe that managerial support enabled their involvement in promoting children's PAL, some identified aspects of management that also impeded greater involvement – this is discussed in more detail in Section 5.8. Regarding collegial support, as indicated above, some participants believed their skills and interventions were enhanced by working with physiotherapists, due to their expertise in movement. Some participants in Part Two reported that they had developed their skills from working alongside physiotherapists and some reported that they had sought support from physiotherapists to meet the needs of children with complex movement difficulties.

In summary, participants identified a number of enablers to their involvement in promoting children's PAL, including its applicability to the occupational therapy role in child development and a belief in the importance of habitual physical activity for children. In addition, this group of occupational therapists shared a belief in their competency to promote the PAL of children. Satisfaction with managerial support was another important factor enabling their promotion of children's PAL.

5.8 Barriers to paediatric occupational therapists' promotion of the physical activity levels (PAL) of Western Australian children

There is much consensus in the literature that a significant barrier to occupational therapists' involvement in health promotion is having limited access to sufficient resources (Flannery & Barry, 2003; Seymour, 1999; Wood et al., 2013). For example, community-based occupational therapists in Victoria perceived they did not have sufficient time to discuss health promotion strategies with individuals, nor the resourcing required to become involved in health promotion activities (Quick et al., 2010). Likewise, findings from this study reveal the most common barrier to promoting children's PAL is a heavy clinical workload, reported by over half the participants in Part One. Significantly, it was reported as a barrier much more frequently by those not involved in promoting children's PAL, than those who did, which may explain in part their lack of activity in this area. This is consistent with other studies' findings that a core constraint to health professionals' engagement in health promotion is a heavy workload (Johansson et al., 2010), with a high demand for occupational therapy services squeezing out time for health promotion activities (Turcotte et al., 2015).

A frequent barrier, reported by over 40% of participants in Part One, was inadequate funding which can result in limited occupational therapy staffing and infrequent service provision (Cotelleso et al., 2009). An infrequent occupational therapy service is less likely than services of regular frequency to focus interventions on prevention rather than compensation, and also less likely to address multiple domains, including leisure and community integration (Cotelleso et al., 2009). Likewise, in Sweden it was found that funding restrictions lead to a lack of time and subsequent reduction in preventative interventions, as the more immediate needs of patients for curative care are prioritised by health care providers (Johansson et al., 2010; Johansson et al., 2009). Some participants in Part Two of this study perceived similar difficulties, observing preventative services attracted little funding or public attention, unlike waitlists for secondary care services. Qualitative analysis revealed inextricable links between political and organisational priorities, funding, and occupational therapists' heavy workload. The findings showed that occupational therapy service provision was reactive to political and community pressure to provide secondary and tertiary health care.

In addition to difficulties with limited funding for occupational therapy services and preventative services, qualitative data reveals funding and resourcing issues specific to promoting children's PAL. Of particular concern to hospital-based occupational therapists, is a lack of funding for appropriate equipment, and difficulties finding a safe, large area in which

to do physical activity. However, the issue of limited appropriate space is also a concern to community-based occupational therapists, with some identifying limited open space in families' yards and safe access to public spaces and appropriate community programs as additional barriers to promoting children's PAL. The impact of a lack of resources was particularly evident with participants working with all children in the community, with a large difference noted in ratings for having access to necessary resources and equipment between those who promoted children's PAL (3.1) and those who did not (2.3). These findings suggest that a lack of appropriate resources and equipment may have contributed to the latter group not promoting the PAL of all children in the community.

In addition to limited resources, data analysis revealed a low level of commitment was a barrier to participants' involvement in promoting children's PAL. Indeed, differences in commitment ratings were found to be greater than other factors when comparing those involved and not involved in promoting the PAL of individual children. Furthermore, the second most common barrier, reported by just under half of the questionnaire participants, was that promoting children's PAL was not a clinical priority. Significantly, this was reported as a barrier much more frequently by those not involved in promoting children's PAL, than those that did. These perceptions conflict with the HPSF, which identifies increasing Western Australians' PAL as a priority area to prevent avoidable chronic disease (Department of Health Western Australia, 2012). This study's finding is supported by other Australian studies which found a culture amongst occupational therapists of "clinical work" taking priority over health promotion (Quick et al., 2010; Wood et al., 2013). Likewise, recent research regarding promotion of children's participation in physical play and leisure found physical and occupational therapists frequently had a narrow focus on motor impairments and rarely considered broader environmental factors (Kolehmainen et al., 2015). That is, despite occupational therapists' salutogenic focus on promoting clients' health through participation in meaningful occupations (Holmberg & Ringsberg, 2014), research has found some occupational therapists rarely promote engagement in meaningful activity (Turcotte et al., 2015). Hildenbrand and Lamb (2013) therefore argue that occupational therapy professionals need to expand their approach and perceptions of what they can offer to enable a reorientation of services from a focus on deficits and limitations, to one which embraces core occupational therapy principles with a focus on disease prevention and health promotion.

Research shows that in practice there is a connection between personal and organisational commitment to health promotion. For example, Swedish health professionals were found to be limited in their capacity for health promotion by their workplace values, structures, and resources (Johansson et al., 2009). In this study, quantitative data revealed that participants who did not promote the PAL of individual children worked in disability services more frequently (46% compared to 26% overall) and in community health services less frequently (15% compared to 27% overall). Whilst occupational therapy philosophy supports embracing a broad perspective of the complexities impacting upon children's engagement in physical activity (Poulsen & Ziviani, 2004), in reality many factors, such as workplace structures, can make it difficult to maintain a focus on promoting health through occupational engagement (Joosten, 2015). In this study a narrow role for occupational therapists, for example focussing on fine motor skills, was reported by some participants in Part Two who viewed it as a result of an organisation's structure, purpose and/or limited resources. Qualitative data also revealed that occupational therapists may promote a child's engagement in physical activity incidentally whilst delivering core occupational therapy interventions such as sensory processing and self-regulation strategies. However, there were diverse views as to whether this was sufficient to promote children's PAL for their overall health.

Workplace practice models and occupational therapy principles which emphasise the priorities of children and their families, were also identified as a barrier to participants' involvement in promoting the PAL of children. For example, participants often referred to their organisation following family-centred practice guidelines, of which a key element is the involvement of caregivers and family members in establishing shared priorities and goals for intervention (Hanna & Rodger, 2002). Some participants reported the child's PAL would only be addressed, therefore, if their caregiver identified it as a priority. A participant not involved in promoting children's PAL acknowledged that the focus on parents' goals and the lack of focus on the importance of physical activity for long term health, had probably resulted in it largely being unaddressed with families attending the health service. Given participants rarely reported educating caregivers about Australian guidelines for physical activity, it is likely that caregivers are not always cognisant of their child's need for physical activity, reducing the likelihood of it being addressed by their occupational therapist. Some participants reported informing parents if they considered a sedentary lifestyle was impacting upon the identified

priorities for the child; however, there was a perception that this relied upon the individual experience of the occupational therapist. This perception is supported by quantitative analysis, which revealed that participants working with all children in the community who did not promote PAL had on average fewer years working in paediatrics (8 years), compared to those who did (11 years). Researchers in the literature therefore advocate for occupational therapists to gain additional education, including on physical activity and wellness, to increase their ability to participate in health promotion activities (Suarez-Balcazar et al., 2013; Tucker et al., 2014). Moreover, to respond to the family's priorities in line with principles for occupational therapy intervention planning, occupational therapists need to provide information regarding the effectiveness of a range of intervention approaches (Dunn, 2011).

Whilst qualitative analysis revealed a link between personal commitment to health promotion and organisational values and resourcing, very few participants in the questionnaire reported a lack of managerial support as being a barrier. Qualitative analysis, however, revealed management, influenced by government policies, rarely provided active encouragement for health promotion activities particularly with regard to primary prevention activities for all children in the community. This is consistent with observations by Baum (2011) that in Australia, action on the social determinants of health to improve population health is less politically popular than a focus upon the behaviour of individuals. Participants in Part Two commented that management valued reportable indicators of individual service provision over long term population health outcomes. Notably, this research revealed that opportunities for participating in primary prevention were very limited in child development services due to policies that emphasised the medical model of service delivery, which privileges a curative rather than preventative approach. Indeed, of those participants working in a community health service, only five (25%) worked with all children in a community setting compared to 49% overall. Participants described a management driven shift from a population level, preventative approach towards an individual-focused medical model.

Participants' responses reveal the connection between resources and public and political pressure for individual care services which ultimately leads health services toward a medical model of practice. Likewise, the dominant medical model of service delivery privileged within health services has been identified within international research as a factor impacting upon occupational therapists' health promotion practice (Flannery & Barry, 2003). Indeed,

adaptation to the medical model has impacted upon occupational therapists' traditional recognition of the need to promote health through participation in physical activity (Scaffa et al., 2010).

Another common barrier perceived by over one third of the questionnaire participants, was a lack of recognition of occupational therapists' competency to promote children's PAL. The impact of this barrier was particularly evident with participants who did not promote the PAL of individual children rating recognition of their competency for such activity worse (2.1) than those who did (2.7). This barrier was further confirmed in Part Two, with participants revealing a perception that there is a lack of recognition of occupational therapists' competency to promote children's PAL, in part due to occupational therapists' reticence to promote their expertise. Whilst some participants reported that physiotherapists were viewed as having more expertise to promote children's PAL by managers and colleagues in their organisation, for one participant it was clinical psychologists. A lack of recognition by management of the willingness and competency of occupational therapists to promote children's PAL may significantly restrict their opportunities for involvement by influencing workplace structures and resourcing. This finding is consistent with the finding by Seymour (1999) that Welsh occupational therapists perceived that greater interest from both managers and doctors was important for them to adopt a stronger health promotion role with elderly clients. To aid recognition of occupational therapy competency for health promotion, researchers have observed that it would be of assistance if occupational therapists were more vocal regarding their skills and contribution (Hildenbrand & Lamb, 2013; Holmberg & Ringsberg, 2014), and were easily able to communicate the complex aspects and outcomes of occupation to health and wellbeing (Moll et al., 2013).

Other professions, as well as occupational therapists' own limited view of occupational therapy, can be a barrier to occupational therapists' involvement in health promotion (Flannery & Barry, 2003). Participants working in multidisciplinary teams frequently reported that physiotherapists assumed the lead role in promoting movement and physical activity amongst children; however, many children did not receive physiotherapy and thus failed to benefit from this support. Moreover, in another Australian study, occupational therapists reported a barrier to their involvement in primary health promotion was a lack of understanding and support from their own profession (Wood et al., 2013).

Whilst lack of knowledge was not generally found to be a barrier in this study, insufficient knowledge for health promotion has been reported by occupational therapists in Australia and abroad (Flannery & Barry, 2003; Quick et al., 2010). A view that occupational therapists should gain further health promotion training (Flannery & Barry, 2003) and establish core professional competencies before expanding into health promotion has also been expressed (Wood et al., 2013). A few participants in this study reported they were not “*an expert*”, despite overall confidence in their skill to promote children’s PAL. Similarly, some participants referred to the benefits of collaborating with others while keeping their practice within the scope of occupational therapy training, as recommended by the AOTA (Scaffa et al., 2008). A participant in Part Two perceived their lack of knowledge of the Australian guidelines for physical activity for children rendered them unqualified to promote children’s physical activity for health, despite encouraging it for other reasons. Finally, some participants indicated that a lack of knowledge in the community regarding children’s need for physical activity, particularly amongst parents and teachers, impacted their capacity to intervene in this area. That is, without the “buy in” from gatekeepers it is difficult for occupational therapists to promote PAL amongst children.

In summary, consistent with findings from other studies regarding health promotion capacity of health professionals, the most common barriers to the involvement of participants in promoting children’s PAL relate to a lack of resources. In particular, a heavy workload and insufficient funding are perceived as significant impediments to practice. Another critical factor is a lack of commitment for refocusing services towards health promotion and primary prevention activity, which is influenced by occupational therapists themselves, the priorities of each child’s family, and organisational values and priorities. Barriers relating to resourcing and commitment were often associated with a lack of managerial and political support for primary prevention activity, and a concurrent return in recent years to a medical model of service provision. Also, influencing both participants’ access to resources and commitment to health promotion, is a perception, both inside and outside of the profession, of occupational therapists’ limited expertise in promoting children’s PAL.

5.9 Recommendations: Overview

Recommendations arising from this study are directed towards increasing paediatric occupational therapists' capacity to adopt a health promotion orientation, in order to optimise their contribution towards addressing an increasing burden of disease. As this study has highlighted, paediatric occupational therapists in WA are actively involved in promoting children's PAL at the individual level, and to a lesser degree the community level. As such, the occupational therapy profession is already making an important contribution to the health promotion agenda in WA. However, there is strong potential for this "prevention" orientation to be further enhanced by actively promoting this aspect of their practice. For example, in this study, over half the children working with participants individually had not been recently provided with support to increase their PAL. This suggests the potential to assist many more vulnerable children through an expanded focus on promoting the PAL of children. Similarly, more children in schools and other communities supported by paediatric occupational therapists could be reached, as half the participants who worked with all children in a community setting had not recently promoted their PAL. In line with previous research (McLean et al., 2005), this study revealed a range of factors influencing health promotion capacity, including the clinicians' commitment, skills, knowledge, and access to resources; the organisation's culture, structures and resources; as well as public opinion and political will. Recommendations are therefore provided for occupational therapists, their managers, and health promotion practitioners to enhance paediatric occupational therapists' promotion of children's PAL.

5.9.1 Recommendations for occupational therapists

Participants identified that important enablers for the promotion of children's PAL were positive beliefs regarding its applicability to their role, along with confidence in their competency for such activities. However, many participants perceived that this was not well recognised outside the profession. One factor likely to contribute to limited awareness of occupational therapists' competency and willingness to engage in health promotion may be their lack of engagement in policy (Flannery & Barry, 2003). To overcome this, paediatric occupational therapists are encouraged to be more vocal, not only in advocacy around policy development, but also within partnerships with other health professionals and stakeholders, in order to communicate the important role occupational therapy has to play in health

promotion (Hildenbrand & Lamb, 2013). In addition, occupational therapists need to increase awareness of the health promoting outcomes of enhancing occupational engagement (Moll et al., 2013; Parnell & Wilding, 2010), and engage in research to provide evidence of the benefits the occupational therapy role brings to promoting health (Moll et al., 2013; Turcotte et al., 2015).

This study also revealed that some participants downplayed their expertise in promoting children's PAL, despite their skill in promoting habitual engagement in healthy occupations amongst children experiencing functional difficulties (Occupational Therapy Australia, 2011). Paediatric occupational therapists working within multi-disciplinary teams are therefore encouraged to be more vocal in expressing their unique contribution to promoting children's engagement in healthy, habitual physical activity. That is, they need to better "market" paediatric occupational therapy as an important element of the broader health promotion workforce.

This study confirmed the importance of paediatric occupational therapists' commitment to engage in health promotion activities. Conversely, a lack of priority placed upon the promotion of children's PAL posed a significant barrier to practice for many participants. Thus, there is a clear need for occupational therapy educators to raise awareness of the importance of this health promotion agenda amongst paediatric occupational therapists. A commitment to refocusing services towards health promotion would be enabled by educating occupational therapists regarding the action areas from the Ottawa Charter for Health Promotion (World Health Organization, 1986), and raising their awareness of local priorities and opportunities for health promotion. Similar to recommendations for the greater primary health care workforce (Lilley & Stewart, 2009), paediatric occupational therapists need to increase their understanding of disease prevention and health promotion theory and practice within a supportive organisational framework. Furthermore, research regarding effective mechanisms for integrating health promotion into occupational therapy practice is required to support paediatric occupational therapists embrace these changes (Turcotte et al., 2015).

Compatibility in the values, philosophy and practice of occupational therapy and health promotion provides a strong basis to further leverage occupational therapists' capacity for health promotion (Flannery & Barry, 2003; Quick et al., 2010; Tucker et al., 2014). However, occupational therapists must embrace the core occupational therapy principles which

incorporate a health promotion focus, rather than primarily being concerned with deficits and limitations (Hildenbrand & Lamb, 2013). Embracing the unique occupational perspective in paediatric practice necessitates occupational therapists take a broad view of children's need to actively engage in their world, and support their participation in meaningful activities to promote health and wellbeing (Moll et al., 2014; Pizzi, 2013). The challenge for paediatric occupational therapists is to maintain this perspective despite the constraints of limited time, which has been found to reduce health professionals' preventative interventions both in previous research (Cotelleso et al., 2009; Johansson et al., 2010; Johansson et al., 2009), and in this current research.

Participants' commitment to promoting physical activity in childhood was strengthened by families sharing this as an area of concern. Conversely, participants' commitment was limited by their perception that family-centred services should only focus on areas identified as a priority by the family. However, despite participants' perception that a lack of knowledge in the community regarding children's need for physical activity impacted their capacity to intervene, few provided education to parents and communities about Australian guidelines for physical activity. It is therefore recommended that more paediatric occupational therapists extend their practice to include promoting health literacy levels (Levasseur & Carrier, 2012), in particular by providing education regarding these guidelines. This change in practice requires more paediatric occupational therapists to be cognisant of the recommended amount of daily physical activity and screen time limits for Australian children of different ages. In addition, paediatric occupational therapists are encouraged to incorporate assessment of a child's habitual level of physical activity and sedentary behaviour into their practice, as a strategy to increase the number of families who have an understanding of the extent to which their child is participating in healthy levels of physical activity. This would also provide an opportunity to raise parents' awareness of the multiple benefits of promoting their child's PAL. These recommendations are well suited to paediatric occupational therapists by drawing upon their primary focus, promoting participation in daily occupations (Dunn, 2011), and their frequent use of parent education as a means for intervention (Rodger et al., 2005).

Another factor supporting participants' commitment to promoting children's PAL was having an awareness of the evidence regarding its importance for motor and cognitive development

and emotional regulation. This is understandable, given best practice guidelines for paediatric occupational therapists include providing information regarding the effectiveness of a range of intervention approaches in response to family priorities (Dunn, 2011). Participants reported gaining the necessary knowledge for promoting children's PAL through their experience working as paediatric occupational therapists, and through their work with physiotherapists, and for less experienced therapists, clinical supervision and the occupational therapy degree. More emphasis in the latter could increase all paediatric occupational therapists' awareness of the substantial evidence regarding the many benefits of heightened PAL to children's health and wellbeing (Okely et al., 2012; World Health Organization, 2010). As a consequence, instead of relying upon individual practitioners learning "on the job", as some participants reported, more paediatric occupational therapists would be cognisant of the evidence base relating to the multiple benefits of increased PAL. This would serve to enhance their capacity to raise families' awareness about how integrating more physical activity into their child's day could support progress in priority areas and legitimise their role in this area. This recommendation is consistent with other researchers' calls for occupational therapists to gain additional education in health promotion to broaden their skills for promoting clients' health (Suarez-Balcazar et al., 2013; Tucker et al., 2014). In addition, further research is required regarding occupational therapy interventions to increase children's PAL (Haracz et al., 2013; Kolehmainen et al., 2015), to strengthen the evidence-base for practice.

This study provides promising evidence of participants having implemented a combination of health promotion activities to increase individual children's PAL. However, no evidence arose of participants' involvement in the macro-level initiatives of policy and urban design. In addition, participants not involved in promoting children's PAL, rated their ability to build the capacity of communities and organisations as only neutral. It is therefore recommended that paediatric occupational therapists are provided with more opportunities, through education and training, to develop their skills in macro-level initiatives such as advocacy and policy development. This would enable individual practitioners to extend their practice from a focus on developing individual skills, to integrating "upstream" initiatives to create supportive environments and healthy public policy (Haracz et al., 2013; Wood et al., 2013).

Consistent with findings from other studies regarding health professionals' involvement in health promotion activities (Johansson et al., 2010; Turcotte et al., 2015), a heavy clinical workload and limited funding were perceived by participants as significant impediments to their promotion of children's PAL. Paediatric occupational therapists are therefore encouraged to broaden their approach to service delivery to consider new contexts and payment arrangements for services (Hildenbrand & Lamb, 2013). For example, Hildenbrand and Lamb (2013) argued that more engagement in preventative initiatives is possible if occupational therapists develop new partnerships and new practice partners with organisations such as charitable groups, community organisations, private-sector organisations and government agencies. Moreover, while many participants cited a heavy clinical load as a barrier, one participant in this study noted that promoting physical activity amongst all children in the community was a useful strategy to manage a heavy workload: "*I think this [promoting children's PAL] is a tool for a heavy clinical caseload*" (Participant 15). Thus, paediatric occupational therapists are encouraged to broaden their perspective regarding the means of meeting a heavy clinical caseload, by reorienting their practice to incorporate health promotion activities.

5.9.2 Recommendations for health services management

This study provides evidence of the impact management has on paediatric occupational therapists' engagement in health promotion activities. Notably, participants' satisfaction ratings regarding managerial and collegial support, along with supportive workplace values and structures, differed more than most other capacity items between those involved and not involved in promoting children's PAL. Participants in Part Two rarely reported that management actively encouraged their engagement in health promotion activities. Instead, they perceived that management valued reportable indicators of individual service provision above long term population health outcomes. This suggests that management need to review how they support staff in terms of prioritising the competing needs for delivery of health services (Johansson et al., 2010), particularly in a constrained funding environment. This includes giving consideration to the role of health services in promoting health both equitably and sustainably (Ziglio et al., 2011). Management are therefore encouraged to emphasise

improvements in service delivery that align with preventive health policy in Australia and anticipated improved health outcomes (Lilley & Stewart, 2009).

Previous research has highlighted that building the health promotion capacity of the workforce is reliant upon the support of management, including developing a supportive policy environment (Judd & Keleher, 2013). During the interviews, many participants referred to policies in their organisation that limited services to practice areas identified as a priority by the family. Such policies raise concerns regarding equitable access to health services, as they require families to have an adequate level of health literacy. As Levasseur and Carrier (2012) noted, health literacy is a complex skill required for obtaining, understanding and using health information, and is necessary to enable parents to understand the role physical activity plays in their child's overall health and wellbeing. In addition, participants working in child development centres reported that management had actively prevented their involvement in primary prevention activities in the community, only allowing work with individuals referred to the service. These participants reported policies that had resulted in the alignment of service provision to the medical model of service delivery, instead of a preventative approach. Participants in this study noted that referrals and waitlists for occupational therapy services could be reduced if they were to encompass preventative strategies such as educating the community regarding universal strategies for healthy child development. Therefore, it is incumbent upon management to review their priorities for delivery of health services, taking into consideration the need for reorientation of health services towards health promotion and disease prevention. Indeed, as Johansson et al. (2010) has observed, management has a critical role to play in directing the balance of service delivery between health promotion and curative care.

An important way in which this can be achieved is through the provision of access to quality continuing professional development regarding health promotion (Lilley & Stewart, 2009). According to Johansson et al. (2010), management have a duty to capitalise on the skills and interests of staff members, and develop opportunities for staff to realise their potential for health promotion. However, as noted in the previous section, many participants felt that their capacity to integrate health promotion actions into their practice was not well recognised by management. Limited recognition by management of their staff's capacity and willingness to implement health promotion actions also potentially impacted staff access to supportive

workplace structures and resources (Lilley & Stewart, 2009). Previous research has identified that a range of factors, including workplace guidelines and structures, can make it challenging for occupational therapists to maintain their focus on promoting health through occupational engagement (Gustafsson, Molineux, & Bennett, 2014). Indeed, some participants in this study perceived the manner in which their health service was structured, including the organisational purpose and available resources, narrowed the scope for paediatric occupational therapy to adopt a health promotion orientation. Management are therefore encouraged to increase their awareness of paediatric occupational therapists' competencies and develop supportive workplace structures and professional development opportunities to build health promotion capacity at an organisational level.

As with previous research (Johansson et al., 2010; Turcotte et al., 2015), this study identified resource constraints, in particular time and funding, to be significant impediments to occupational therapists' involvement in health promotion activities. For example, inadequate funding has been found to result in a lack of staffing and time, and therefore an infrequent paediatric occupational therapy service, which focuses intervention more on compensation than prevention (Cotelleso et al., 2009). Management support in terms of allocation of resources, including time and funding, is therefore imperative to enable paediatric occupational therapists to engage in health promotion activities (Johansson et al., 2010). Finally, this study identified that in some health services, scarcity of safe open space in which physical activities could be conducted also limited participants' ability to promote children's PAL. Management of such services are therefore encouraged to facilitate paediatric occupational therapists' access to appropriate safe space for their activities.

5.9.3 Recommendations for health promotion practitioners

To progress the reorientation of health services and mainstreaming of health promotion, Ziglio et al. (2011) advise health promotion practitioners expand the range of health care professionals with whom they engage to develop a multi-disciplinary and whole of government approach. Health promotion practitioners are encouraged to more actively engage with paediatric occupational therapists to further progress the mainstreaming of health promotion. This study has revealed that many paediatric occupational therapists are both willing and able to implement health promotion activities to increase children's PAL. In

addition, as they typically work with children who experience difficulties participating in everyday activities, they are ideally positioned to support vulnerable children to increase their PAL, as encouraged by the WA Health Promotion Strategic Framework 2012–2016 (HPSF) (Department of Health Western Australia, 2012). Whilst this study reveals that paediatric occupational therapists are already implementing a range of health promotion activities to promote children's PAL, there is potential to further enhance their capacity for health promotion with support from health promotion practitioners.

The broader environment, including political will and public opinion, influences the health promotion actions undertaken by individuals and organisations (McLean et al., 2005). Participants in this study revealed that despite a willingness to promote the PAL of children, it was often not considered a priority by management, nor encouraged or supported by organisational or government policies. For example, participants perceived that both the public and management gave considerable attention to issues such as waitlists for secondary care services, while overlooking the potential role for health promotion. Importantly, this lack of commitment to prevention not only influences service priorities but also resource allocation. Consequently, significant barriers to participants' capacity to promote the PAL of children were a lack of time, funds and resources. Health promotion practitioners are therefore encouraged to undertake activities such as advocacy, political action, capacity building and research to influence public and political opinion (McLean et al., 2005) regarding the important role occupational therapists can play as part of a multidisciplinary team. Indeed, Ziglio et al. (2011) call for health promotion practitioners to increase their activism and advocacy for reorientating health services towards health promotion, including drawing upon the body of evidence regarding the subsequent health and development gains to be obtained.

While factors such as continuing professional development and the provision of adequate infrastructure and funding is important (Lilley & Stewart, 2009), health promotion practitioners can also play an important role in building health promotion capacity amongst other allied health workers (Judd & Keleher, 2013). However, they need to extend capacity building initiatives across non-government and private sector organisations to meet the needs of paediatric occupational therapists, as the majority of participants in this study worked for non-government organisations, including over one third in private practice. This

recommendation is consistent with the action of developing partnerships across the sectors as a means to enhance community focussed programs that promote the health of all Western Australians, identified in The Western Australian Government's WA Health Strategic Intent 2015 – 2020 (Department of Health Western Australia, 2015).

A key barrier identified in this research was limited knowledge, particularly amongst parents and teachers, of the value of promoting children's PAL. This indicates a continued need for health promotion practitioners to deliver state-wide public education campaigns to increase awareness of children's need for physical activity, and support this through practical information delivered in appropriate settings, as detailed in the HPSF (Department of Health Western Australia, 2012). It is the latter health promotion activity, along with targeted interventions to increase caregivers' capacity to establish an active lifestyle for children (Department of Health Western Australia, 2012), that paediatric occupational therapists should be encouraged to implement. These interventions draw upon their expertise in developing personal skills and creating supportive environments. However, as participants rated their knowledge of relevant physical activity guidelines lowest amongst the knowledge items, health promotion practitioners need to work with paediatric occupational therapists to ensure they are cognisant of the Australian guidelines for physical activity for children. This will contribute towards the development of a skilled multidisciplinary health workforce to address health and social contemporary challenges.

5.10 Significance of the study

This study is significant as it is the first in any country to examine occupational therapists' involvement in, and capacity for, implementing health promotion activities to increase the PAL of children. This is an important area of research, as despite recommendations in the literature for occupational therapists to promote PAL amongst children, little was known about their practice or beliefs regarding this priority area for health promotion in WA. The study's findings contribute to the limited research across different jurisdictions investigating occupational therapists' involvement in and beliefs regarding health promotion. Specifically, this research raises awareness of paediatric occupational therapists' implementation of a range of health promotion activities with individuals as well as communities to promote children's PAL. Evidence of the important contribution paediatric occupational therapists

have made towards promoting children's PAL will assist to increase occupational therapy's profile within the field of health promotion.

Valuable insights are also provided regarding paediatric occupational therapists' capacity for promoting children's PAL, including areas of relative strength and weakness. In addition, this study increases understanding of paediatric occupational therapists' perception of enablers and barriers to their health promotion activities. The descriptive nature of this study has provided much needed foundation information to better inform both paediatric occupational therapy practice and education. The findings also provide valuable insights to health services management and health promotion practitioners regarding paediatric occupational therapists' experiences of implementing health promotion activities within Western Australian health services. These findings can be used to better inform initiatives for building the health promotion capacity of a multidisciplinary workforce.

The significance of the quantitative findings is confirmed by the target number of responses being met which enabled population proportions to be estimated with specified precision of 10 percentage points, with 95% confidence (Israel, 2012). The use of a mixed methods research approach added further weight to the study's findings, with the qualitative component allowing for triangulation of data (Doyle et al., 2009). In addition, the application of the Building Health Promotion Capacity theoretical framework (McLean et al., 2005) enabled robust analysis of participants' capacity for health promotion.

5.11 Limitations and further research

This study was limited to examining a sample of Western Australian paediatric occupational therapists' involvement in and capacity for health promotion activities, specifically regarding increasing children's PAL. This specific agenda is closely aligned with paediatric occupational therapists' role in addressing the domain of motor skills (Cotelleso et al., 2009; Rodger et al., 2005), and the needs of children with motor impairments (Kolehmainen et al., 2015). Given this close alignment, this study's findings may not be directly generalised to other occupational therapy cohorts, nor different health promotion areas.

Estimated population proportions from this study are only specified with precision of 10 percentage points and 95% confidence. Efforts were made to maximise contact with as many

members of the study population as possible through the support of a professional association, Developmental Occupational Therapy Western Australia (DOT (WA) Inc.), as well as snowballing to reach non-members. The validity of results, however, may have been impacted by self-selection bias as paediatric occupational therapists involved in promoting children's PAL, and potentially holding a greater interest in this area, may have been more inclined to participate in the study. In addition, a financial incentive was offered to maximise the response rate and reduce self-selection bias; however, it may in itself have added a level of bias.

Findings of this study are based upon the perspective of paediatric occupational therapists in WA. Social desirability bias impacting reporting is a possibility as data collection involved the self-report of participants, although assurances were made that no response was more desirable than another. Findings also rely upon participants' recall; however, questions were limited to activities in the past month to reduce errors of recall. Future research could include other data collection methods to verify this study's findings, including observations of paediatric occupational therapists' practice. In addition, a fuller understanding of paediatric occupational therapists' participation in health promotion activities could be gained by interviewing other stakeholders, including children and families, as well as managers, colleagues and where applicable health promotion practitioners.

A further limitation of this study relates to the data collection instruments. The questionnaire used in Part One was developed specifically for this research and therefore has not undergone testing for reliability and validity, which requires greater resources than available within the Master's program. However, to increase the reliability of this study's results, the questionnaire was pilot tested and developed based upon existing measures that had been tested for face validity and acceptability. For Part Two, focus group discussions were originally planned, as interaction between group members is an effective method for developing an understanding of shared opinions and main themes (Kielhofner, 2006). However, as participants representing a diverse range of characteristics were unavailable to attend at a common time, a series of in-depth interviews was conducted instead. Thematic analysis was undertaken following each in-depth interview, and areas of consensus and conflict across participants noted, to overcome limitations caused by the change in method of data collection.

Descriptive research methodology was chosen for this study as little was known about paediatric occupational therapists' involvement in promoting children's PAL. Therefore, the study was not hypothesis based, and data were unable to be assessed to determine statistical significance of associations. Future research is therefore recommended, to build upon the foundation information from this study, to assess associations between occupational therapists' capacity for, and involvement in, health promotion activities.

Finally, further research is required to contribute to an emerging evidence-base for occupational therapy interventions to increase children's PAL. Research focussing on the effectiveness of occupational therapy interventions to increase PAL for children experiencing functional difficulties, would support paediatric occupational therapists in their most common role. Furthermore, research at the population level would assist in advancing an occupational perspective to health promotion (Moll et al., 2013), and build paediatric occupational therapists' capacity for delivering primary prevention interventions to the community.

5.11 Conclusion

Reorientation of the Australian health care system requires health workers to develop a focus on disease prevention and health promotion, to meet the increasing burden of disease (Brooks et al., 2008; Lilley & Stewart, 2009). There is substantial support in the literature for paediatric occupational therapists, who work to assist children participate in a range of meaningful occupations, to also incorporate strategies to promote PAL of children into their service. In WA, increasing children's PAL is a priority area for health promotion (Department of Health Western Australia, 2012). This study has filled a gap in the research and revealed that the majority of participants, viz. paediatric occupational therapists in WA, are involved in promoting the PAL of the individual children with whom they work. Moreover, participants commonly implemented a range of activities to promote children's PAL, related to the Ottawa Charter for Health Promotion action areas of creating supportive environments and developing personal skills. In particular, participants identified opportunities to embed physical activity into a child's daily routine, which is consistent with recommendations for occupational therapists to encourage healthy lifestyle behaviours in childhood (Cahill & Suarez-Balcazar, 2009; Pizzi, 2013; Poulsen & Ziviani, 2004; Ziviani et al., 2010). However,

despite many participants' promoting children's PAL, few provided education about Australian guidelines for physical activity, which is an evidence-based health promotion activity recommended to be incorporated into occupational therapy practice (Reynolds, 2001).

In line with the need to reorientate health services to more health promoting, community-based services (Baum, 2002), paediatric occupational therapists are encouraged to support all children to participate in healthy activities and environments (Maglio & McKinstry, 2008; Persch et al., 2015; Pizzi et al., 2014; Rodger, 2010). They are also encouraged to implement community level initiatives that encourage physically active lifestyles through the creation of supportive environments (Poulsen & Ziviani, 2004). In this study, half of the participants who worked with all children in a community setting had incorporated community level strategies to promote the children's PAL. Participants frequently described employing a combination of strategies relating to the Ottawa Charter for Health Promotion action areas of creating supportive environments, developing personal skills, and strengthening community action. However, no participant reported being involved in building healthy public policy, which is an area where occupational therapy has the potential to make an important contribution (Haracz et al., 2013; Hildenbrand & Lamb, 2013).

Reorientation of the health care system requires health workers to develop a focus on, and up-skill in, health promotion (Brooks et al., 2008; Harris et al., 2011). Factors influencing health promotion capacity, such as the clinicians' commitment, skill, knowledge and access to resources (McLean et al., 2005), were therefore assessed to understand paediatric occupational therapists' capacity to promote children's PAL. Participants generally expressed positive views regarding the applicability of promoting children's PAL to their role in paediatric occupational therapy, along with confidence in their competency for such activities. Many participants, however, perceived that these views were not shared by those outside the profession. Thus, paediatric occupational therapists are encouraged to be more vocal regarding their unique capabilities, and the contribution they can make to the broader preventative health agenda.

Participants overwhelmingly believed in promoting children's health by encouraging physical activity. However, the priority they placed upon intervening in this area varied greatly. Commitment to promoting children's PAL was influenced by the participant's values, as well

as that of the child's family and health organisation. Thus, it is recommended that the occupational therapy and health promotion professions, as well as health services' management, increase awareness of the importance of a preventative approach. Additional emphasis on health promotion in the occupational therapy degree is recommended, to increase the commitment and confidence of all paediatric occupational therapists regarding implementing health promotion activities. Furthermore, additional research regarding the efficacy of occupational therapy interventions in increasing children's PAL is required to provide a strong evidence-base for practice.

Consistent with findings from other studies regarding health promotion capacity (Flannery & Barry, 2003; Johansson et al., 2010; Quick et al., 2010; Wood et al., 2013), participants shared a common perception that their access to resources, in particular insufficient funding, time and equipment, acted as a barrier to their promotion of children's PAL. The support of health services' management, in terms of allocation of resources, is therefore imperative, as indeed are supportive workplace values and structures. To influence the allocation of resources and managerial commitment to the reorientation of health services towards health promotion, health promotion practitioners and occupational therapists are encouraged to engage in advocacy and activism activities (Ziglio et al., 2011). Moreover, occupational therapists and health promotion practitioners are encouraged to develop partnerships to further progress the mainstreaming of health promotion into occupational therapy practice. In this way, the capacity of paediatric occupational therapists to make an important contribution to the promotion of children's PAL in WA, and therefore children's overall health and wellbeing, will be optimised.

This study has revealed that occupational therapists working with children in WA are well placed to enhance the health and wellbeing of children by promoting their PAL. Indeed, paediatric occupational therapists in WA have the skills and commitment to expand their practice to a health promotion orientation, but need to be supported in this by suitable management and government policies. In addition, paediatric occupational therapists are encouraged to be more vocal regarding their competency for promoting the health of all children by increasing their PAL.

Reference List

- Active Healthy Kids Australia. (2014). *Is sport enough? The 2014 Active Healthy Kids Australia report card on physical activity for children and young people*. Adelaide, South Australia: Active Healthy Kids Australia Retrieved from <http://www.activehealthykidsaustralia.com.au/report-cards/>.
- American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd Edition). *American Journal of Occupational Therapy*, 68(Supplement_1), S1-S48. doi:10.5014/ajot.2014.682006
- American Occupational Therapy Association. (2015). Occupational therapy's perspective on the use of environments and contexts to facilitate health, well-being, and participation in occupations. *American Journal of Occupational Therapy*, 69(Supplement_3), 6913410050p6913410051-6913410050p6913410013. doi:10.5014/ajot.2015.696S05
- Australian Bureau of Statistics. (2013). *Table 14.3 Whether met physical and screen-based activity recommendations by selected population characteristics, Proportion of children aged 2–17 years*. (cat. no. 4364.0.55.001). Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4364.0.55.0042011-12>.
- Australian Institute of Health and Welfare. (2017). *Table 1. Registered occupational therapists: selected characteristics by workforce status and principal role, Australia, 2012 to 2014*. Retrieved from <http://aihw.gov.au/workforce-data/>.
- Baker, A., Galvin, J., Vale, L., & Lindner, H. (2012). Restraint of children with additional needs in motor vehicles: Knowledge and challenges of paediatric occupational therapists in Victoria, Australia. *Australian Occupational Therapy Journal*, 59(1), 17-22. doi:10.1111/j.1440-1630.2011.00966.x
- Barnett, L. M., van Beurden, E., Morgan, P. J., Brooks, L. O., & Beard, J. R. (2009). Childhood motor skill proficiency as a predictor of adolescent physical activity. *Journal of Adolescent Health*, 44(3), 252-259. doi:10.1016/j.jadohealth.2008.07.004
- Baum, F. (2002). *The new public health*. South Melbourne, Australia: Oxford University Press.
- Baum, F. (2011). From Norm to Eric: Avoiding lifestyle drift in Australian health policy. *Australian and New Zealand Journal Of Public Health*, 35(5), 404-406. doi:10.1111/j.1753-6405.2011.00756.x
- Baum, F., Freeman, T., Jolley, G., Lawless, A., Bentley, M., Vartto, K., . . . Sanders, D. (2014). Health promotion in Australian multi-disciplinary primary health care services: Case studies from South Australia and the Northern Territory. *Health Promotion International*, 29(4), 705-719. doi:10.1093/heapro/dat029
- Baxter, G., & Porter-Armstrong, A. (2012). Special Issue: Promoting physical activity to enhance quality of life. *British Journal of Occupational Therapy*, 75(2), 47. doi:10.4276/030802212X13286281651234
- Beery, K., & Buktenica, N. (1997). *Developmental test of visual motor integration third revision*. Cleveland, OH: Modern Curriculum Press.
- Brooks, P. M., Robinson, L., & Ellis, N. (2008). Options for expanding the health workforce. *Australian Health Review*, 32(1), 156-160. doi:10.1071/AH080156
- Bruininks, R. (1978). *Bruininks Oseretsky test of motor proficiency*. Circle Pines, MN: American Guidance Service.
- Cahill, S. M., Clone, J., Wilson, M., & Moroni, A. (2015). Friends, fun, and fitness: A 6-week program for adolescents with Down syndrome. *Developmental Disabilities Special Interest Section Quarterly*, 38(2), 1-4.
- Cahill, S. M., & Suarez-Balcazar, Y. (2009). Promoting children's nutrition and fitness in the urban context. *American Journal of Occupational Therapy*, 63(1), 113-116. doi:10.5014/ajot.63.1.113

- Carter, C., & Micheli, L. (2012). Physical fitness; children & youth; age; mental health. *Pediatric Annals*, 41(12), 493. doi:<http://dx.doi.org/10.3928/00904481-20121126-03>
- Children's Physical Activity Coalition. (2008). *Charter for Active Kids: A blueprint for active and healthy children in Western Australia*. Retrieved from [http://www.achperwa.asn.au/attachments/article/81/Charter for Active Kids 2008%5B1%5D.pdf](http://www.achperwa.asn.au/attachments/article/81/Charter%20for%20Active%20Kids%202008%5B1%5D.pdf)
- Christiansen, C., & Baum, C. (1991). *Occupational therapy: Overcoming human performance deficits*. Thorofare, NJ: Slack.
- Cotelleso, A., Mazer, B., & Majnemer, A. (2009). Community-based occupational therapy services for children: A Quebec survey on service delivery. *Physical and Occupational Therapy Pediatric Journal*, 29(4), 426-444. doi:10.3109/01942630903222092
- Department of Health. (2014). Australia's physical activity and sedentary behaviour guidelines. Retrieved from <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines>
- Department of Health Western Australia. (2012). *WA Health Promotion Strategic Framework 2012–2016*. Western Australia: Department of Health. Retrieved from <http://ww2.health.wa.gov.au/Reports-and-publications/WA-Health-Promotion-Strategic-Framework-2012-2016-HPSF>.
- Department of Health Western Australia. (2015). *WA Health Strategic Intent 2015 – 2020*. Western Australia: Department of Health 2015 Retrieved from http://www.health.wa.gov.au/hrit/docs/publications/WA_Health_Strategic_Intent_2015-2020.pdf.
- Donnelly, C. A., Brenchley, C. L., Crawford, C. N., & Letts, L. J. (2014). The emerging role of occupational therapy in primary care: Le nouveau role de l'ergotherapie dans les soins primaires. *Canadian Journal of Occupational Therapy*, 81(1), 51-61. doi:10.1177/0008417414520683
- Doyle, L., Brady, A.-M., & Byrne, G. (2009). An overview of mixed methods research. *Journal of Research in Nursing*, 14(2), 175-185. doi:10.1177/1744987108093962
- Dunn, W. (1999). *Sensory profile*. San Antonio, TX: Psychological Corporation.
- Dunn, W. (2011). *Best practice occupational therapy for children and families in community settings* (2nd ed.). Thorofare, NJ: Slack.
- Dwyer, G., Baur, L., Higgs, J., & Hardy, L. (2009). Promoting children's health and well-being: Broadening the therapy perspective. *Physical & Occupational Therapy in Pediatrics*, 29(1), 27-43. doi:10.1080/01942630802574825
- Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1), 80-92. doi:10.1177/160940690600500107
- Flannery, G., & Barry, M. M. (2003). An exploration of occupational therapists' perceptions of health promotion. *Irish Journal of Occupational Therapy, Winter*, 33-41.
- Gill, S. V. (2011). Optimising motor adaptation in childhood obesity. *Australian Occupational Therapy Journal*, 58(5), 386-389. doi:10.1111/j.1440-1630.2011.00957.x
- Gillis, L., Tomkinson, G., Olds, T., Moreira, C., Christie, C., Nigg, C., . . . Van Mechelen, W. (2013). Research priorities for child and adolescent physical activity and sedentary behaviours: An international perspective using a twin-panel Delphi procedure. *The International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 112-112. doi:10.1186/1479-5868-10-112
- Gupta, J., Bilics, A. R., Costa, D. M., Hanson, D. J., Duncan, M., Higgins, S. M., . . . Harvison, N. (2011). The philosophical base of occupational therapy. *American Journal of Occupational Therapy*, 65, S65. doi:10.5014/ajot.2011.65S65
- Gustafsson, L., Molineux, M., & Bennett, S. (2014). Contemporary occupational therapy practice: The challenges of being evidence based and philosophically congruent. *Australian Occupational Therapy Journal*, 61(2), 121-123. doi:10.1111/1440-1630.12110

- Hanna, K., & Rodger, S. (2002). Towards family-centred practice in paediatric occupational therapy: A review of the literature on parent–therapist collaboration. *Australian Occupational Therapy Journal*, 49(1), 14-24. doi:10.1046/j.0045-0766.2001.00273.x
- Haracz, K., Ryan, S., Hazelton, M., & James, C. (2013). Occupational therapy and obesity: An integrative literature review. *Australian Occupational Therapy Journal*, 60, 356-365. doi:10.1111/1440-1630.12063
- Harris, M. F., Zwar, N. A., Walker, C. F., & Knight, S. M. (2011). Strategic approaches to the development of Australia's future primary care workforce. *Medical Journal of Australia*, 194(11), S88-91.
- Hildenbrand, W. C., & Lamb, A. J. (2013). Occupational therapy in prevention and wellness: Retaining relevance in a new health care world. *American Journal of Occupational Therapy*, 67(3), 266. doi:10.5014/ajot.2013.673001
- Holmberg, V., & Ringsberg, K. (2014). Occupational therapists as contributors to health promotion. *Scandinavian Journal of Occupational Therapy*, 21, 108-115.
- Ingham-Broomfield, R. (2014). A nurses guide to quantitative research. *Australian Journal of Advanced Nursing*, 32(2), 32-38.
- Israel, G. D. (2012). *Determining sample size*. (PEOD6). Florida: Institute of Food and Agricultural Sciences, University of Florida.
- Johansson, H., Stenlund, H., Lundstrom, L., & Weinehall, L. (2010). Reorientation to more health promotion in health services: A study of barriers and possibilities from the perspective of health professionals. *Journal of Multidisciplinary Healthcare*, 3, 213-224. doi:10.2147/jmdh.s14900
- Johansson, H., Weinehall, L., & Emmelin, M. (2009). "If we only got a chance." Barriers to and possibilities for a more health-promoting health service. *Journal of Multidisciplinary Healthcare*, 3, 1-9.
- Joosten, A. V. (2015). Contemporary occupational therapy: Our occupational therapy models are essential to occupation centred practice. *Australian Occupational Therapy Journal*, 62(3), 219-222. doi:10.1111/1440-1630.12186
- Judd, J., & Keleher, H. (2013). Building health promotion capacity in a primary health care workforce in the Northern Territory: Some lessons from practice. *Health Promotion Journal of Australia*, 24(3), 163-169. doi:10.1071/he13082
- Kardakis, T., Weinehall, L., Jerden, L., Nystrom, M. E., & Johansson, H. (2014). Lifestyle interventions in primary health care: professional and organizational challenges. *European Journal of Public Health*, 24(1), 79-84. doi:10.1093/eurpub/ckt052
- Ketteridge, A., & Boshoff, K. (2008). Exploring the reasons why adolescents participate in physical activity and identifying strategies that facilitate their involvement in such activity. *Australian Occupational Therapy Journal*, 55(4), 273-282. doi:10.1111/j.1440-1630.2007.00704.x
- Kielhofner, G. (2006). *Research in occupational therapy : Methods of inquiry for enhancing practice* Retrieved from <http://ECU.eblib.com.au/patron/FullRecord.aspx?p=272118>
- Kim, J. M., Koh, K. W., Yu, B. C., Jeon, M. J., Kim, Y. J., & Kim, Y. H. (2009). Assessment of community capacity building ability of health promotion workers in public healthcenters. *Journal of Preventive Medicine and Public Health*, 42(5), 283-292.
- Kolehmainen, N., Ramsay, C., McKee, L., Missiuna, C., Owen, C., & Francis, J. (2015). Participation in physical play and leisure in children with motor impairments: Mixed-methods study to generate evidence for developing an intervention. *Physical therapy*, 95(10), 1374. doi:10.2522/ptj.20140404
- Kuo, F., Goebel, L. A., Satkamp, N., Beauchamp, R., Kurrasch, J. M., Smith, A. R., & Maguire, J. M. (2013). Service learning in a pediatric weight management program to address childhood obesity. *Occupational Therapy Health Care*, 27(2), 142-162. doi:10.3109/07380577.2013.780318

- Lang, J., James, C., Ashby, S., Plotnikoff, R., Guest, M., Kable, A., . . . Snodgrass, S. (2013). The provision of weight management advice: An investigation into occupational therapy practice. *Australian Occupational Therapy Journal*, 60(6), 387-394. doi:10.1111/1440-1630.12073
- Lau, C., Stevens, D., & Jia, J. (2013). Effects of an occupation-based obesity prevention program for children at risk. *Occupational Therapy In Health Care*, 27(2), 163-175. doi:10.3109/07380577.2013.783725
- Law, M. (2002). Participation in the occupations of everyday life. *American Journal of Occupational Therapy*, 56(6), 640-649. doi:10.5014/ajot.56.6.640
- Levasseur, M., & Carrier, A. (2012). Integrating health literacy into occupational therapy: Findings from a scoping review. *Scandinavian Journal of Occupational Therapy*, 19(4), 305-314. doi:10.3109/11038128.2011.588724
- Lilley, K. C., & Stewart, D. E. (2009). The Australian preventive health agenda: What will this mean for workforce development? *Australia and New Zealand Health Policy*, 6(1), 1-6. doi:10.1186/1743-8462-6-14
- Lindberg, R., Fetherston, H., Calder, R., McNamara, K., Knight, A., Livingston, M., . . . Dunbar, J. (2016). *Getting Australia's health on track 2016: Priority policy actions for a healthier Australia*. Melbourne, Victoria University: Australian Health Policy Collaboration.
- Lyons, C., Brown, T., Tseng, M. H., Casey, J., & McDonald, R. (2011). Evidence-based practice and research utilisation: Perceived research knowledge, attitudes, practices and barriers among Australian paediatric occupational therapists. *Australian Occupational Therapy Journal*, 58(3), 178-186. doi:10.1111/j.1440-1630.2010.00900.x
- Maglio, J., & McKinstry, C. (2008). Occupational therapy and circus: Potential partners in enhancing the health and well-being of today's youth. *Australian Occupational Therapy Journal*, 55(4), 287-290. doi:10.1111/j.1440-1630.2007.00713.x
- Mandich, A. D., Polatajko, H. J., & Rodger, S. (2003). Rites of passage: Understanding participation of children with developmental coordination disorder. *Human Movement Science*, 22(4-5), 583-595. doi:10.1016/j.humov.2003.09.011
- Marmot, M., Friel, S., Bell, R., Houweling, T. A., & Taylor, S. (2008). Closing the gap in a generation: Health equity through action on the social determinants of health. *Lancet*, 372(9650), 1661-1669. doi:10.1016/s0140-6736(08)61690-6
- Martin, K., Rosenberg, M., Miller, M., French, S., McCormack, G., Bull, F., . . . Pratt, S. (2008). *Move and Munch Final Report. Trends in physical activity, nutrition and body size in Western Australian children and adolescents: the Child and Adolescent Physical Activity and Nutrition Survey (CAPANS)*. Retrieved from <http://www.beactive.wa.gov.au/assets/files/Research/Updated%20CAPANS%202008%20reprot.pdf>.
- McLean, S., Feather, J., & Butler-Jones, D. (2005). *Building health promotion capacity: Action for learning, learning from action*. Vancouver: UBC Press.
- McPherson, A., Keith, R., & Swift, J. (2014). Obesity prevention for children with physical disabilities: A scoping review of physical activity and nutrition interventions. *Disability and Rehabilitation*, 36(19), 1573-1587. doi:10.3109/09638288.2013.863391
- Metzler, C., Hartmann, K., & Lowenthal, L. (2012). Health Policy Perspectives—Defining primary care: Envisioning the roles of occupational therapy. *American Journal of Occupational Therapy*, 66, 266-270.
- Moll, S. E., Gewurtz, R. E., Krupa, T. M., & Law, M. C. (2013). Promoting an occupational perspective in public health. *Canadian Journal of Occupational Therapy. Revue Canadienne d'Ergothérapie*, 80(2), 111.
- Moll, S. E., Gewurtz, R. E., Krupa, T. M., Law, M. C., Lariviere, N., & Levasseur, M. (2014). "Do-Live-Well": A Canadian framework for promoting occupation, health, and well-being. *Canadian Journal of Occupational Therapy*, 82(1), 9-23. doi:10.1177/0008417414545981

- Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48-76. doi:10.1177/2345678906292462
- O'Neil, M. E., Fragala-Pinkham, M., Ideishi, R. I., & Ideishi, S. K. (2012). Community-based programs for children and youth: Our experiences in design, implementation, and evaluation. *Physical & Occupational Therapy in Pediatrics*, 32(2), 111-119. doi:10.3109/01942638.2012.668089
- Occupational Therapy Australia. (2011). *Submission supporting children with special needs and disabilities in schools: The role of occupational therapy* Australia: Occupational Therapy Australia Retrieved from <https://www.otaus.com.au/sitebuilder/advocacy/knowledge/asset/files/18/20110524submissionfinal.pdf>.
- Okely, A. D., Salmon, J., Vella, S., Cliff, D., Timperio, A., Tremblay, M., . . . Ridgers, N. (2012). *A systematic review to update the Australian physical activity guidelines for children and young people*. Canberra, Australia: Commonwealth of Australia Retrieved from <http://ro.uow.edu.au/sspapers/1246/>.
- Orban, K., Erlandsson, L. K., Edberg, A. K., Onnerfalt, J., & Thorngren-Jerneck, K. (2014). Effect of an occupation-focused family intervention on change in parents' time use and children's body mass index. *American Journal of Occupational Therapy*, 68(6), e217-226. doi:10.5014/ajot.2014.010405
- Packer, T., Briffa, T., Downs, J., Ciccarelli, M., & Passmore, A. (2006). *The physical activity study of children and adolescents with a disability*. Retrieved from http://espace.library.curtin.edu.au/webclient/StreamGate?folder_id=0&dvs=1472825317652~129&usePid1=true&usePid2=true
- Parnell, T., & Wilding, C. (2010). Where can an occupation-focussed philosophy take occupational therapy? *Australian Occupational Therapy Journal*, 57(5), 345-348. doi:10.1111/j.1440-1630.2010.00860.x
- Persch, A. C., Lamb, A. J., Metzler, C. A., & Fristad, M. A. (2015). Healthy habits for children: Leveraging existing evidence to demonstrate value. *American Journal of Occupational Therapy*, 69(4), 1-5 5p. doi:10.5014/ajot.2015.694001
- Pizzi, M. (2013). Obesity, health and quality of life: A conversation to further the vision in occupational therapy. *Occupational Therapy In Health Care*, 27(2), 78-83. doi:10.3109/07380577.2013.778442
- Pizzi, M., Vroman, K. G., Lau, C., Gill, S. V., Bazyk, S., Suarez-Balcazar, Y., & Orloff, S. (2014). Occupational therapy and the childhood obesity epidemic: research, theory and practice. *Journal of Occupational Therapy, Schools & Early Intervention*, 7(2), 87-105 119p. doi:10.1080/19411243.2014.930605
- Pont, K., Ziviani, J., Wadley, D., & Abbott, R. (2011). The Model of Children's Active Travel (M-CAT): A conceptual framework for examining factors influencing children's active travel. *Australian Occupational Therapy Journal*, 58(3), 138-144. doi:10.1111/j.1440-1630.2010.00865.x
- Poulsen, A. A., & Ziviani, J. M. (2004). Health enhancing physical activity: Factors influencing engagement patterns in children. *Australian Occupational Therapy Journal*, 51(2), 69-79. doi:10.1046/j.1440-1630.2004.00420.x
- Poulsen, A. A., Ziviani, J. M., & Cuskelly, M. (2007). Perceived freedom in leisure and physical coordination ability: Impact on out-of-school activity participation and life satisfaction. *Child Care Health Development*, 33(4), 432-440. doi:10.1111/j.1365-2214.2007.00730.x
- Prairie Region Health Promotion Research Centre. (2004). *Health promotion capacity checklists: A workbook for individual, organizational and environmental assessment*. Saskatoon, Saskatchewan, Canada Retrieved from <http://www.usask.ca/healthsci/che/prhprc/programs/finalworkbook.pdf>.

- Quick, L., Harman, S., Morgan, S., & Stagnitti, K. (2010). Scope of practice of occupational therapists working in Victorian community health settings. *Australian Occupational Therapy Journal*, 57, 95-101. doi:10.1111/j.1440-1630.2009.00827.x
- Reynolds, F. (2001). Strategies for facilitating physical activity and wellbeing: A health promotion perspective *British Journal of Occupational Therapy*, 64(7), 330-336. doi:10.1177/030802260106400703
- Rodger, S. (2010). *Occupation centred practice with children : A practical guide for occupational therapists*. Hoboken, New Jersey: Wiley-Blackwell.
- Rodger, S., Brown, G. T., & Brown, A. (2005). Profile of paediatric occupational therapy practice in Australia. *Australian Occupational Therapy Journal*, 52(4), 311-325. doi:10.1111/j.1440-1630.2005.00487.x
- Salmon, J., Ridgers, N., Morgan, P., Okely, T., D Lubans, K Hesketh, . . . B Giles-Corti. (2014). Action area 9: Children and adolescents. *Blueprint for an active Australia* (2nd ed.). Melbourne: National Heart Foundation of Australia.
- Scaffa, M. E., Reitz, S. M., & Pizzi, M. (2010). *Occupational therapy in the promotion of health and wellness*. Philadelphia: F.A. Davis Company.
- Scaffa, M. E., Van Slyke, N., & Brownson, C. (2008). Occupational therapy services in the promotion of health and the prevention of disease and disability. *The American Journal of Occupational Therapy*, 62(6), 694-703. doi:10.5014/ajot.62.6.694
- Scriven, A., & Atwal, A. (2004). Occupational therapists as primary health promoters: Opportunities and barriers. *British Journal of Occupational Therapy*, 67(10), 424. doi:10.1177/030802260406701002
- Seymour, S. (1999). Occupational therapy and health promotion: A focus on elderly people. *British Journal of Occupational Therapy*, 62(7), 313-317. doi:10.1177/030802269906200709
- Starks, H., & Brown Trinidad, S. (2007). Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative Health Research*, 17(10), 1372-1380. doi:10.1177/1049732307307031
- Stone, A., Shiffman, S., & Atienza, A. (2007). *Science of real-time data capture : Self-reports in health research*. Cary, NC, USA: Oxford University Press, USA.
- Suarez-Balcazar, Y., Friesema, J., & Lukyanova, V. (2013). Culturally competent interventions to address obesity among African American and Latino children and youth. *Occupational Therapy In Health Care*, 27(2), 113-128. doi:10.3109/07380577.2013.785644
- Tomlin, S., Joyce, S., & Radomiljac, A. (2016). *Health and wellbeing of children in Western Australia in 2015, overview and trends*. Western Australia: Department of Health.
- Townsend, E. A., & Polatajko, H. J. (2013). *Enabling occupation II: Advancing an occupational therapy vision for health, well-being, & justice through occupation, 2nd Ed*. Ottawa, Ontario: Canadian Association of Occupational Therapists.
- Tucker, P., Vanderloo, L., Irwin, J., Mandich, A., & Bossers, A. (2014). Exploring the nexus between health promotion and occupational therapy: Synergies and similarities. *Canadian Journal of Occupational Therapy*, 81(3), 183-193. doi:10.1177/0008417414533300
- Turcotte, P. L., Carrier, A., Desrosiers, J., & Levasseur, M. (2015). Are health promotion and prevention interventions integrated into occupational therapy practice with older adults having disabilities? Insights from six community health settings in Quebec, Canada. *Australian Occupational Therapy Journal*, 62(1), 56-67. doi:10.1111/1440-1630.12174
- Verschuren, O., Darrah, J., Novak, I., Ketelaar, M., & Wiert, L. (2014). Health-enhancing physical activity in children with cerebral palsy: more of the same is not enough. *Physical & Occupational Therapy in Pediatrics*, 94(2), 297-305. doi:10.2522/ptj.20130214
- Waite, A. (2013). Take it outside. *OT Practice*, 18(5), 7-11.
- Wong, S. R., & Fisher, G. (2015). Comparing and using occupation-focused models. *Occupational Therapy In Health Care*, 29(3), 297-315. doi:10.3109/07380577.2015.1010130

- Wood, R., Fortune, T., & McKinstry, C. (2013). Perspectives of occupational therapists working in primary health promotion. *Australian Occupational Therapy Journal*, 60, 161-170. doi:10.1111/1440-1630.12031
- World Health Organization. (1986). *Ottawa charter for health promotion*. Retrieved from <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>.
- World Health Organization. (1998). *Health promotion glossary*. Retrieved from <http://www.who.int/healthpromotion/about/HPR%20Glossary%201998.pdf>
- World Health Organization. (2002). *Towards a common language for functioning, disability and health ICF*. Retrieved from <http://www.who.int/classifications/icf/training/icfbeginnersguide.pdf>
- World Health Organization. (2010). *Global recommendations on physical activity for health*. World Health Organization Retrieved from whqlibdoc.who.int/publications/2010/9789241599979_eng.pdf.
- Wrotniak, B. H., Epstein, L. H., Dorn, J. M., Jones, K. E., & Kondilis, V. A. (2006). The relationship between motor proficiency and physical activity in children. *Pediatrics*, 118(6), e1758-e1765. doi:10.1542/peds.2006-0742
- Yamkovenko, S. (2009). The power of a jump rope: An evidence-based movement. *OT Practice*, 14(14), 17-19.
- Yu, M.-L., Ziviani, J. M., & Haynes, M. (2011). Sleep, structured and social time use and young Australian children's physical activity. *Health Promotion Journal of Australia*, 22(3), 203-209.
- Ziglio, E., Simpson, S., & Tsouros, A. (2011). Health promotion and health systems: Some unfinished business. *Health Promotion International*, 26 Suppl 2, ii216-225. doi:10.1093/heapro/dar079
- Ziviani, J. M., Desha, L., Poulsen, A., & Whiteford, G. (2010). Positioning occupational engagement in the prevention science agenda for childhood obesity. *Australian Occupational Therapy Journal*, 57, 439-441. doi:10.1111/j.1440-1630.2010.00891.x
- Ziviani, J. M., Poulsen, A., & Hansen, C. (2009). Movement skills proficiency and physical activity: A case for Engaging and Coaching for Health (EACH)-Child. *Australian Occupational Therapy Journal*, 56(4), 259-265. doi:10.1111/j.1440-1630.2008.00758.x
- Ziviani, J. M., Poulsen, A. A., Kotaniemi, K., & Law, M. (2014). The Belief in Goal Self-Competence Scale (BiGSS): Exploring a new way to support individual goal pursuit and document occupational therapy outcomes in paediatric practice. *Australian Occupational Therapy Journal*, 61(5), 316-324. doi:10.1111/1440-1630.12140
- Ziviani, J. M., Wadley, D., Ward, H., Macdonald, D., Jenkins, D., & Rodger, S. (2008). A place to play: Socioeconomic and spatial factors in children's physical activity. *Australian Occupational Therapy Journal*, 55(1), 2-11. doi:10.1111/j.1440-1630.2006.00646.x

Appendices

Appendix 1: Self-Report Questionnaire

Dear Occupational Therapist,

As an occupational therapist working to support children (aged 0-18 years) in Western Australia, I would like to know about your involvement in and views regarding implementing interventions to increase the physical activity levels of children.

In this survey the term physical activity levels refer to participating in physical activity and limiting use of electronic media for entertainment on a daily basis, as recommended by the Australian Physical Activity and Sedentary Behaviour Guidelines.

(<http://www.health.gov.au/internet/main/publishing.nsf/Content/health-publth-strateg-phys-act-guidelines>)

Your responses will be included in the reporting of overall research results, and you will not be individually identified in any way. Your submission of the survey indicates consent to your anonymous feedback being included in results and reporting.

Please tell me about the children (aged 0-18 years) you supported through your work, over the past month.

In which WA health regions did they reside? Please tick as many as apply.

- Perth metropolitan
- South West
- Great Southern
- Wheatbelt
- Goldfields
- Midwest
- Pilbara
- Kimberley

What was their age range?

_____ to _____ years

Did they typically have difficulties with functioning?

1. Yes
2. No

If No Is Selected, Then Skip To End of Block

In which area(s) did they typically have difficulties? Tick as many as apply.

- Cognitive Functions
- Emotional Functions
- Sensory Functions
- Neuromusculoskeletal and Movement-Related Functions
- Speech Functions
- Poor Health (Functions of the cardiovascular, respiratory, immunological, digestive systems etc.)
- Other, please specify _____

In this survey occupational therapy services for individual children means children individually referred to your organisation. Occupational therapy services for all children in a community setting means children for whom individual referrals were not received, such as for all of the children in a school or playgroup or town.

Did you provide services for individual children over the past month?

3. Yes
4. No

If No Is Selected, Then Skip To End of Block

How many individual children do you estimate you provided services for over the past month?

_____ children

Over the past month did you support individual children to increase their physical activity levels?

5. Yes
6. No

If No Is Selected, Then Skip To End of Block

Of all the individual children you worked with, what percentage did you support to increase their physical activity levels?

_____ Individual children

Over the past month, how did you support individual children to increase their physical activity levels? Please tick as many activities as apply.

- Assessed a child's daily level of physical activity and sedentary behaviour
- Encouraged adults to place limits on screen-time for a child
- Matched a child's skills to achievable physical activities
- Modified activities or environments to enable a child's participation in physical activity
- Provided education about Australian guidelines for physical activity and sedentary behaviour
- Provided education about the benefits of physical activity
- Provided education about the risks of physical inactivity
- Supported more physical activity to be embedded into a child's daily routine
- Supported a child's development of skills to participate in physical activities
- Supported a child to overcome barriers to participating in physical activity
- Supported a child's motivation to participate in physical activity
- Others, please specify _____

Did you provide services for all children in a community setting over the past month?

- 7. Yes
- 8. No

If No Is Selected, Then Skip To End of Block

In which community settings did you provide services for all children? Tick as many as apply.

- Schools
- Child care centres
- Playgroups
- Local area/town, please specify _____
- Other, please specify _____

Over the past month did you support children to increase their physical activity levels by providing services for all children in a community setting?

- 9. Yes
- 10. No

If No Is Selected, Then Skip To End of Block

Over the past month, what did you do to support all children in a community setting to increase their physical activity levels? Please tick as many activities as apply.

- Advocated for accessible activities and environments
- Conducted programs to facilitate children's participation in physical activity
- Educated others to enable the participation of all children in physical activity
- Encouraged adults to place limits on screen-time for children
- Provided education about the benefits of physical activity
- Provided education about the risks of physical inactivity
- Provided information to influence government policy
- Provided information to influence urban design
- Raised awareness about Australian guidelines for physical activity and sedentary behaviour
- Supported more physical activity to be embedded into programs
- Supported programs that encourage children to participate in physical activity
- Others, please specify _____

This question is about your capacity to promote the physical activity levels of children. Please indicate the degree to which you agree or disagree with each statement.

	Strongly disagree	Disagree	Agree	Strongly Agree	Not applicable
I have a sound knowledge of health promotion principles	11.	12.	13.	14.	15.
I know the recommended amount of daily physical activity and screen time limits for Australian children	16.	17.	18.	19.	20.
I am aware of the risks for children of physical inactivity	21.	22.	23.	24.	25.
I know a range of strategies to promote the physical activity levels of individual children	26.	27.	28.	29.	30.
I know a range of strategies to promote the physical activity levels of all children in a community setting	31.	32.	33.	34.	35.
I have the skills to plan, implement and evaluate health promotion activities to promote children's physical activity levels	36.	37.	38.	39.	40.
I can communicate effectively with diverse audiences, using a variety of means	41.	42.	43.	44.	45.
I have the skills to collaborate with others in a range of contexts	46.	47.	48.	49.	50.
I am able to gather and use evidence based strategies to guide my practice in promoting children's physical activity levels	51.	52.	53.	54.	55.
I am able to build the capacity of communities and organisations to promote children's engagement in physical activity	56.	57.	58.	59.	60.
I believe in and advocate for promoting the health of children by supporting their physical activity levels	61.	62.	63.	64.	65.
I am confident in my ability to promote the physical activity levels of individual children	66.	67.	68.	69.	70.
I am confident in my ability to promote the physical activity levels of all children in a community setting	71.	72.	73.	74.	75.
My ability to promote children's physical activity levels is well recognised	76.	77.	78.	79.	80.
Promoting the health of children by supporting their physical activity levels is a priority in my work	81.	82.	83.	84.	85.

This question is about your satisfaction with the resources available to you for promoting the physical activity levels of children. Please indicate the degree to which you agree or disagree with each statement.

	Strongly disagree	Disagree	Agree	Strongly agree	Not applicable
I have adequate time to engage in activities to promote children's physical activity levels	86.	87.	88.	89.	90.
I have access to the necessary resources and equipment to promote children's physical activity levels	91.	92.	93.	94.	95.
My workplace values and structures enable me to participate in activities to promote the physical activity levels of individual children	96.	97.	98.	99.	100.
My workplace values and structures enable me to participate in activities to promote the physical activity levels of all children in a community setting	101.	102.	103.	104.	105.
I have managers and colleagues who support my activities to promote children's physical activity levels	106.	107.	108.	109.	110.
There is adequate funding for me to engage in activities to promote children's physical activity levels	111.	112.	113.	114.	115.

Are any of the following barriers to you promoting the physical activity levels of children? Please choose up to 4 of the most significant barriers.

- Heavy clinical workload
- Inadequate funding
- Inadequate resources
- It is beyond occupational therapists' scope of practice
- It is not a clinical priority
- Lack of guidelines
- Lack of an evidence base for practice
- Lack of managerial support
- Lack of professional support
- Lack of recognition of occupational therapists' competency in this area
- Limited competency
- Policies governing my scope of work
- Time spent on non-clinical work tasks
- Unclear objectives
- Other, please specify _____

Finally, please provide some demographic details about yourself and your main place of work (over the past month) with children

What is your gender?

116. Male

117. Female

What is your age?

_____ years

In what year did you complete your entry level occupational therapy qualification?

What is your highest level of qualification?

118. Bachelor Degree

119. Graduate Certificate

120. Graduate Diploma

121. Masters

122. PhD

123. Other, please specify _____

Are you registered with AHPRA as an occupational therapist?

124. Yes

125. No

How many years have you worked in paediatrics?

_____ years

Are you a member of DOT (WA) Inc.?

126. yes

127. No

What best describes your work setting?

128. Hospital

129. Community health service

130. Disability services

131. Private practice

132. Other, please specify _____

What type of organisation do you work for?

133. Government

134. Non-Government Organisation

Which of the following roles do you undertake? Please tick all that apply.

Clinician

Supervisor

Manager

Project worker

Other, please specify _____

Do you work within a multi-disciplinary team?

135. Yes

136. No

What percentage of full time hours do you work?

_____ percent

I am also conducting two follow up focus groups with occupational therapists working with children. Each participant will be given a \$50 gift voucher in appreciation of their time spent attending the focus group and a certificate of attendance for your continuing professional development portfolio. If you would like to participate, please include some contact details below and I will be in touch. Video conferencing will be made available for rural practitioners.

Thank you for participating in this research. If you would like to go into the draw to win one of two \$100 vouchers, please provide some contact details below (e.g. telephone number or email address).

Appendix 2: Introductory letter to members of Developmental Occupational Therapy (Western Australia) Inc.

Subject: Quick Survey for OTs working with children in WA

Sent: Saturday, 15 August, 2015 6:43 PM

From: "DOT WA Inc" <dev.ot.wa@gmail.com>

To OTs working with children in WA,

I am very interested in your views on promoting children's physical activity levels. By completing my survey before the 14th September 2015 you will go in the draw to win one of 2 \$100 vouchers. To complete the survey please

click here: https://ecuai.qualtrics.com/SE/?SID=SV_8f9RHdm5fmAjPmd

Did you know that in WA only 10% of girls and 12% of boys meet both recommendations for physical activity and screen time limits each day of the week?* This research is designed to meet the worldwide need for evidence about occupational therapists' involvement in and views regarding promoting children's physical activity levels.

The survey takes about 10 minutes to complete, is anonymous and findings from the research will be shared widely, including with DOT (WA) Inc., universities and health services. Please click here to complete the

survey: https://ecuai.qualtrics.com/SE/?SID=SV_8f9RHdm5fmAjPmd

To find out more about the research, being conducted as part of my Masters at ECU, please visit: <https://www.dropbox.com/s/kbt0q1z74qm3bzd/Information%20Sheet%20part1%20Questionnaire.docx?dl=0>

Please forward to all OTs who are working with children in WA. Thank you for supporting my research and contributing to the evidence base for our profession.

Kind regards

Sally Coombs

Senior Occupational Therapist, Child and Adolescent Health Service

slcoombs@our.ecu.edu.au

Sally.Coombs@health.wa.gov.au

* Australian Bureau of Statistics (2013). Australian Health Survey: Physical Activity, 2011–12 — Australia.

https://ecuau.qualtrics.com/SE/?SID=SV_8f9RHdm5fmAjPmd

--

Kind regards,

Tamara Bushell
Developmental Occupational Therapy (WA) Inc
Email Coordinator
dev.ot.wa@gmail.com
www.dotwa.org.au

Appendix 3: Information sheet for Part One



Project title: Investigating the practice and capacity of paediatric occupational therapists to promote the physical activity levels of Western Australian children

Researcher: Sally Coombs, Master of Public Health student, Edith Cowan University and Senior Occupational Therapist, Child and Adolescent Health Service.

Eligible Participants: Registered occupational therapists currently working to support children in Western Australia

Involvement in this project: Part 1: Participants complete a 10-minute online questionnaire

Dear Occupational Therapist

Thank you for your interest in this research project aimed towards supporting occupational therapists' involvement in the promotion of children's physical activity levels.

What is this study about?

This study aims to assess occupational therapists' practice and views on promoting the physical activity levels of children, as this is a priority area for the promotion of health in Western Australia.

What does participation in the study involve?

This part of the study involves you completing an anonymous computer-based survey, which will take about ten minutes to complete. The survey will ask about your views, as an occupational therapist, in regards to promoting children's physical activity levels in your work. In order to compare and contrast data, the survey will also include some demographic questions.

There are no right or wrong answers to any of the questions, and you will be free to withdraw at any time without penalty. Any information you provide will be confidential and information relating to this research project will be stored securely. The results of the study may be published in reports, journals and conference proceedings.

What are the benefits of participating in the study?

As a thank you for completing the questionnaire, you will be given the opportunity to win one of two \$100 vouchers, in appreciation of your time and expertise. The research findings will be shared with DOT (WA) Inc. and Western Australian universities and will provide a unique insight into occupational therapists' involvement in promoting the physical activity levels of children.

Next Step

To commence the survey please go to https://ecuai.qualtrics.com/SE/?SID=SV_8f9RHdm5fmAjPmd

Completion of the survey implies consent to participate in the research.

For anyone interested, there will also be a second part to the research that will involve a 1 hour focus group in Perth, with videoconferencing facilities available. Further information on the second phase is included in a link at the end of the electronic survey and can also be found here:

<https://www.dropbox.com/s/tdn64mnwtbemrpf/Information%20Sheet%20part2.docx?dl=0>

Further Information

This research project is being undertaken as part of the requirements of my Master by Research at Edith Cowan University.

For further information please feel free to contact:

Sally Coombs

Master of Public Health student, Edith Cowan University

email: slcoombs@our.ecu.edu.au

or

Dr Julie Dare

Principal Supervisor, Senior Lecturer, Health Promotion

School of Exercise and Health Sciences, Edith Cowan University (Joondalup Campus)

Phone: +61 (08) 6304 2613

Email: j.dare@ecu.edu.au

Note: This study has been approved by the Edith Cowan University Human Research Ethics Committee. If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact: Research Ethics Officer Edith Cowan University 270 Joondalup Drive JOONDALUP WA 6027 Phone: (08) 6304 2170 Email: research.ethics@ecu.edu.au

Kind regards

Sally Coombs

Master of Public Health student, Edith Cowan University

Senior Occupational Therapist, Child and Adolescent Health Service

Email: slcoombs@our.ecu.edu.au

Appendix 4: Information sheet for Part Two



Project title: Investigating the practice and capacity of paediatric occupational therapists to promote the physical activity levels of Western Australian children

Researcher: Sally Coombs, Master of Public Health student, Edith Cowan University and Senior Occupational Therapist, Child and Adolescent Health Service.

Eligible Participants: Registered occupational therapists currently working to support children in Western Australia.

Involvement in this project: Part 2: 10-15 minute individual phone interviews

Dear Occupational Therapist

Thank you for your interest in this research project aimed towards supporting occupational therapists' involvement in the promotion of children's physical activity levels.

What is this study about?

This study aims to assess occupational therapists' practice and views on promoting the physical activity levels of children, as this is a priority area for the promotion of health in Western Australia.

What does participation in the study involve?

This part of the study involves you answering questions in a 10-15 minute individual phone interview. The questions are intended to investigate occupational therapists' views on barriers and enablers to their involvement in promoting children's physical activity levels.

With participants' permission, the interview will be audio recorded so information can be transcribed for analysis. There are no right or wrong answers to any of the questions, and you will be free to withdraw at any time without penalty. Any information you provide will be confidential and information relating to this research project will be stored securely. The results of the study may be published in reports, journals and conference proceedings.

What are the benefits of participating in the study?

As a thank you for participating in the focus group, you will be offered a \$50 voucher to acknowledge your time and expertise. The research findings will be shared with DOT (WA) Inc. and Western Australian universities and will provide a unique insight into occupational therapists' involvement in promoting the physical activity levels of children.

Further Information

This research project is being undertaken as part of the requirements of my Master by Research at Edith Cowan University.

For further information please feel free to contact:

Sally Coombs

Master of Public Health student, Edith Cowan University

email: slcoombs@our.ecu.edu.au

or

Dr Julie Dare

Principal Supervisor, Senior Lecturer, Health Promotion

School of Exercise and Health Sciences, Edith Cowan University (Joondalup Campus)

Phone: +61 (08) 6304 2613

Email: j.dare@ecu.edu.au

Note: This study has been approved by the Edith Cowan University Human Research Ethics Committee. If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact: Research Ethics Officer Edith Cowan University 270 Joondalup Drive JOONDALUP WA 6027 Phone: (08) 6304 2170 Email: research.ethics@ecu.edu.au

Kind regards

Sally Coombs

Master of Public Health student, Edith Cowan University

Senior Occupational Therapist, Child and Adolescent Health Service

Email: slcoombs@our.ecu.edu.au

Appendix 5: Questions for Part Two (In-depth interviews)

Question 1: What has helped you to intervene to promote the physical activity levels of children?

Question 2: Do any of the following enablers from the survey resonate with you?

Knowledge of appropriate strategies,

Confidence in your skills,

Using evidence,

Occupational therapy experience or further study,

Ability to build the capacity of communities,

Having managerial and collegial support.

Question 3: What gets in the way of you promoting the physical activity levels of children?

Question 4: Do any of the following barriers from the survey resonate with you?

Having a heavy clinical workload,

It not being a clinical priority,

Lack of funding and resources,

Lack of recognition of occupational therapy competency in this area.

Question 5: How do you think we could encourage and support occupational therapists to be more active in promoting children's physical activity levels?

Appendix 6: Transcripts of In-depth interviews

At the request of the author,

Appendix 6 has been omitted from this version of the thesis.