Perceptions of health professionals and parents of children undergoing weight-management therapy:

Childhood obesity management, treatment and policy implications

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Abstract

Background: Childhood obesity is a global phenomenon and public health problem. It is a chronic health condition associated with a body composition of excessive fat impacting on a child's physical and social development.

Public health initiatives addressing childhood obesity have had little success in reducing the prevalence of obesity or of returning children to a 'normal' BMI. Clinical guidelines recommend that health professionals from primary, secondary and tertiary settings should manage paediatric obesity. However, little is known about the current landscape of childhood obesity management: who is involved, what approaches are used, or what the main enablers or barriers to effective management are. Research has focused on the perceptions and practices of Australian general practitioners, but little is known about the experiences of other health professionals who manage childhood obesity.

The purpose of the study was to explore and describe how Australian health professionals and parents experience and perceive childhood obesity management. The aim was to access information that related particularly to facilitators and barriers of management.

Methods: Interpretative phenomenological analysis was used as an approach to examine and describe factors that influenced the ways in which health professionals and parents experienced and perceived the phenomenon of childhood obesity management. Semi-structured interviews were undertaken with health professionals and parents. The research comprised two studies.

Study 1 involved health professionals from private practice, weight-management clinics, hospital and community services in three Australian states. Participants were dietitians, paediatricians, psychologists, physiotherapists and endocrinologists.

Study 2 presents four case studies of parents who had attended a paediatric weight management clinic.

Findings: Health professionals described childhood obesity as a body size that put children at risk of poor health outcomes; the psychological impacts were particularly of concern. They discussed their perceptions of their role in diagnosis, assessment and treatment; and shared their experiences of carrying out these roles. Each perceived role was described in the context of barriers that presented both internal and external to the clinical management

setting. This included a paucity of services to refer children with obesity, insufficient resources to support treatment and their inadequate knowledge/training to engage families and effectively implement prescribed changes to health behaviours. Furthermore, health professionals believed changes made during clinical interventions were unsustainable because of the impact of the wider environment, particularly ease of access to calorie-dense foods, sedentary activities and family circumstances.

The implications of the obstacles health professionals faced in treating childhood obesity were evident in parents' interviews. Parents reported: difficulties accessing services due to limited availability and work hours; problems getting the whole family to attend sessions; resistance from other family members, including the children themselves. They believed health professionals played an integral role in gaining the entire family's support. Parents wanted better strategies that would help their family more readily accept changes; however, they also acknowledged ensuring every meal for children was healthy was difficult due to the impact of an obesogenic environment. Ultimately, parents felt more in control of their family environment but were not confident these changes could be sustained, particularly when children were out of their direct care.

Conclusion: Childhood obesity management may benefit from a systems approach. This includes having a health infrastructure and training that supports the practices of health professionals so that optimal management can be achieved. Additionally, policies that address the environmental and social determinants of childhood obesity are required to support sustainable behaviour change initiated by clinical management.

Doctor of Philosophy Student Declaration

Doctor of Philosophy Declaration

"I, Sally Wai-Kwan Chislett, declare that the PhD thesis entitled *Perceptions of health professionals and parents of children undergoing weight-management therapy: Childhood obesity management, treatment and policy implications* is no more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work".

Signature  ate 5 August 2019

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Professional Proofreading

Andrew Squared consultancy of Melbourne undertook the task of proof-reading this thesis. This work was undertaken in regard to the Standards cited in the Australian Standards for Editing Practice. These practices adhered specifically to Standards D (clarity of expression and logical connection) and E (punctuation, citations and references). The thesis has been edited in line with practices of recent Victoria University doctorates and the Publication Manual of the American Psychological Association (2019). *No conflict of interest is known to exist in the work of the professional proof-readers. The proof-readers are holders of doctorates and practitioners in Higher Education. The discipline of Child Health is not their core discipline.*

Contents

Explanation of terms

Adiposity: Refers to the condition of fat accumulation indicative of severe obesity.

Body Mass Index (BMI): An anthropometric measure of body mass calculated by dividing a person's weight in kilograms by their height in metres squared (BMI= kg/m^2).

BMI percentile: BMI percentiles represent a child's BMI relative to other children of their age and gender.

Childhood obesity: Australia uses the US-CDC definition of childhood obesity for children aged 2-18 years-old; which is defined as having a BMI above the 95th percentile for age and gender.

Clinical management: Refers to the care provided by a health care professional for the assessment, diagnosis, referral and treatment of a health issue.

Clinical treatment: Medical care provided by a health professional to a patient with the intention of improving their symptoms or health condition.

Family-based approach: A family-centred approach providing an expanded-view of how to work with family members to achieve a certain behavioural outcome.

Health professional: A person who is qualified and registered in a medical speciality or discipline to provide healthcare to a person.

Intervention: Refers to the collective processes of modifying behaviours with the intention of improving a (health) outcome.

Management: Refers to the actions taken to maintain or improve a health outcome.

Normal weight: The US-CDC definition of normal weight for children is a BMI between the 5th – 85th percentile for age and gender.

Overweight: The US-CDC definition of normal weight for children is a BMI between the 85th - 95th percentile for age and gender.

Paediatric obesity: another term for childhood obesity.

Severe obesity: The clinical definition of severe obesity differs; however, the US-CDC classification defines it as having a BMI ≥120% of the 95th percentile.

Standard growth chart: Growth charts are standardised tools used to plot a child's height and weight and compare their growth amongst children of the same age and gender.

Multidisciplinary care: An approach to clinical management incorporating the skills and expertise of multiple disciplines to deliver comprehensive care to patients.

Multidisciplinary team: A collective group of health professionals of different areas of expertise working together to provide specific services to a patient that treat various aspects of patient health.

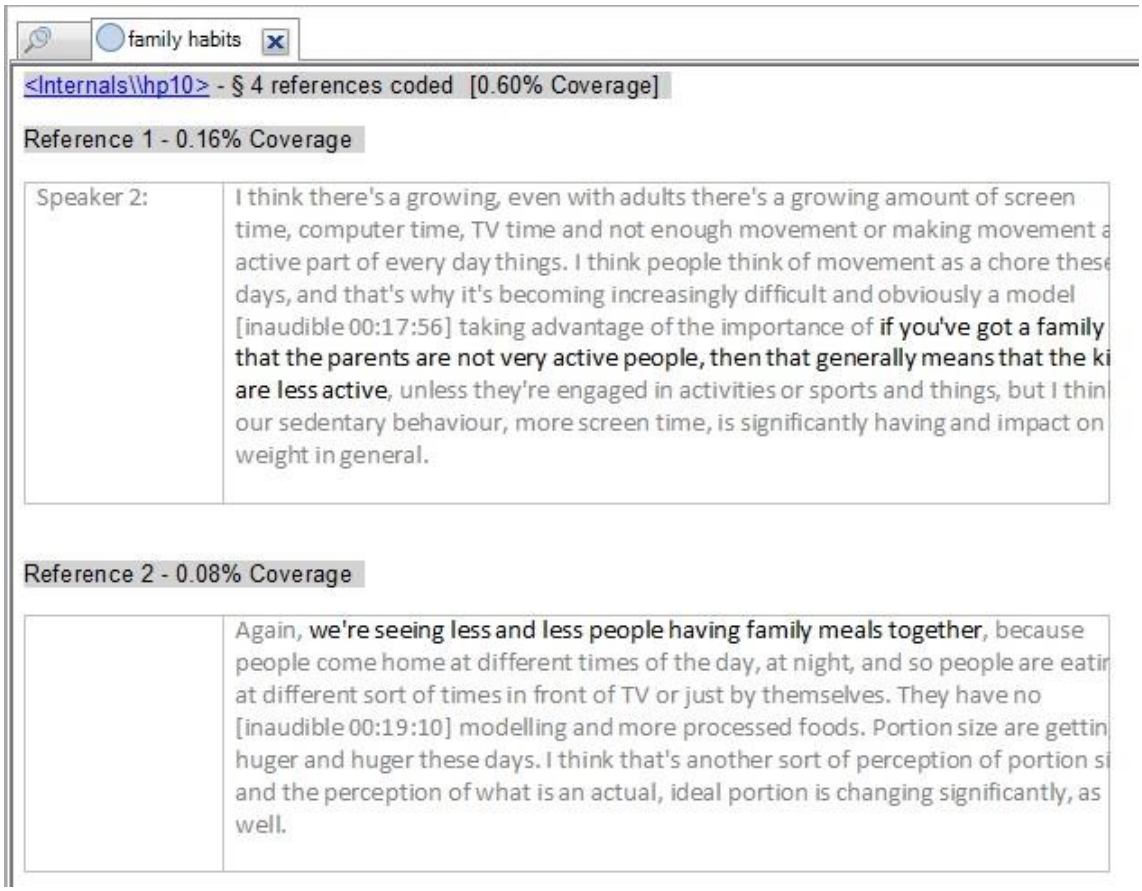
Perception: An interpretation or understanding of a phenomenon based on preconceived ideas and/or lived experiences.

Sedentariness: Refers to an individual's engagement with sedentary behaviour or time spent sitting. It is associated with a lack of movement.

Stigma: An attribute that is socially unpleasing or unacceptable resulting in judgment and discrimination from others.

Weight bias: A tendency to stereotype, discriminate or judge a person based on their weight.

List of Tables and Figures



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Background

Children with obesity are a particularly vulnerable group. Children are still developing and have specific dietary needs and physical activity requirements to ensure optimal development. Childhood obesity is normally an indication these requirements are not being met. Yet children are generally not responsible for their health-related behaviours because they are dictated and shaped by caregivers, normally their parents.

In Western cultures, parents of overweight children are often seen as neglectful or overly permissive; both contribute to perceptions of bad parenting. Despite the fact that most parents love their children and try to do what they think is best for them, they are often blamed for their child's being overweight rather than assisted to address the issues contributing to the weight gain.

Little information exists on what services are available in Australia to assist children with obesity. Public health websites suggest speaking to one's GP about overweight or obesity concerns; however, most studies report GPs are relatively uninterested, under-resourced and untrained to clinically manage childhood obesity. Due to my background in nutrition, I assumed, dietitians would be treating childhood obesity as they are trained to deal with nutritional complications. However, hardly any literature exists around dietitian-managed childhood obesity in Australia. This sparked a curiosity to explore who, if anyone, was clinically managing childhood obesity in Australia and how they were doing it.

Furthermore, there was scant literature reporting the experiences of parents with children undergoing childhood obesity management in Australia. Considering childhood obesity appears a popular topic in the social space — and one on which everyone seems to hold an opinion — studies around Australia's approach to clinical management are sorely lacking.

There are clear differences in the perceptions of a phenomenon between people who directly experience that phenomenon and those who do not. The element of experience is fundamental to interpreting perceptions of how phenomena affect people and also fundamental to understanding how this experience can be improved. This concept guided my choice of participants and guided the methodology used to understand what childhood obesity management *is* for those involved.

Thus, the current doctoral research was undertaken to contribute to an evidence base of Australian health professionals' and parents' experiences and perceptions of childhood obesity management; and what they mean to clinical treatment in the Australian context.

1 Introduction

The widespread issue of childhood obesity has become a global phenomenon and public health problem. Childhood obesity is a chronic health condition defined by a body composition of excessive fat, which can impact on normal child growth and development both physically and socially. In Australia, prevalence is around seven percent amongst five to seventeen-year-olds and this is similar to statistics in other developed countries. Not only is it prevalent, but the consequences of childhood obesity also impact child physical health and psycho-social well-being and adult outcomes (L. Y. Gibson et al., 2017).

This introductory chapter will firstly provide a brief overview of the problem of childhood obesity including prevalence, cause and variation, risks and impacts on child health and well-being and the broader social and economic implications. The chapter will argue public health efforts that have sought to reduce the prevalence of obesity have had little success returning already obese children to a healthy weight. It also proposes clinical management is necessary to address and intervene in the development of health consequences associated with childhood obesity. Therefore, a need to understand how childhood obesity is clinically managed in Australia is crucial to interpreting the effectiveness of current interventions.

Following this description of the problem childhood obesity, the purpose of the study, rationale, research question, study objective and significance will be discussed. The chapter will conclude with a description of the overview of the thesis.

1.1 Statement of the problem

1.1.1 The prevalence of childhood obesity in Australia

In 2014-15, more than a quarter (27.4%) of Australian children aged 5-17 years were overweight or obese, and this figure comprised 20.2% overweight and 7.4% obese. Figure 1 and Figure 2, below, show there has been no change in the proportion of children who were overweight or obese since 2011-12 (25.7%). However, the proportion of children overweight since 2007-08 has increased by about 3% (ABS, 2009). Longitudinal studies on national trends of childhood obesity and overweight show the prevalence of overweight and obesity increased greatly between 1985 and 1996; and only slightly increased or plateaued between 1996 and 2018 (ABS, 2009, 2018; Olds, Tomkinson, Ferrar, & Maher, 2010).

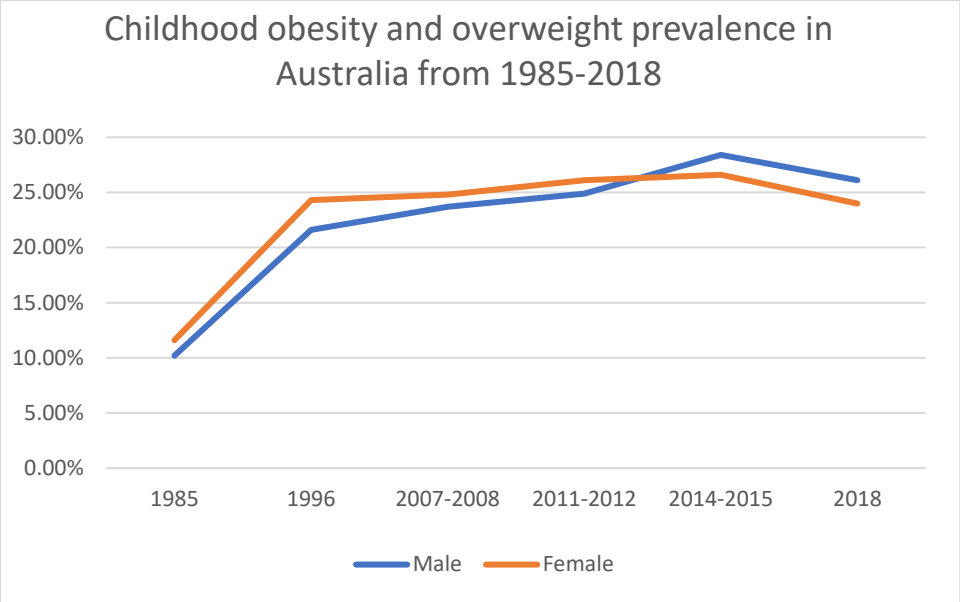

Figure 1: Childhood obesity and overweight prevalence in Australia from 1985-2018, adapted from ABS data cubes

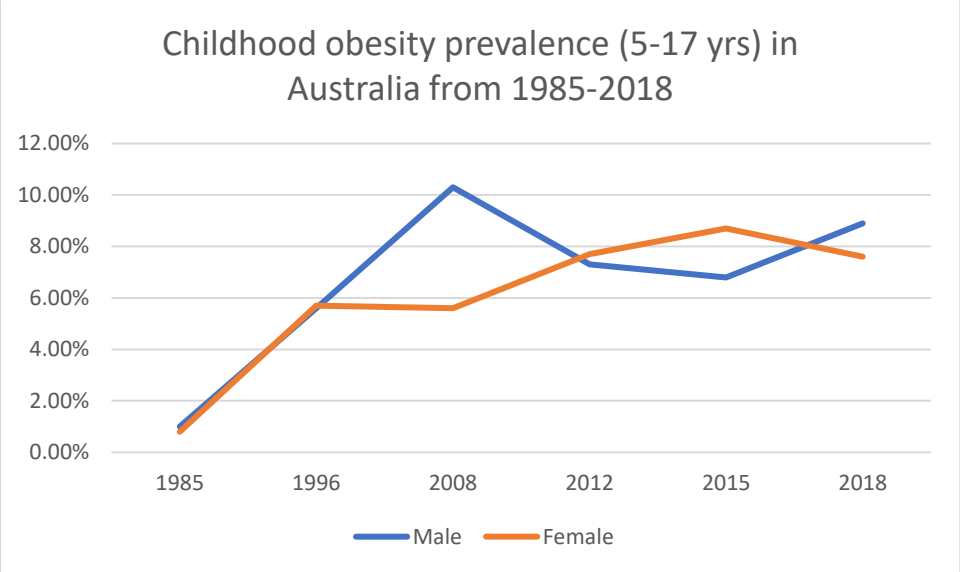

Figure 2: prevalence of childhood obesity in Australia (5-17 yrs) from 1985-2018, adapted from ABS data cubes

1.1.2 The prevalence of childhood obesity globally

The sharp rise in the rates of childhood obesity over the last forty years is not exclusive to Australia; indeed, global prevalence of childhood obesity has risen substantially in the past four decades, with varying levels and trends both by country and region (Jia, Xue, Wang, & Zhang, 2017; NCD-RisC, 2017; Ng et al., 2014). Obesity rates in high income countries have plateaued over the last decade (NCD-RisC, 2017; OECD, 2014; Stamatakis, Wardle, & Cole, 2010; Stamatakis, Zaninotto, Falaschetti, Mindell, & Head, 2010). However, global data suggests low-income and middle-income countries are on an upward trend (Jia et al., 2017; NCD-RisC, 2017; Wabitsch, Moss, & Kromeyer-Hauschild, 2014).

Global statistics from 2016 show the highest rates of childhood obesity is amongst Pacific Island countries, the Middle East and North Africa, with childhood obesity rates above 30% for boys and girls (5-19 years) (NCD-RisC, 2017). High-income English-speaking countries, such as Australia, New Zealand, the UK, Ireland, the USA and Canada have similar BMI trends for childhood overweight and obesity and cardiometabolic risk factors, distinct to other countries in their geographical regions (NCD-RisC, 2016a, 2016b, 2017). With the exception of the USA, prevalence in these countries range from 9.8% (Mellin, Neumark-Sztainer, Story, Ireland, & Resnick) to 12.4% (Australia) (W. H. O. WHO, 2017). The USA has the highest prevalence among high-income English-speaking countries with a childhood obesity rate nearly twice as high as that of Australia (21.4%) (W. H. O. WHO, 2017). In low- and middle-income countries, there was a rapid movement from childhood underweight to childhood overweight and obesity from 1975 to 2016, particularly in countries of east Asia, Latin American and the Caribbean (NCD-RisC, 2017). A 2010 analysis of prevalence among developing countries identified Asia and Africa as having lower prevalence than other continents, with Asia having the lowest prevalence (Gupta, Goel, Shah, & Misra, 2012).

While the prevalence of childhood obesity in some Western, English-speaking countries like Australia appears to have plateaued, evidence suggests the severity of obesity in children is increasing (See ***Table 1***). This is concerning because, as severity increases, the impact of obesity on child health and well-being increases (Garnett, Baur, Jones, & Hardy, 2016; Sabin, Kao, Juonala, Baur, & Wake, 2015).

Table 1: International trends in severe childhood obesity

Study	Year of study	Nationality	N	Ages	Classification	Prevalence overweight/ obesity
(Skinner, Ravanbakht, Skelton, Perrin, & Armstrong, 2018)	1999-2016	USA	4063-3340	2-19	Class I ≥95th percentile; class II obesity ≥120% of the 95th percentile; and class III obesity ≥140% of the 95th percentile	Class I: 14.6%-18% INCREASE; Class II: 4.0-6.0% INCREASE Class III: 0.9%-1.9%
(Garnett et al., 2016)	1985-2012	Australian	15552	7-15	Class I ≥95th percentile; class II obesity ≥120% of the 95th percentile class III obesity ≥140% of the 95th percentile	Morbid obesity 0.2% to 1.8% INCREASE Severe/class II 3% to 2%. INCREASE Severe/Class III 0.1% to 0.5% INCREASE
(Ells et al., 2015)	2006-2013	England	873,584-1,076,824	4-5 10-11	Severe obesity defined using 99.6th centile of UK90 BMI growth chart; obese II 99.87th; obese III 99.98th centiles	99.6th centile: (4-5yrs) 2.35%-2.1%; (10-11yrs) 3.1%-3.4%. 99.87th centile: (4-5yrs)1.45%-1.3% ; (10-11yrs)1.2%-1.4% 99.98th centile: (4-5yrs) 0.6%-0.6%; (10-11yrs)0.2%-0.2% NO SIGNIFICANT INCREASE
(Utter, Denny, Teevale, Peiris-John, & Dyson, 2015)	2007-2012	New Zealand				Severe obesity in pacific adolescents 9%-14% INCREASE
(Lombardo et al., 2015)	2008-2010	Italy	47,251-41,542	8-9	WHO: 99th centile IOTF: 97.7th centile	Severe obesity from 5.1% WHO 3.1% IOTF-4.5% WHO 2.7 IOTF DECREASE
(Y. C. Wang, Gortmaker, & Taveras, 2011)	1976-2006	USA	7201-15980	2-19	Severe obesity ≥120% of the 95th percentile	Severe obesity 1.2%-4.9% INCREASE

(J. A. Skelton, Cook, Auinger, Klein, & Barlow, 2009)	1999-2004	USA	12384	2-19	Class I: 95th-96.9 percentile; Class II: 97th-98.9th percentile; Class III: BMI≥99th percentile	Class I: 16%; Class II:10.8%; Class III: 4%

(Garnett et al., 2016) demonstrated that countries that have experienced increases in the prevalence of severe childhood obesity include the USA, New Zealand and Australia (J. A. Skelton et al., 2009; Skinner, Perrin, & Skelton, 2016; Skinner et al., 2018; Utter et al., 2015; Y. C. Wang et al., 2011).

Exponential increases were observed in the prevalence of severe Class 2 and morbid Class 3 obesity in Australian children from 1985 to 2012 (Garnett et al., 2016).

While each study analysed data from different age groups, all studies that included both children and adolescents showed that the prevalence of severe obesity in adolescents is higher than in children. Furthermore, studies suggest boys are at higher risk of severe obesity than girls (Ells et al., 2015); and certain ethnic groups and lower socio-economic status (SES) populations have higher rates of severe obesity than Anglo-white and higher SES populations (Ells et al., 2015; Flores & Lin, 2013; Labree et al., 2015; Utter et al., 2015; Y. C. Wang et al., 2011).

1.1.3 Cause and variation in childhood obesity prevalence

At a very basic level, obesity occurs when the energy consumed is less than the energy expended by an individual; that energy normally becomes stored as adipose tissue (fat) and over time can accumulate to have a pathologic effect on the body's ability to function well. The lifestyle components that lead to the energy imbalance associated with obesity are driven by behaviours influenced by both genetics and environment (Jequier & Tappy, 1999; Rennie, Johnson, & Jebb, 2005). The complex interconnectedness of biological, genetic, behavioural and environmental components is well described by the UK's 2007 Foresight Report which systematically mapped determinants of obesity and their interactions (Butland et al., 2007b). The variation in childhood obesity prevalence is attributed to these genetic, behavioural and environmental factors present within a population.

1.1.3.1 Genetic and biological factors that impact childhood obesity

Genetic factors are critically important for determining how different individuals respond within a given environment (J. O. Hill & Peters, 1998). Genetics are involved both in the way our bodies expend energy, and in our preferences for certain foods (Claude Bouchard, 2009; C. Bouchard et al., 1990; Adam Drewnowski, Krahn, Demitrack, Nairn, & Gosnell, 1992; A. Drewnowski & Rock, 1995; Garver et al., 2013; J. O. Hill & Peters, 1998).

Genetic influences or predispositions to weight gain are also driven by race/ethnicity (Zilanawala et al., 2015). For instance, within Australia, children from Pacific Islander and Middle Eastern backgrounds are more likely to be obese than those from Australian Caucasian or Asian backgrounds (J. A. O'Dea, 2008).

Biological components that increase the risk of developing obesity are parental weight status, child birth weight and gestational weight gain during pregnancy (Claude Bouchard, 2009; Cunha et al., 2013; Flores & Lin, 2013; Oken, Taveras, Kleinman, Rich-Edwards, & Gillman, 2007; Whitaker, Wright, Pepe, Seidel, & Dietz, 1997).

1.1.3.2 Environmental factors that impact childhood obesity

The social and physical aspects of an environment impact on what foods and opportunities for physical activity are available to populations. The current environment in wealthy nations, like Australia, has been described as "obesogenic" in that the foods and activities readily available promote obesity. Specific characteristics of an obesogenic environment present in Australia and other high-income countries include:

- Accessibility to calorie-dense food; for example, processed foods and sugar-sweetened beverages and takeaway foods (Ludwig, Peterson, & Gortmaker, 2001; Malik, Willett, & Hu, 2009)
- Promotion of sedentary behaviour; for example, spending excessive time in front of a screen (Haug et al., 2009)
- Discouragement of physical activity; for example, increased reliance on 'convenient', 'safe' cars due to new infrastructure which favours non-pedestrian transport (Bleich, Ku, & Wang, 2011).

1.1.3.3 Demographic factors that impact childhood obesity

Demographic factors also influence the way in which individuals interact with their environment, particularly in relation to how health behaviours are formed. Income, education and geographic location can impact on the accessibility of healthy foods and exercise. Furthermore, ethnicity and cultural identity also contribute to how health is viewed within cultures; including what foods and activities are considered healthy and what a healthy person looks like (Zilanawala et al., 2015). Demographic factors are related to variation in the prevalence of childhood obesity in populations (Anand et al., 2019; Chung et al., 2016; Farajian et al., 2013; Gupta et al., 2012; L. L. Hardy, King, Hector, & Baur, 2013;

Hemmingsson, 2018; Lissner et al., 2016; Liu et al., 2016; Lynch, Wang, & Wilcken, 2000; J. O'Dea, Chiang, & Peralta, 2014; Ramsay et al., 2017; Youfa Wang & Lim, 2012; Y. Wang & Lobstein, 2006; Y. C. Wang et al., 2011; Zilanawala et al., 2015).

1.1.3.2a Socio-economic status

Childhood obesity prevalence occurs along socio-cultural gradients dependent on income, education, access to nutritious food, access to and affordability of sporting facilities, health literacy, outdoor environment and cultural norms of eating, exercising and ideal weight (Crowle & Turner, 2010; J. O'Dea et al., 2014; Stunkard, d'Aquili, Fox, & Filion, 1972).

In lower-income countries, prevalence is higher amongst children of higher SES (Dannemann, Ernert, Rücker, Wiegand, & Babitsch, 2011; De Jong, Schokker, Visscher, Seidell, & Renders, 2011; Farajian et al., 2013; Hajian-Tilaki & Heidari, 2013; Li, Memarian, Sundquist, Zöller, & Sundquist, 2014; Madden, 2017; Moreno et al., 2004; R. L. Vollmer, Adamsons, Foster, & Mobley, 2017). Conversely, in high-income countries, such as Australia, prevalence is higher amongst children of lower SES families and communities (Crowle & Turner, 2010; OECD, 2014; Weaver et al., 2019). However, these correlations are reversed in some migrant and cultural backgrounds (Chung et al., 2016; Sheila Cyril, Nicholson, Agho, Polonsky, & Renzaho, 2017; Dannemann et al., 2011; De Jong et al., 2011; Hemmingsson, 2018; Li et al., 2014; Offer, Pechey, & Ulijaszek, 2010; André M. N. Renzaho, 2004; Sanou et al., 2014; Stamatakis, Wardle, et al., 2010; Weaver et al., 2019; Zilanawala et al., 2015).

Childhood obesity in Australia follows patterns of other wealthy nations: prevalence is associated with lower socio-economic status, lower levels of education, poor access to nutrition and sporting activities, poor health literacy, living rurally and being of non-Anglo background (Crowle & Turner, 2010; Grech & Allman-Farinelli, 2016; J. O'Dea et al., 2014).

1.1.3.2b Ethnicity and cultural identity

One of the greatest predictors of obesity in Australian children is ethnicity and cultural identity (Crowle & Turner, 2010; J. O'Dea et al., 2014). Non-white populations tend to have a higher prevalence of childhood obesity and this may be due to major racial differences in wealth and education (Caprio et al., 2008; Crowle & Turner, 2010; J. A. O'Dea, 2008; Waters et al., 2008). Acculturation of migrants may increase the risk for obesity as they adopt

Western dietary patterns that have been associated with increased risk of obesity (Dannemann et al., 2011; Naja et al., 2015; A. M. N. Renzaho, Swinburn, & Burns, 2008; Sanou et al., 2014). Migrants are exposed to new food options and often have little nutrition literacy around the Western Diet, making them particularly vulnerable to poor dietary choices (Sheila Cyril et al., 2017; Delavari, Swinburn, Sønderlund, Mellor, & Mohebbi, 2014; Fryer, Mackintosh, Stanley, & Crichton, 2012; A. M. N. Renzaho et al., 2008; Sanou et al., 2014).

Furthermore, body shape and size ideals also differ between cultures, with non-Anglo cultures celebrating a larger body size as a sign of health and wealth (Alexander, Alfonso, Cao, & Hansen, 2017; X. Chen & Wang, 2012; Sheila Cyril et al., 2017; Gualdi-Russo et al., 2012; J. D. Lau, Au, Chao, Elbaar, & Tse, 2018; Marsh, Hau, Yu, & Sung, 2007; Nightingale, Rudnicka, Owen, Cook, & Whincup, 2011; André M. N. Renzaho, 2004). While different cultures celebrate different foods and different body types, childhood obesity has been associated with several health risks and poor adult health outcomes.

1.1.4 Impact of childhood obesity on child health and well-being

Dyslipidaemia, metabolic syndrome, type 2 diabetes (T2D), sleep apnoea, early onset puberty and asthma are amongst the most common co-morbidities observed in children with obesity (Biro & Wien, 2010; Sabin et al., 2015; WHO, 2014). These chronic conditions that are now being observed in children, whilst sharing similar characteristics to those seen in adults, present uniquely in children. There has been some evidence that T2D progresses at double the rate[1] in children than adults (Santoro, 2013).

Musculoskeletal development and functional biomechanics are also impacted by excess weight in childhood (De Sá Pinto, De Barros Holanda, Radu, Villares, & Lima, 2006; Paulis, Silva, Koes, & van Middelkoop, 2014; Perry, Metcalfe, Lane, & Turner, 2018; Stovitz, Pardee, Vazquez, Duval, & Schwimmer, 2008; Tsiros, Coates, Howe, Grimshaw, & Buckley, 2011; Wearing, Hennig, Byrne, Steele, & Hills, 2006; Wills, 2004). Overweight children are more prone to bone fractures than their normal weight counterparts due to the strain of excess weight on a developing musculoskeletal system (De Sá Pinto et al., 2006; Paulis et al., 2014; Perry, Metcalfe, Costa, & Van Staa, 2017; Perry et al., 2018; Tsiros et al., 2011; Wearing et al., 2006; Wills, 2004). There has been a positive association of knee, hip and foot pain in

[1] T2D in adults takes roughly 10 years to develop with beta-cell function reducing at a rate of about 7% a year. In children with T2D beta cell function has been observed reducing at a rate of about 15% per year (Santoro, 2013)

children with obesity; relative to severity of obesity (De Sá Pinto et al., 2006; Paulis et al., 2014; Stovitz et al., 2008; Taylor et al., 2006). These musculoskeletal consequences impact on physical mobility in children with obesity and can act as deterrents from participation in physical activities (Shultz, Anner, & Hills, 2009; Taylor et al., 2006).

Some research also suggests that obesity during childhood is associated with various measurable changes to cardiovascular structure and function (A. T. Cote, Harris, Panagiotopoulos, Sandor, & Devlin, 2013; Gökçe, Atbinici, Aycan, Cınar, & Zorlu, 2013). It is found to be associated with impaired function including cardiorespiratory fitness and performance and motor skills (Tsiros et al., 2011).

Children with obesity also suffer a poorer health-related quality of life (HRQOL) compared to their normal weight counterparts (K. Fontaine & Barofsky, 2001; Friedlander, Larkin, Rosen, Palermo, & Redline, 2003; Helseth, Haraldstad, & Christophersen, 2015; Kelsey, Zaepfel, Bjornstad, & Nadeau, 2014; Morrison, Shin, Tarnopolsky, & Taylor, 2015; Varni, Limbers, & Burwinkle, 2007; Wille, Erhart, Petersen, & Ravens-Sieberer, 2008; M. H. Zeller & Modi, 2006; M. H. Zeller, Roehrig, Modi, Daniels, & Inge, 2006). The psychosocial burden reported in HRQOL studies associated with childhood obesity may have lasting effects on self-esteem, body image and economic mobility (Gortmaker, Must, Perrin, Sobol, & Dietz, 1993; Must & Strauss, 1999; M. H. Zeller & Modi, 2006). This is confirmed by research that found children with an overweight or obese BMI consistently report experiencing lower self-esteem than their normal weight counterparts (Danielsen et al., 2012; Delgado Floody et al., 2018; Fox & Farrow, 2009; Franklin, Denyer, Steinbeck, Caterson, & Hill, 2006; French, Story, & Perry, 1995; Sánchez Arenas & Ruiz Martínez, 2015; Veugelers & Wang, 2008; F. Wang, Wild, Kipp, Kuhle, & Veugelers, 2009).

Weight stigmatisation leads to bullying and teasing by peers which has been linked to body image issues, disordered eating, depression and even suicide (Stevens, Herbozo, Morrell, Schaefer, & Thompson, 2016; Tomiyama et al., 2018). Children with obesity are also less likely to form platonic and romantic relationships, attain higher levels of education and secure employment (Gortmaker et al., 1993; Laitinen, Power, Ek, Sovio, & Järvelin, 2002; Stevens et al., 2016). (Strauss & Pollack, 2003) have shown these social shortcomings have a flow-on effect on diminished employment outcomes, economic status and self-worth in adulthood (Laplagne, Glover, & Shomos, 2007).

Furthermore, obesity in childhood has a high likelihood of continuing into adulthood which exposes these individuals to a range of chronic health conditions and premature mortality (Daniels, 2006; K. R. Fontaine, Redden, Wang, Westfall, & Allison, 2003; Kelsey et al., 2014; Stevens et al., 2016).

1.1.5 Broader impacts of childhood obesity

These issues occurring at the individual level also impact at a broader systemic level by creating economic challenges due to placing increased strain on health systems and impeding workforce productivity (Crowle & Turner, 2010; Gates, Succop, Brehm, Gillespie, & Sommers, 2008; Goettler, Grosse, & Sonntag, 2017; Hamilton, Dee, & Perry, 2018; Laplagne et al., 2007). Results of a longitudinal study of the healthcare costs of 4-5 year-olds revealed children who were overweight resulted in a $9.8 million increase in Medicare costs compared to their normal-weight counterparts (Au, 2012). Based on an estimation of loss of productivity, direct healthcare costs and direct investment for remediation, adaptation and prevention the McKinsey Global Institute reported the global cost of obesity was $2 trillion annually (Dobbs et al., 2014).

1.1.6 Population-based childhood obesity initiatives

Peak global bodies on population health acknowledge prevention is key to reducing the impact of childhood obesity on public health. Several strategies have been suggested that have promising results for halting the prevalence of childhood obesity. Amongst these a sugar tax, reformulation of processed food, health star-rating systems and public health education campaigns are some of the proposed policies. Promising results have emerged from interventions conducted in the UK and the Netherlands from targeting sugary drinks in reducing consumption. Studies conducted in Leeds, UK and Netherlands have seen childhood obesity prevalence drop in school-aged children; however, to date not a single country has reversed its obesity epidemic (NCD-RisC, 2017; Ng et al., 2014; Roberto et al., 2015). While population-based strategies target environmental and social influences, movement to having a fully health-promoting environment is slow and educational campaigns are limited in their effectiveness in creating behaviour changes. Population-based strategies are insufficient to reverse obesity in children who have already developed it (Bell et al., 2016).

Due to the multidimensional nature of childhood obesity and severity of health consequences, clinical management which is able to provide multidisciplinary care is likely a more targeted and effective approach for improving BMI and future health outcomes in children with obesity (Mihrshahi, Gow, & Baur, 2018; Zolotarjova, Ten Velde, & Vreugdenhil, 2018). In Australia, clinical guidelines exist that acknowledge the benefits of multidisciplinary treatment for childhood obesity; however, access to this kind of treatment is limited (NHMRC, 2013; Spilchak, Denney-Wilson, King, & Baur, 2008). Therefore, the clinical management of childhood obesity in Australia is likely treated by a range of health professionals who treat patients independently (Cohen et al., 2019; NHMRC, 2013), but little is known about who (the range of health professionals) is involved in treatment, how they are treating it or the outcomes of these interventions. Furthermore, little data exists from the recipients (patients) of childhood obesity treatment outside of organised studies. There is a need to understand the experiences and perceptions of recipients of childhood obesity treatment and the health professionals delivering treatment to ensure services are providing optimal care to reduce the likelihood of developing adult obesity and its associated co-morbidities (Tarasenko, Rossen, & Schoendorf, 2014; Turner, Salisbury, & Shield, 2012; Watson, Baker, & Chadwick, 2016). Hence, I now turn to the purpose of the study, the rationale behind it and its significance.

1.2 Purpose of the study

The purpose of the study was to explore and describe how Australian health professionals and parents experience and perceive childhood obesity management. Interpretative phenomenological analysis was used as an approach to examine and describe factors that influenced the ways in which health professionals and parents experienced and perceived the phenomenon of childhood obesity management. The aim was to access information that related particularly to facilitators and barriers of management. The findings have the potential to inform the development and support of health policies and services that better suit the needs of parents and health professionals managing childhood obesity. The findings may, in turn, lead to improved health outcomes for obese children.

1.3 Rationale

There is a global increase in the prevalence and severity of chronic conditions amongst children and adolescents. Consequently, paediatric patients are requiring increased

complexity of care that existing services are ill-equipped to meet. In the context of childhood obesity management, primary care practitioners are expected to diagnose, assess and treat or refer childhood obesity whenever it presents. However, evidence from Australian studies suggest GPs rarely initiate management for childhood obesity.

There is also evidence to suggest there are a lack of specialist services that provide the level of care outlined by clinical guidelines to children with obesity. Health professionals from other sectors, including allied health, may also be providing management for children with obesity but few, if any, studies exist that report the range of health professionals involved and their experiences with managing this specific patient cohort.

Furthermore, understanding patient experiences are necessary to ensure service provisions are meeting patient demands (Mirzaei et al., 2013). Because children's healthcare regimes are primarily managed by their parents, especially in the case of childhood obesity, understanding parents' perceptions and experiences with paediatric weight management is crucial to test the effectiveness of current approaches to management; particularly in regard to patient-engagement, satisfaction and adherence (Mirzaei et al., 2013).

The treatment of chronic health conditions requires well-informed strategies that speak to the needs of people being treated and those providing treatment. The knowledge gaps, particularly those identified in relation to barriers experienced in the clinical management of childhood obesity by health professionals and parents, have implications for the outcomes of childhood obesity management. The development of evidence-based strategies to support health professionals and parents managing childhood obesity depends upon research that involves their input.

1.4 Research question

This study was guided by the following question: What are Australian health professionals and parents' perceptions of and experiences with childhood obesity management?

1.4.1 Study objectives

The objectives of the study were to:

1. Explore and describe the following issues amongst health professionals managing childhood obesity in Australia:

- Perceptions of their roles in managing childhood obesity
- Their current approaches to childhood obesity management
- Perceptions of what optimal childhood obesity management should involve
- Barriers that hinder their ability to provide optimal childhood obesity management
- Facilitators that enable better provision of care to children with obesity
- Reflections and insights on the intended outcomes of childhood obesity management.

2. Explore and describe the following issues amongst parents of children with obesity undergoing weight management therapy:
    - Experiences with the healthcare system in relation to their child's obesity
    - Perceptions of the impact of their child's obesity on their child's health and wellbeing
    - Perceptions of their interactions with childhood obesity services
    - Barriers that impact on their ability to adhere to clinical recommendations
    - Barriers that impact on their ability to access services
    - Facilitators that enable them to achieve clinical recommendations.
3. Discern similarities and differences between the perceptions of childhood obesity management between the health professional and parent participants.

1.5 Significance of the study

The study is significant to childhood obesity management in the Australian healthcare context because it contributes to an evidence base that is based on the perceptions and experiences of Australian health professionals and parents. There is a lack of research into the clinical management setting of healthcare providers in the context of childhood obesity (A. W. Brown et al., 2019; Cohen et al., 2018; Spilchak et al., 2008). My review of the literature suggests Australian studies into the clinical management of childhood has relied on quantitative strategies to interpret perceptions and key issues, while qualitative data is lacking (Emma Mead et al., 2017). The existing literature also reports mainly on the experiences of primary care providers, mostly general practitioners and excludes experiences and perceptions of additional healthcare professionals.

This project addressed a gap in the literature by providing a platform for Australian health professionals and parents to share their views on how they experience and perceive their interactions with childhood obesity management. It identifies barriers both to health professionals' abilities to effectively treat, as well as for parents managing a child for obesity, that have implications for the efficacy of current policies and strategies within the current health infrastructure. Furthermore, to my knowledge, it is the first of its kind to include the

participation of a range of health professionals, including, dietitians, psychologists, paediatricians, physiotherapists and specialist clinicians.

The stories of four parents of children with obesity undergoing weight management therapy at different life stages contributes to the significance because childhood obesity impacts differently at different life stages, and this has implications for treatment. These stories raise concerns for the long-term consequences of progressive obesity and highlight the need for early intervention.

1.6 Overview of the thesis

The thesis contains seven chapters. The purpose of Chapter One is to introduce the research by providing a general overview of the problem (Valerio et al.); this includes information on the global and domestic prevalence of childhood obesity, causes, consequences and current public health initiatives aimed at addressing it. Gaps in literature are identified and the chapter explains how the research question addresses these gaps. Finally, the purpose and significance of the research and its objectives are presented.

Chapter Two presents a literature review of health professionals' and parents' approaches-to and perceptions-of childhood obesity management. It includes a variation of clinical definitions for childhood obesity and identifies which of these definitions are applied in to childhood obesity management. The Australian clinical guidelines for the management of overweight and obesity are discussed and compared to international clinical guidelines. Management of childhood obesity is then discussed in the context of the Australian health care system, including the roles and responsibilities of primary, secondary and tertiary services and their capacity to manage childhood obesity. Next, the relevance of perception theory in healthcare is introduced, followed by a comprehensive overview of literature reporting health professionals' and parents' perceptions of childhood obesity management.

In Chapter Three, the methodology used to address the study objectives is described. It is argued that interpretative phenomenological analysis (IPA) (Inouye et al.) is an appropriate approach to explore the experiences and perceptions of health professionals and parents managing children with obesity. This chapter outlines the theoretical framework of the research, and discusses how IPA was applied to carry out data collection and analysis. The

study design is explained, including why health professionals and parents are presented as two studies. Finally, ethical considerations are addressed.

Chapters Four presents the findings from Study 1 (Health professionals) that emerged from the data analysis. A description of the sample of health professional participants is included at the beginning of the chapter. This chapter reports the findings of Study 1 (Health Professionals) and presents the data under four main headings that explain: how health professionals conceptualised obesity, their experiences and perceived roles in clinical management, the types of barriers they experienced and their intended outcomes of management.

Chapter Five positions the findings of the findings from Study 1 within the contemporary literature. The structure and content of the discussion are centred around the main findings that contribute to the existing literature.

Chapter Six provides a description of the sample of parents who participated in the study; and reports the findings of Study 2 (parents) and presents them as individual case studies. The reason for this was to add richness to the data provided by the narratives of personal experience and to remain consistent with IPA's ideographic commitment. The chapter concludes with a summary of the similarities and differences between the participants' perceptions and experiences with childhood obesity management; and discusses these comparisons within the context of contemporary literature.

Chapter Seven expands upon the main findings around how health professionals and parents in my research perceived childhood obesity management. It compares these findings between the two groups of participants in the studies presented and draws on the wider literature to interpret implications of these findings for childhood obesity management. The purpose of this chapter is to discuss practice and policy implications and to provide recommendations based on the the findings from both Study 1 and Study which are supported by contemporary literature. The chapter discusses strengths and limitations of the study. Finally, it provides recommendations for clinical practice, health professional training, public health policy and suggestions for further research.

Chapter Eight provides concluding statements by summarising the main findings and implications of these findings to childhood obesity management in Australia.

2 Background and Literature Review

The purpose of this thesis is to explore the perceptions of childhood obesity management from the perspectives of Australian health professionals and parents with children undergoing weight management therapy. Thus, this chapter presents background information about childhood obesity management as it is represented in the literature; and presents a narrative review of health professional and parental perception literature in the context of childhood obesity management.

Section 2.1 introduces and summarises childhood obesity management literature and compare and contrast Australian and non-Australian literature to provide the reader with the background of how childhood obesity is clinically diagnosed and managed; and how Australia's broader healthcare setting impacts on the clinical practice of childhood obesity management.

Section 2.2 provides a syntheses and analyses of perception literature as it relates to childhood obesity management. The first section in chapter 2.2 provides a rationale for exploring perceptions of health phenomenas between clinicians and patients. It discusses the importance of perception theory in healthcare and how health professionals' and lay people's perceptions influence the provision and use of service.

As the primary objective of my thesis is to explore health professional and parental perceptions of childhood obesity management, I have systematically searched for studies and analysed their findings so that I could identify gaps in the literature that my own research could respond to. I have also separated Australian and non-Australian literature to identify gaps specific to the Australian context which my studies can begin to provide insight.

2.1 Background: Childhood obesity management

The widespread issue of childhood obesity has become a global phenomenon and public health problem which impacts at the individual, societal and economic level. Despite global efforts to reduce the prevalence of childhood obesity through preventative public health measures, outcomes have had little impact on the physical changes of already obese school children (T. Brown et al., 2019). The prevalence of childhood obesity in Australia has stagnated over the last ten years, which may mean that prevention efforts have proven

effective in halting the rise of childhood obesity; or it may mean that saturation has been reached (Wabitsch et al., 2014).

The majority of public health research around childhood obesity has focused on prevention; however, there is a paucity of information regarding the clinical management of childhood obesity (Mihrshahi et al., 2018; Sabin & Kiess, 2015). Research has suggested that traditional methods of weight reduction have been largely unsuccessful (Sabin et al., 2015). This has serious implications for the success of clinical management for childhood obesity in Australia. This chapter will review and compare both international and Australian literature around the recommended approaches to childhood obesity management; and experiences and perceptions of health professionals and parents involved in the clinical management of childhood obesity to identify gaps and develop a rationale for future research. Important elements of childhood obesity management include clinical definitions for childhood obesity.

2.1.1 Clinical definition of 'obesity' in Australia

This section covers clinical definition of childhood obesity because they differ between institutions which have implications for research and the experience of childhood obesity management. There are three main standardised definitions of childhood obesity used globally in clinical practice and research and are based on interpretations from the following three health organisations:

1. World Health Organisation
2. International Obesity Task Force
3. United States Centres for Disease Control

Australia uses the US Centres for Disease Control and Prevention (US-CDC) BMI cut-offs and growth charts for childhood obesity for children of ages 2-18, and the WHO cut-offs for children aged (0-2) (NHMRC, 2013).

While each definition calculates child obesity slightly differently, all three rely on three common components:

(i) an anthropometric indicator (BMI);
(ii) a reference population with which to compare the index child or community (a standardised growth chart based on a country's normal standard of growth) and
(iii) cut-off points (depicted as standard deviations or percentiles that correspond with growth patterns of children and adolescents specific to a country) that best

identify risk of obesity-related morbidity and mortality (de Onis & Lobstein, 2010).

It is important to note that not all countries have developed their own growth charts; for instance, Australia uses the US-CDC growth chart which is based on a US population, rather than an Australian population.

Body mass index (BMI) is a measure of body mass relative to height and is the most universally applicable anthropometric indicator for classifying overweight and obesity (de Onis & Lobstein, 2010). BMI[2] is calculated by taking a person's weight (kg) and dividing it by their height-in-metres, squared (m^2). In children, BMI is then plotted on a growth curve for age chart determined by the organisation[3].

Table 2, below, outlines the differences of the standardised definitions for obesity of each of the three organisations used internationally.

[2] BMI= kg/m^2

[3] While adult BMI was developed to create a diagnostic reference point for clinical practice based on biomedical, population-based data, child growth charts were created based on statistical and theoretical indications of growth over time and not based on actual existing data on health outcomes. It is also important to note that child growth charts were not created as clinical diagnostic tools but as indications of growth over time to inform of a need for further investigation as to why that child may not be following a normal trajectory of growth.

Table 2: Definitions of childhood normal weight, overweight and obesity

Definition by organisation:	Cut-off point for overweight (BMI) compared to country-standardised growth chart	Cut-off point for obesity (BMI) compared to country-standardised growth chart
WHO (0-5 yrs)	+2 SDs	+3 SDs
WHO (5-19 yrs)	+1 SD	+2 SDs
IOTF (2-18 yrs)	BMI 25; 95th centile (+1.64 SDs)	BMI 30; 97.7th centile (+2 SDs)
US-CDC (2-18)	85th-95th percentile	>95th percentile

The WHO has its own Child Growth Standards for assessing growth and development; and is a reference-point based on child growth in optimal conditions (i.e. child breast-fed for 6 months, non-smoking mother, optimal nutrition requirements) (W. H. O. WHO, 2006). The WHO has different ways of assessing childhood obesity in children under five years of age to allow a wider range of variation in a population that is still growing (W. H. O. WHO, 2017).

IOTF cut-offs are used primarily for research purposes and not recommended for clinical use when assessing child growth (de Onis, Blossner, & Borghi, 2010). IOTF cut-offs account for body sizes differing by country, for instance, a BMI of 23 is considered overweight for an Asian population. IOTF obesity prevalence rates are lower than the definitions created by the WHO and US-CDC due to higher centile cut-offs (de Onis & Lobstein, 2010). It also accounts for morbid obesity at a BMI of 35.

US-CDC calculates overweight at a BMI for age between the 85th and 95th percentile of a country's standardised growth chart; and calculates obesity at anything above the 95th percentile of BMI for age (US-CDC, 2018).

2.1.2 The Evidence: What works

The evidence base for the clinical management of childhood obesity is limited and intervention outcomes are inconsistent (A. W. Brown et al., 2019; Hennessy et al., 2019; Robertson, Murphy, & Johnson, 2016). While results of reported interventions vary from

having insignificant effects on child BMI to significant, it is widely accepted a multidisciplinary approach to childhood obesity management and interventions enhances likelihood of success (Emma Mead et al., 2017; Sim, Lebow, Wang, Koball, & Murad, 2016; Zolotarjova et al., 2018). There is a lack of reliable data about the correct combination of intervention components, dose and target populations with consistently effective outcomes(A. W. Brown et al., 2019; Emma Mead et al., 2017; Zolotarjova et al., 2018).

Evidence suggests family-based interventions that incorporate a positive reinforcement and goal-setting approach to change diet and physical activity habits are effective in reducing child BMI and improving weight-related outcomes, particularly in young children (Taveras, Marshall, Kleinman, & et al., 2015; Zolotarjova et al., 2018). There have also been some clinical trials that suggest pharmacological interventions using metformin, sibutramine, orlistat and fluoxetine may result in minor improvements to children's BMI; however, it is important to note most of these drugs are not licensed for use amongst children or are no longer available (E. Mead et al., 2016).

Because of heterogeneity between studies there is still no consensus on the number of contact hours required with an intervention to create change in behaviours. This is also possibly because treatment intensity and effect size is dependent upon the "readiness to change" status of each person. Therefore, behaviour change occurs at a different threshold of exposure to an intervention for each person; reinforcing the concept that approaches to effective childhood obesity management and interventions are not one-size-fits-all (Heerman, JaKa, et al., 2017).

2.1.3 Clinical guidelines for managing childhood obesity

2.1.3.1 Australian clinical guidelines for managing childhood obesity

The clinical management of childhood obesity in Australia is guided by the 2013 NHMRC *Clinical practice guidelines for the management of overweight and obesity in adults, adolescents and children in Australia* (NHMRC, 2013). Few health professionals are trained in paediatric weight management therefore the guidelines are the main tool available to health professionals who choose to address childhood obesity (H. Cygan, Reed, Lui, & Mullen, 2018; Dainty, Reith, & Taylor, 2019; Mihrshahi et al., 2018). The guidelines outline recommendations for 'best practice' including information on how to diagnose, assess, refer and provide management suggestions which acknowledge the individual aspects of overweight and obesity (p. ix).

2.1.3.2 International clinical guidelines for managing childhood obesity

The Australian guidelines, for the most part, align with clinical guidelines for the management of childhood obesity internationally (Richardson, Paulis, van Middelkoop, & Koes, 2013). Table 3 provides a summary of five internationally used guidelines. These guidelines indicate a clinical diagnosis is dependent on a clinical definition (i.e. cut-off percentiles of child BMI and growth charts). In the guidelines, assessment and approaches to management after diagnosis are similar (Richardson et al., 2013). All guidelines recommend clinicians calculate child BMI by measuring height and weight; however, recommendations for measuring additional biomarkers (i.e. lipid levels, fasting glucose) were inconsistent. For example the NICE (UK) and SIGN guidelines (Scottish) do not call for additional assessment in the primary care setting (NICE, 2014; SIGN, 2010); while the New Zealand, USA, Australian and Canadian guidelines suggest testing fasting glucose and lipid levels in certain conditions. The common characteristics of suggestions for the clinical management of childhood obesity found in the international literature listed above include:

- Implementing a 'family-based' intervention in which all family-members are encouraged to make the same lifestyle changes as the patient regardless of their own BMI
- Reducing the consumption of high kJ, low nutrient foods (i.e. sugar-sweetened beverages, discretionary foods)
- Increasing physical activity (i.e. play, active transport, incidental exercise)
- Reducing non-academic screen time
- Conditional bariatric surgery only for adolescents with severe or extreme obesity
- All (except NZ) allow for conditional adolescent use of weight-loss drug, Orlistat (Metformin only mentioned in The Australian guidelines).

Similar to the intended-outcome of The Australian guidelines, the abovementioned international guidelines aim to reduce child BMI through weight maintenance rather than weight-loss; except in extreme cases.

2.1.3.3 Family-based approach to management

A unique 'best practice' characteristic of childhood obesity management recommended by the Australian (NHMRC, 2013) and international guidelines is the application of a family-based approach with parents as the locus of control. Family-based interventions for the management of childhood obesity have been associated with more sustainable, healthy reductions in child BMI (Leonard H. Epstein, Paluch, Roemmich, & Beecher, 2007; L. H. Epstein, Valoski, Wing, & McCurley, 1990; Leonard H. Epstein, Valoski, Wing, & McCurley, 1994; Denise E. Wilfley et al., 2007). This makes sense because childhood obesity occurs within family environments which include health behaviours and family dynamics (Hecker, Martin, & Martin, 1986).

Studies in clinical management emphasise the notion that childhood obesity management should err away from a weight-based focus and emphasise the benefits of healthy lifestyle changes (Golan & Weizman, 2001). A reduction in energy intake is identified as a key component of lifestyle interventions; however, weight maintenance rather than weight loss is a unique goal that differentiates childhood obesity management to that of adults (NHMRC, 2013). Furthermore, interventions in young children should be targeted at parents because parents serve as role models and should be the 'source of authority' in a household (Golan & Weizman, 2001).

The guidelines acknowledge individual factors are influenced by environmental and social situations and suggest interventions for childhood obesity address lifestyle components; particularly around family food and physical activity behaviours.

Table 3: Comparison of international guidelines on the clinical management of childhood obesity

Guidelines	**Reduce energy intake**	**Reduce screen time**	**Increase physical activity**	**Multi disciplinary approach**	**Family-based approach**	**Bariatric surgery**	**# of consults**	**Weight loss**	**Weight maintenance**	**Pharmacotherapy**
Australian guidelines (NHMRC, 2013)	X	>2 hrs daily	60 min daily	X	X	Lap band conditional[4]	Frequent contact[5]	Limited to post-pubertal adolescents	X	Post-pubertal adolescents only: Orlistat/ Metformin
Endocrine Society (USA/Europe/UK) (Styne et al., 2017)	X	1-2hrs daily	20min x5/week	X	X	Severe cases only	N/A	Severe cases only	X	Only Orlistat (12-16yrs)
New Zealand (Ministry of Health, 2016)	X	>1 hr daily	60 min daily	X	X	Conditional[6]	Support as necessary	N/A	X	No
Scotland (SIGN, 2010)	X	>2 hrs daily or >14hrs weekly	60< moderate daily	Only in surgical intervention	X	Conditional[7]	N/A	Children with serious obesity-related morbidity	X	No anti-obesity medication licensed in the UK for use in children. Orlistat conditional[8]
Canada (D. C. W. Lau et al., 2007)	X	Reduce but no specific time	Regular physical activity	N/A	X	Grade C level 4 adolescents	Ongoing follow-up for min 3 months	Achieve clinically important weight loss	X	Orlistat can be added to lifestyle intervention in adolescents

[4] Only for post pubertal adolescents. Bariatric surgery should only be undertaken by a highly specialised surgical team within the framework of a MDT approach.
[5] Due to heterogeneity of studies, guidance on frequency of contact cannot be provided.
[6] Not recommended in those under 14 years. Attainment of final or near-final height. Severe obesity and/or co-morbidities. After 6 months MDT involvement and lifestyle intervention failure. Informed consent from adolescent.
[7] Post-pubertal, very severe-extreme obesity and severe comorbidities.
[8] Orlistat can be prescribed for severely obese to extremely obese adolescents with co-morbidities attending a specialist clinic.

2.1.5 Childhood obesity management in an Australian healthcare setting

In Australia, federal, state and local governments share the responsibility for the delivery of prevention services and child health in primary care (Vidgen et al., 2018). One common criticism of the current health system with regard to childhood obesity management is that it fails to provide adequate reimbursements to the management of childhood obesity, which is seen as a chronic condition, through primary care services. Because of this funding barrier, childhood obesity is often not diagnosed in primary care or referred on to specialist services (Vidgen et al., 2018).

Spilchak and colleagues found that only nine child weight management services in three of the eight states/ territories of Australia were identified in a nation-wide search (Spilchak et al., 2008). These services were limited to children and adolescents with severe obesity, with an average of twelve new referrals per service each month and an average waiting time of five months for an appointment.

As tertiary services are scarce, primary and secondary services have been acquiring the majority of cases leading to an array of issues identified in the literature. In the primary setting, studies suggest a lack of knowledge and resources to effectively manage childhood obesity (Turner, Shield, & Salisbury, 2009). While general practitioners have expressed confidence in assessing overweight and obesity in children (Dettori, Elliott, Horn, & Leong, 2009), significant barriers to managing this patient cohort include a lack of confidence in raising the issue of child weight (K. M. Jones, Dixon, & Dixon, 2013; L. A. King et al., 2007), lack of financial incentive, time constraints, lack of health system support and parental resistance (McMeniman, Moore, Yelland, & McClure, 2011). Furthermore, patients in the primary care setting have reported not having confidence in their GPs (K. M. Jones et al., 2013).

It has been suggested secondary care could be the optimal sector to manage child and adolescent obesity in Australia as primary care intake remains low and tertiary services are lacking (M. A. Wake et al., 2013). However, studies show secondary care also fails properly to address the issue of childhood obesity as consistency appears lacking both in diagnosis and treatment. One study (K. J. Campbell et al., 2013) found obesity is infrequently clinically diagnosed by Australian paediatricians and measurement practices vary widely. Wake et.al.

(2013) concluded that, while paediatricians expressed confidence in assessing and managing childhood obesity, few were confident in managing associated conditions associated with obesity; and felt they could make little difference to obesity itself. Further research could focus on supporting and normalising clinical obesity activities from which paediatricians and parents could see clear benefits (K. J. Campbell et al., 2013).

The tertiary care sector for childhood obesity remains an area that lacks sufficient services for the number of children who are currently obese. Due to the lack of resources and professionals trained in this area, only children with severe obesity are eligible (Spilchak et al., 2008). Sabin et.al.(2015) point out that, while obesity rates in children appear to have plateaued, the severity may continue to worsen as seen in the United States between 1999 and 2014 (Skinner et al., 2016). The most recent published literature examining the state of Australia's tertiary paediatric obesity services is work by Spilchak and colleagues (2008) released in *The Journal of Paediatrics and Child Health* which emphasises how ill-equipped the sector is from the perspective of both resources and geographical location. A list of tertiary obesity clinics in Australia is outlined by the Australasian Child and Adolescent Obesity Research Network which includes only seven clinics, all of which are located within major cities. Most of these tertiary services rely heavily on physicians and dietitians with hardly any use of other allied health such as physiotherapists or exercise physiologists (Spilchak et al., 2008).

Clinical management aimed at addressing childhood obesity have focused heavily on food and physical activity education, increasing physical activity, and promotion of healthy food consumption. Currently, there is limited evidence of these interventions consistently returning a child with obesity to normal weight. A report by the productivity commission suggests this may be due to the inherent complexities and multiple causes of the disease; but it may also reflect poor policy design and evaluation deficiencies (Crowle & Turner, 2010). Another perspective takes into consideration psychological hardships that may contribute to maintaining obesity and lesser quality of life experienced by children living with obesity and suggests effectiveness of interventions should be assessed based on a comprehensive range of outcomes that look beyond weight loss, such as increased motivation, improved mood and self-esteem, and decreased social isolation (Adam & Rieger, 2012).

2.2 Literature review

2.2.1 Perception Theory in Healthcare

Successful management of health conditions requires agreement and engagement of key stakeholders. In clinical cases, these stakeholders are primarily health professionals and the people they treat. In clinical childhood obesity management these stakeholders are health professionals, children with obesity and their parents/caregivers (A. J. Perez et al., 2018; Leanne Jane Staniford, Breckon, Copeland, & Hutchison, 2011). Understanding the clinical experiences and perceptions of these stakeholders in the context of childhood obesity is crucial to creating meaningful policies and interventions that restore health (Rennie et al., 2005; Leanne Jane Staniford et al., 2011).

Perception is an individual's interpretation of a certain phenomenon that results from the psychological processes that take place during interactions with that phenomenon (Efron, 1969; Merleau-Ponty & Landes, 2012). Perceptions, along with environmental and social factors drive patients' health behaviours. In the clinical setting, they also drive the ways in which health professionals choose to manage and treat patients (Jelalian, Boergers, Alday, & Frank, 2003; Pender, Murdaugh, & Parsons, 2015). Therefore, both patient and clinician perceptions and experiences are key factors to consider when mapping the context of childhood obesity management in Australia (Barnard, McCosker, & Gerber, 1999). Social cognitive models strive to explain the psychological processes that occur for individuals to either engage or not engage in health behaviours (Armitage & Conner, 2000). Central to these theories are perceptions about control and health threat (Conner & Norman, 2005; King, 1983).

Social cognition research attempts to make sense of how people perceive others (person perception) and how people perceive themselves (self-perception) (M. Clark & Hampson, 2003; Couch et al., 2016; Delisle et al., 2016; Fiske & Taylor, 1991; Gordon-Larsen, 2001; Greener, Douglas, & van Teijlingen, 2010; Saguy & Riley, 2005). Perceptions of health conditions vary between members of the public who experience certain health conditions and those who do not; as well as health professionals who work in the area of treating or managing certain health conditions and those who do not (M. Clark & Hampson, 2003; Couch et al., 2016; Greener et al., 2010; Harvey, Summerbell, Kirk, & Hill, 2002; Hebl & Xu, 2001; S. Lewis et al., 2010; Ogden & Flannagan, 2008; Price, Desmond, Ruppert, & Stelzer, 1989; M. B. Schwartz, Chambliss, Brownell, Blair, & Billington, 2003; Story et al., 2002; Tikkinen, Leinonen, Guyatt, Ebrahim, & Järvinen, 2012).

Childhood obesity is a particularly polarising topic that generally elicits two core beliefs about health behaviours: (i) health behaviours are most influenced by individual factors; (ii) health behaviours are most influenced by environmental, biological and/or demographic factors (Greener et al., 2010; R. J. Lewis, Cash, Jacobi, & Bubb-Lewis, 1997; Saguy & Riley, 2005; Sikorski et al., 2011).

A range of Social Cognitive Models (SCM) provide a framework with which to understand health behaviour and ways to address or alter it for the benefit of health outcomes. These models explain the importance of social and emotional influences on health habits. Key work by Conner and Norman (2005) and Scheppers (2006) demonstrated that patients' decisions to engage with health services to address a health condition are characterised by six key themes:

(i) Accessibility of healthcare service;
(ii) Attitudes to health care (beliefs about quality and benefits of treatment);
(iii) Perceptions of disease threat;
(iv) Knowledge about disease;
(v) Social network characteristics;
(vi) Demographic factors (King, 1983).

Two broad categories of social cognition models have been developed in health psychology to understand treatment responses and health behaviours to better inform prevention and treatment outcomes (Conner & Norman, 2005). One type of social cognitive model commonly used in public health prevention strategies examines aspects of cognition in order to predict future health behaviours and outcomes. The Health Belief Model (HBM) is a popular example of this type of social cognitive model. The purpose of the HBM was to explain determinants of health behaviour (Rosenstock, 1974). It postulates an individual's decision to engage in health behaviour is dependent on the benefits and costs of performing the health behaviour (King, 1983; Rosenstock, 1974).

Another type of social cognition model is an attribution model which is based on similar concepts to the Health Belief Model but also incorporates individuals' causal explanations of health-related events and how they respond to such events (Conner & Norman, 2005; King, 1983). These models use an individual's perception of their diagnosis to inform treatment or management approaches. Another model, Leventhal's common-sense model of illness,

recognises five cognitive dimensions of illness perceptions (Hagger, Koch, Chatzisarantis, & Orbell, 2017; Leventhal, Brissette, & Leventhal, 2003). These dimensions include:

(i) Perceptions about the identity (diagnosis) of the problem;
(ii) Ideas about the causes of the problem;
(iii) Ideas about possible consequences of the problem;
(iv) Time-line expectations about the duration
(v) Ideas about cure and controllability (Leventhal et al., 2003).

Though cognition accounts for the merging of incoming information with past experience, illness representations of emotional responses to disease and treatment also play an important role in the how people make sense of themselves (Edgar & Skinner, 2003).

The way in which individuals interpret their own illness compared to how they interpret others' illnesses is explained by these social cognition models. Research has shown discrepancies between health perceptions of patients and those of health professionals (Grishina, 2018). Perceptions play a significant role in both how health professionals advise patients as well as what motivates parents to seek assistance for their child's weight (Grishina, 2018). Such discrepancies can be detrimental to treatment adherence and, ultimately, health outcomes (Grishina, 2018).

Table 4: Popular social cognitive models of health behaviour

Health belief model	**Attribution model**	**Common sense model**
Postulates patients choose to engage or not engage with health behaviours based on cost vs. benefit of achieving health behaviour	Pt's perception of how *condition x* is caused influences their beliefs about what treatment would be effective, whom to seek treatment from, and how likely they are to adhere to prescribed treatment	Postulates how patients' perception of diagnosis guides their management of the condition. Includes elements of identity, causality, timeline (i.e. chronic or acute) and control

2.2.1.1 Significance of Social Cognition Models on the development of health interventions

The incorporation of Social Cognition Models in the development of health interventions represents the transition from a disease-oriented medical model to a patient-centred ecological model that emphasises the role of environmental and psychological factors in health outcomes (Diefenbach & Leventhal, 1996; Leventhal, Diefenbach, & Leventhal, 1992). They have been used in a number of studies examining preventative health behaviour, treatment-seeking behaviour and adherence associated with health goals (Bausell, 1986; Becker et al., 1978; Condelli, 1986; Diefenbach & Leventhal, 1996; Grishina, 2018; Kim & Zane, 2016; Langlie, 1977; C. Moore, 2016; Rosenstock, 1977). They are useful to interventions that seek to alter health behaviours by targeting patients' health and illness perceptions.

By incorporating cognitive and behavioural concepts, perception research in health care strives to understand how patients and clinicians manage conditions, such as childhood obesity, and how to use these social cognitive indicators to improve management (Breland, Fox, Horowitz, & Leventhal, 2012; McAndrew et al., 2008).

2.2.2 Health professionals' perceptions and practice of childhood obesity management

The following review of literature on the perceptions of health professionals sought to include studies from the childhood obesity management setting that expressed experiences and perceptions of health professionals. Australian (local) and non-Australian (international) literature are presented separately as there are vast differences in health systems and the provision of clinical services across countries and it is likely Australian practitioners' experiences and perceptions are shaped by these differences. Furthermore, separating the literature allows gaps to be identified in the Australian research based on the reports from international studies.

2.2.2.1 Search criteria for perceptions of health professionals on childhood obesity management

Australian literature was searched using combinations of key words: "Australia", "childhood obesity management", "childhood obesity treatment", "health professional", "clinician", "view", "perception", "attitude", "belief". International literature was searched using key

words: “childhood obesity management”, “childhood obesity treatment”, “health professional”, “clinician”, “view”, “perception”, “attitude”, “belief”. Studies were included that were written in English and reported on clinician perceptions, attitudes, beliefs or views towards childhood obesity management.

Studies were included that were written in English and reported on clinician perceptions, attitudes, beliefs or views towards childhood obesity management.

2.2.2.2 Description of study design of reviewed literature

The search strategy identified thirty studies in total; inclusive of seventeen non-Australian (international) studies and thirteen Australian studies that reported health professionals’ perceptions of childhood obesity management outlined below in **Table 5**. The studies reported on a range of health professionals; although the majority of studies focused primarily on one type of health professional. GPs were the most common participants; present in nineteen of the studies, followed by paediatricians who participated in twelve of the studies. Nurses participated in ten of the studies (Barlow, Trowbridge, Klish, & Dietz, 2002; Findholt, Davis, & Michael, 2013; Moyers, Bugle, & Jackson, 2005; Turner et al., 2009; O. Walker, Strong, Atchinson, Saunders, & Abbott, 2007). Five studies included dietitans (Barlow et al., 2002; Chamberlin, Sherman, Jain, Powers, & Whitaker, 2002; Sastre, Matson, Gruber, & Haldeman, 2019; Schalkwijk, Nijpels, Bot, & Elders, 2016; Leanne Jane Staniford et al., 2011) and four included health promotion officers or general health workers (O’Donnell, Foskett-Tharby, & Gill, 2017; Schalkwijk et al., 2016; Leanne Jane Staniford et al., 2011; Turner et al., 2009). Exercise experts were participants in two of the studies (Schalkwijk et al., 2016; Leanne Jane Staniford et al., 2011). One study included an endocrinologist (Leanne Jane Staniford et al., 2011) and another psychologists (Schalkwijk et al., 2016).

Studies utilised primarily either quantitative or qualitative methods; with the exception of three which employed mixed methods (Laws et al., 2015; Kyung E. Rhee, Kessl, Lindback, Littman, & El-Kareh, 2018; Schalkwijk et al., 2016). Quantitative studies used surveys to collect data from health professionals while qualitative studies collected data through the use of focus groups and interviews with health professionals. Sample sizes ranged from nine (Leanne Jane Staniford et al., 2011) to 1243 participants (Jelalian et al., 2003). Qualitative studies included 30 or fewer participants while quantitative studies included more than 30 participants.

2.2.2.2a Description of the design of international studies assessing health professionals' perceptions

Of the seventeen international studies, seven used exclusively qualitative data collection methods (interviews/ focus groups); eight studies used quantitative data collection methods (survey/questionnaire) and two studies used mixed methods (interviews/focus groups/questionnaire) (Kyung E. Rhee et al., 2018; Schalkwijk et al., 2016). The sample size of the qualitative studies ranged from n=7 to n=52. The sample size of the quantitatively gathered data ranged from n=36 to n=1243.

The studies identified in the literature aimed to identify attitudes, practices, barriers and perceptions of competence by healthcare providers.

Nine studies included GPs as participants. Nine studies also included paediatricians as participants. Nurses were participants in seven studies. Dietitians participated in four studies (Barlow et al., 2002; Sastre et al., 2019; Schalkwijk et al., 2016; Leanne Jane Staniford et al., 2011). Health promotion officers or general health workers were participants in four studies (O'Donnell et al., 2017; Schalkwijk et al., 2016; Leanne Jane Staniford et al., 2011; Turner et al., 2009). Two studies included exercise experts (Schalkwijk et al., 2016; Leanne Jane Staniford et al., 2011). One study interviewed a single endocrinologist (Leanne Jane Staniford et al., 2011). One study included psychologists as participants (Schalkwijk et al., 2016).

All seventeen of the studies assessed health professional attitudes. Seven studies assessed childhood obesity practice. Fifteen international studies reported health professional perceived barriers. Twelve studies reported health professionals' perceptions of competence in providing clinical management to children with obesity.

2.2.2.2b Description of the design of Australian studies assessing health professionals' perceptions

Eight of the thirteen Australian studies involved data collection through the use of surveys (Buffart et al., 2008; Gerner, McCallum, Sheehan, Harris, & Wake, 2006; Hayden, Dixon, Piterman, & O'Brien, 2009; McMeniman et al., 2011; Sivertsen, Woolfenden, Woodhead, & Lewis, 2008; Spurrier, Magarey, & Wong, 2006; Wake et al., 2011); two used focus groups (Chamberlin et al., 2002; L. A. King et al., 2007); four used semi-structured interviews

(Chamberlin et al., 2002; Edvardsson, Edvardsson, & Hörnsten, 2009; K. M. Jones et al., 2013; Laws et al., 2015).

The Australian studies involved mostly GPs (n=9); three studies included paediatricians (McFarlane et al., 2009; Spurrier et al., 2006; Wake et al., 2011), three included maternal and child health nurses (Chamberlin et al., 2002; Edvardsson et al., 2009; Laws et al., 2015) and one included dietitians (Chamberlin et al., 2002).

All thirteen of the Australian studies assessed attitudes towards childhood obiesty management. Eleven of the studies documented health professionals' reported practices associated with childhood obesity management. twelve studies reported barriers health professionals experienced in their management of childhood obesity and. Eleven studies reported health professionals' perceptions of their competence in managing childhood obesity.

2.2.2.2c Synopsis of the design of international vs. Australian studies

The main difference between the types of studies reviewed amongst the Australian literature and the international literature was Australian studies mostly reported the perceptions of paediatricians and GPs while the international literature explored perceptions of health professionals from multiple professions. The Australian studies mostly used quantitative methods of data collection and few qualitative studies (62% vs. 38%, respectively); while the international studies comprised of 47% quantitative studies and 53% qualitative studies. Health professional childhood obesity attitudes, practices, barriers to management and perceptions of competence were commonly reported in the perception literature across both international and Australian studies.

Table 5: Studies reporting health professional perceptions of childhood obesity management in Australia

Author	**Nationality**	**Aims**	**Study design**	**n=**	**Findings**
(Chamberlin et al., 2002)	Australian	-Assess HP perceptions about challenges that exist in preventing and managing CHO	Focus groups/ interview	19 HPs 7 dietitians 12 nurses	*Attitudes: Fear of offending parent. Sensitivity of issue. Growth charts helpful to help discuss weight.* *Barriers: Parental denial. Cultural understandings of "healthy weight". Lack of time. Lack of community support. Lack of consistency between health professional messages.*
Gerner (2006)(*European Charter on Counteracting Obesity*) (Gerner et al., 2006)	Australian	-Impact of routine, weight, height and BMI measurements of children by GPS. - Assess accuracy/ accessibility to anthro[9] equipment	Survey	34 GPs	*Reported practice:* 44% GPs reportedly weighed; 38% regularly measured height; Only n=1 regularly calculated BMI. Majority anthro equipment accessible. *Reported barriers:* Training in anthro measurements rare amongst GPS *GP beliefs:* Believed they played key role. Felt strongly they should offer treatment to overweight/obese children rather than just referring-on. Almost half did not feel professionally well-prepared to manage overweight/obesity in children
Spurrier (2006); (Spurrier et al., 2006)	Australian	-Determine ability to correctly identify children as OW/ obese by visual cues -Describe management practices of OW/obese children - Compare practices to NHMRC guidelines	Survey	71 respondents 44 GPs 29 Paeds[10]	*Practice:* 72% GPs and 68% paediatricians correctly identified overweight/obese via visual cues. Statistically significant differences in management between GPs and paeds conducting appropriate anthropometry and screening for co-morbidities; paeds performed closer to the NHMRC Guidelines. *Barriers* (reported by GPs only): lack of resources: time, space, equipment, reimbursement for prevention strategies
King (2007); (L. A. King et al., 2007)	Australian	-Explore GP perceptions of childhood OW'obesity: concern, causes, actions needed to address, sense of responsibility/self-efficacy	Focus Groups	26 GPs	*Attitudes:* Concerned about increasing prevalence child overweight/ obesity; committed to managing medical consequences. Confident about handling health problems associated with overweight and obesity. *Beliefs:* Broad range of social causes. overweight/obesity sensitive issue for parents. Felt they were well-equipped to provide factual advice/ explain health consequences of obesity.

[9] Anthro: anthropometric
[10] Paeds: paediatricians

					Barriers: Topic sensitivity, not feasible to provide detailed dietary or physical activity advice due to limited consult time, cost to families, and low expectations for patient compliance/success
Sivertsen (2008); (Sivertsen et al., 2008)	Australian	-Describe GP diagnosis/ management of child OW/obesity, attitudes and awareness of NHMRC guidelines	Survey	84 GPs	*Attitudes:* 82% agree childhood obesity is a significant problem. 84% believe primary care providers should prevent *Practice:* 28% used NHMRC guidelines in their practice. 9% use BMI charts to diagnose. 72% feel comfortable raising issue w/ parents. *Barriers:* Unrewarding/difficult issue, parental denial, lack of community support an. All GPs wished to learn more about the topic, but many felt thwarted by lack of community support and parental interest.
Hayden (2009); (Hayden et al., 2009)	Australian	-Measure perceptions about child OW/obesity as medical problem, GP role in management, use of BMI charts after practice intervention retraining how to manage children w/ obesity	Survey	33 GPs	*Attitudes:* 93% agree child overweight/obesity medical problem. GPs have a role in management. *Practice:* 79% routinely measure height/weight. 57% aware of BMI charts. 42% aware of NHMRC guidelines. Only 57% reported changing practice post-intervention; only 52% calculated/ plotted BMI post-intervention *Barriers:* 61% reported difficulty raising issue of OW/obesity w/ parent. Parents do not see it as a problem. Lack of confidence in dealing with obesity. Lack of time.
McFarlane (2009); (McFarlane et al., 2009)	Australian	-Assess capacity, knowledge, skill, confidence of GPs/ paeds in identification/ management child OW/ obesity	Survey	43 respondents 40 GPs 3 paeds	*Attitudes*: 18% believe they have responsibility to manage child overweight/ obesity. *Practice*: 23% HPs used NHMRC guidelines. 95% would refer to MDT if available. 79% have referred to dietitian; 42% have referred to paeds. *Barriers*: Most HPs believed public sector dietitians not available/ too costly. Not aware of relevant referral services. Sensitivity raising issue w/ parents limits capacity to identify/manage effectively.
(Edvardsson et al., 2009)	Australian	-Describe maternal and child health nurses' experiences of diagnosing and approaching the topic of child overweight with parents	Interview	10 maternal and child health nurses	*Attitudes:* Childhood obesity is a sensitive issue for parents. Strong nurse-parent relationship conducive to enabling conversations about weight. Fear of damaging relationship with patient/family *Practice:* Growth chart helpful in discussions. Using guidelines to aid discussion. Give handouts, flyers and pamphlets. *Barriers:* parental denial and defensiveness. Cultural belief systems *Competence:* difficult to raise weight issues.

McMeniman (2011); (McMeniman et al., 2011)	Australian	-Explore how GPs feel about managing child OW/obesity -Analyse barriers	Survey	170 GPs	*Attitudes*: ambivalence towards their own skill. Scepticism about likelihood of successful intervention. *Practice:* 92% never used NHMRC guidelines in assessment or management of childhood obesity. *Barriers*: Lack of financial incentive, time constraints, lack of health system support, parental resistance. Uncertainty about definition criteria, how to calculate BMI, lack of access to BMI charts. 22% unaware of NHMRC guidelines.
Jones (2013); (K. M. Jones et al., 2013)	Australian	-Explore perceptions and experiences of child obesity treatment	Interview	10 GPs	*Attitudes*: Some GPs did not see childhood obesity as an important health issue. Frustration towards family dynamics/ lack of compliance. *Practice*: Few regularly calculate height/weight 2/10 GPs unaware of NHMRC guidelines, 7/10 aware but did not use. 1/10 used them but not often. *Barriers*: Child obesity a sensitive issue, raising topic a challenge. External influences (tv, marketing toys/food, convenience fast food, hectic lifestyles), parents unwilling to make changes, non-compliance. Lack of time, working alone, BMI charts not accessible, lack of reimbursement, few resources available to help parents.
(Laws et al., 2015)	Australian	-aimed to examine the extent to which nurses addressed healthy infant feeding practices, healthy eating, active play and limiting sedentary behavior during routine consultations with young children 0–5 years	Mixed methods Survey/ interviews	56 maternal and child health nurses 56- survey 16 interviews	*Attitudes:* Growth charts helpful for discussing weight. Lack of confidence in their effectiveness in intervention. *Practice:* All nurses measure and weight children, however, only 22% never use growth charts. Provide diet counselling. *Barriers:* Parents believe chubby baby is a healthy baby- cultural perceptions. Parental denial. Lack of time. Lack of referral pathways. *Competence:* Reluctant to raise issue of weight with parents. Lack of confidence addressing weight. Confident using growth charts.
Wake (2011); (Wake et al., 2011)	Australian	-Determine self-reported competencies in management of child obesity and co-morb's, training and practice implementation	Survey	167 Paeds	*Attitudes*: 66% perceived competence in management. 20% felt competent at making a difference. Perceived competence in management of co-morbidities ranged from 64% (obstructive sleep apnoea) to 20% (dyslipidaemia). Few of the respondents had received specific skills training for obesity and few of those who were trained used the skills.
Buffart et al (2008)	Australian	-Investigate GP knowledge, role perception, confidence,	Survey	646 GPs	*Attitudes:* 33% believed children could reduce weight and maintain loss. Most believed they have role to play but 41% do not feel

		practice of managing OW/obesity			confident managing children. 79% prefer to manage pts rather than refer. *Practice:* 36% counsel >3 children/week for overweight/obesity.
Barlow et al (2002)	USA	-Identify needs of paediatric clinicians in childhood obesity management	Survey	940 respondents 203 Paeds 293 Nurses 444 Diet'ns	*Attitudes:* Concerned about childhood obesity. Has a medical and functional impact. Requires treatment. Feel least proficient in behavioural counselling. *Practice:* Knowledgeable in approach to evaluation/treatment. Reluctant to initiate treatment. Did not complete screening for co-morbidities. *Barriers:* Motivation, time available for counselling, self-efficacy, lack of reimbursement. HPs lack confidence they have effective therapeutic strategies.
Jelalian et al., 2003	USA	-Explore attitudes and practices related to childhood obesity treatment in primary care setting	Survey	1243 GPs	*Attitudes:* 77% treatment is very frustrating; 69% believe obesity is a treatable condition. 25% do not feel confident in treating. *Practice:* GPs estimated 27.7% of their adolescent patients and 23% of child patients are overweight. GPs likelihood to address overweight increases when severity increases. *Barriers:* Lack of training, Insufficient time, lack of reimbursement, lack of specialists for referral, lack of staff support, fear of offending patient.
Moyers et al 2005	USA	-Explore perceptions of school nurses regarding childhood obesity	Survey	106 School nurses	*Attitudes:* more than 90% believed poor eating behaviour, excessive calories and sedentariness causal factors, treatment is futile; 87% counselling for obesity is difficult; 25% competence in providing counselling is low; 25% even with guidance children can maintain healthy weight; 40% management gratifying; 71% don't believe schools are doing enough to counter. *Practice:* 31% use BMI, 52% use visual cues to assess for childhood obesity. 52% provided counselling and referral only when parents asked for help; 30% do not recommend treatment for weight loss. *Barriers:* Parental support is lacking.
Walker et al 2007	UK	-Explore GP and practice nurses' views in relation to their role in treating childhood obesity	Interview	18 respondents 12 GPs 6 Nurses	*Attitudes:* It is a difficult task sometimes too difficult to address. Unwilling to address. Role was to raise issue of a child's weight, provide basic diet and exercise advise, but ultimately obesity was a social/family problem. *Barriers:* Time constraint, lack of training and lack of resources .

					concern that the clinician-patient relationship could be adversely affected by discussing sensitive topic. GPs and practice nurses felt ill-equipped to tackle childhood obesity given the lack of evidence for effective interventions, and were sceptical that providing diet and exercise advice would have any impact upon a child's weight.
Cano et al 2008	Spain	-Identify paediatricians' opinions and attitudes towards childhood obesity	Survey	168 Paeds	*Barriers:* Easy access and advertisement of certain foods and beverages, lack of implication of parents, lack of perception of a weight problem in children and parents. Training was the most trusted tool. Paediatricians considered themselves as some or low efficacious in treating obesity. The effectiveness of an obese children management program in primary care was surpassed by the work it would need.
Franc et al (2009)	France	-Explore knowledge, attitudes, beliefs of paediatricians towards childhood obesity treatment	Survey	611 Paeds	*Attitudes:* 86.4% childhood obesity is an illness. 84% managing obesity is their responsibility in routine practice. 82.4% were convinced that managing obesity is bound to fail and only 46.5% that it is professionally gratifying. Doctors who followed a vocational training dedicated to obesity felt themselves more efficient in managing childhood obesity ($p<0.01$); those who knew the national recommendations were also less likely to report that the management of childhood obesity leads to a failure ($p<0.05$). *Practice:* 98% used BMI in practice. 89.3% reported routinely informing parents of obese children and health risks. *Barriers:* Lack of parental concern, SES, food industry.
Turner (2009)	UK	-Explore views of primary care as an appropriate setting to treat childhood obesity	Interview	30 respondents 12 GPs 14 Nurses 4 health visitors	*Attitudes:* Most believe primary care is appropriate setting. Obesity is social rather than medical problem therefore no place in medical setting. Efforts ineffective. *Barriers:* Sensitivity of issue, appropriateness to bring up when pt has come for something else, a lack of expertise, time, resources, and contact with primary school children; the causes of childhood obesity; and the need to work with parents. Few participants had knowledge of the recent guidance.
Staniford (2011)	UK	-Analyse perspectives of health professional involvement in	Interview	9 respondents 3 nutritionists	*Attitudes:* Parents have primary responsibility for leading attempts to make behaviour changes. Interventions need to address underlying parenting issues so parent take charge of making changes. HPs

		obesity intervention design and delivery process		2 health promotion officers 1endocrinologist 1 paeds 1 dietitian 1 exercise professional	suggested interventions should aim to create autonomous individuals who exit treatment and independently sustain behaviour change. *Barriers:* Ongoing support unrealistic because cost. Majority of families would not commit to extended support leading to poor attendance and high drop out.
(N. Holt et al., 2011)	USA	Examine current childhood obesity practices, attitudes, barriers and competence among PCP physicians in southern Appalachia	Survey	36 primary care physicians 24 GPs 12 paeds	*Attitudes:* Childhood obesity require treatment *Practices*: 75% do not raise issue of overweight/ obesity with parents. 92% do not calculate BMI. 71% counsel on diet and physical activity habits. 19% give tools or resources to make changes. 42% Assess parents' readiness to change *Barriers:* 57% lack of time, 70% lack of parental involvement, 70% lack of referral services, lack of reimbursement, lack of knowledge and skills. *Competence:*38% not confident in use of behavioral management strategies. Poor confidence in addressing family conflicts/ parenting techniques. Confident in providing diet/physical activity advice
(Isma, Bramhagen, Ahlstrom, Östman, & Dykes, 2012)	Sweden	-Build an understanding of conceptions of childhood obesity among nurses working in child health care.	Interview	18 Child health care nurses	*Attitudes:* CHO sensitive and provoking issue. CHO is a serious problem. External, SES factors to blame. *Barriers:*Lack of time. Lack of reimbursement. Lack of staff.
Findholt (2013); (Findholt et al., 2013)	USA	-Explore perceived barriers, resources and training needs	Interview	13 Rural primary care providers: 4 GPs 2 paeds 4 nurses 2 phys assistants	*Attitudes:* Primary care not ideal setting to be addressing childhood obesity. difficult to conduct comprehensive assessment and effectively counsel patients on diet and physical activity. *Barriers:* Time constraints, lack of reimbursement, few opportunities to detect obesity, limited knowledge, parental resistance, sensitivity of topic, cost to pt, lack of specialists to refer-to, socio-cultural influences. *Recommendations*: Tools for focused behavioural assessment, patient education material, clinic or community-based program to take on case rather than ask clinician to try to manage, additional training.

Mazur (2013); (Mazur et al., 2013)	Europe: France, Italy, Poland, Ukraine	-Determine and compare skills and practices in childhood obesity management	Survey	1119 PCPs: Paeds, GPs	*Attitudes:* 94% from France, Italy and Poland believed they had a role. Only 60% of Ukrainian HPs believed they had a role. only 21.4% of respondents regarded themselves as competent in management. *Practice:* 69% of HPs from Italy and Ukraine reported having a weight management program in their practice while only 18% of French and Polish HPs. Adherence to recommended practices such as routine weight and height measurements, BMI calculation and growth charts was poor. 70% reported they treated childhood obesity in their practice, 62% referred if therapy was unsuccessful.
Gies et al (2017)	Middle East, North Africa	-Assess childhood obesity knowledge and practices of GPs from Middle East and North Africa	Survey	999 GPs	*Attitudes:* 83% thought childhood obesity a serious issue; 17% did not think it was serious. *Practice:* Underdiagnoses. 29% did not routinely use growth charts; only 25% and 47% of respondents aware of cut-off criteria for overweight/obesity, respectively. Half of participants were unaware of associated co-morbidities.
(Schalkwijk et al., 2016)	Netherlands	-Understand needs of HP and barriers to childhood obesity management	Mixed methods Focus groups Surveys	222 27GPs 11 youth care workers 23 diet'ns 14 paeds 13 psychs 69 physios 12 healthcare workers (other)	*Barriers:* Reluctance to raise the topic, fear of harming relationship w/ patient, lack of motivation, lack of parental knowledge, parents' previous bad experiences with lifestyle programs, financial constraints, lack of structured MDT approach, time-consuming to create individual care plan, lack of resources to for continuity of care.
(O'Donnell et al., 2017)	England, UK	-Explore the views of general practice staff of managing childhood obesity in general practices across England	Interview	52 respondents 29 GPs 16 healthcare workers 7 nurses	*Attitudes:* CHO is an important issue which has health consequences. Not a GP responsibility.General practice ineffective in making a difference. Fear of parental backlash. Environment to blame. *Barriers:* lack of contact with well children. Sensitivity of issue. Competing health priorities- acute presentations- awkward to bring up weight. Lack of time. Parental denial.
(Kyung E. Rhee et al., 2018)	USA	-examine the views of pediatric providers on conducting obesity management in the primary care setting, and	Mixed Methods	22 paeds- focus groups	*Attitudes:* Fear of offending parents. Want more training. HPs have role to play: should diagnose, counsel on diet and phys act, conduct lab tests and refer-on

		identify potential resources and care models that could facilitate delivery of this care	4 Focus groups Survey	42 r(O. Walker et al., 2007)espondents- survey	*Barriers:* Lack of time. Lack of training (knowledge/skills). Lack of awareness of referral options. Lack of patient resources. Cost to patient *Competence:* Not comfortable raising issue with parents. Not confident providing behavioural counselling/ weight management advice. HPs feel ineffective.
(Sastre et al., 2019)	USA	-Examine medical provider perceptions re CHO management with a diverse, low-SES population	Interview	18 16 GPs 1 Nurses 1 Dietitians	*Attitudes: physicians comfortable discussing weight at two years old. Parents have greatest influence on changes* *Barriers: parental denial/resistance. Lack of time. Cultural perceptions of weight. Language barriers. Attrition.* *Competence: Counselling efforts not successful. Reluctance initiating weight discussion*

2.2.2.3 Health professionals' attitudes towards childhood obesity management

The following section reports on the attitudes of Australian and non-Australian health professionals towards childhood obesity and its management as indicated by the literature identified through the search criteria. Common themes relating to health professional attitudes included beliefs about their own roles in childhood obesity management, attitudes towards childhood obesity, beliefs about how raising the issue may influence the patient-health professional relationship and beliefs about the effectiveness of interventions.

2.2.2.4 Non-Australian literature: Attitudes and beliefs:

30% of the international studies reviewed reported the majority of health professionals participating in their studies believed they had a key role to play in childhood obesity management (Barlow et al., 2002; Franc, Van Gerwen, Le Vaillant, Rosman, & Pelletier-Fleury, 2009; Mazur et al., 2013; Kyung E. Rhee et al., 2018; O. Walker et al., 2007); while 3/17 did not (Findholt et al., 2013; O'Donnell et al., 2017; O. Walker et al., 2007). One study suggested the majority of its participants did not view childhood obesity as an important health issue(Turner et al., 2009). 35% of the reviewed international literature showed health professionals were concerned about childhood obesity (Barlow et al., 2002; Franc et al., 2009; Gies et al., 2017; N. Holt et al., 2011; Isma et al., 2012; O'Donnell et al., 2017); with two of these acknowledging childhood obesity can lead to health consequences (N. Holt et al., 2011; O'Donnell et al., 2017). Interestingly, one study showed more than half of their participants were unaware of the health consequences of childhood obesity (Gies et al., 2017).

30% of the reviewed studies reported the health professionals in their studies believed childhood obesity to be a sensitive issue for parents (Findholt et al., 2013; Isma et al., 2012; O'Donnell et al., 2017; Turner et al., 2009; O. Walker et al., 2007); five studies reported health professionals were reluctant to raise the topic due to a fear of offending parents and damaging the health professional-patient relationship (Jelalian et al., 2003; O'Donnell et al., 2017; Kyung E. Rhee et al., 2018; Schalkwijk et al., 2016; O. Walker et al., 2007). 30% of the reviewed international studies reported health professionals found childhood obesity management a frustrating and non-gratifying area of clinical practice (Cano Garcinuño, Pérez García, & Casares Alonso, 2008a; Franc et al., 2009; Jelalian et al., 2003; Moyers et al., 2005; O. Walker et al., 2007).

53% of the studies indicated the majority of their health professional participants had low expectations their interventions would result in successful treatment of childhood obesity due to little confidence in patient compliance (Barlow et al., 2002; Cano Garcinuño et al., 2008a; Franc et al., 2009; Moyers et al., 2005; O'Donnell et al., 2017; Kyung E. Rhee et al., 2018; Sastre et al., 2019.; Turner et al., 2009; O. Walker et al., 2007). Two studies reported health professional beliefs around childhood obesity treatment indicated current interventions were unsustainable and therefore would result in long-term relapse even if initial results post-intervention showed improvements to the child's BMI (Schalkwijk et al., 2016; Leanne Jane Staniford et al., 2011).

2.2.2.5 Australian literature: Attitudes and beliefs:

35% of Australian studies reviewed reported the majority of their participants believed they had a key role to play in childhood obesity management (Barlow et al., 2002; Franc et al., 2009; Mazur et al., 2013; Kyung E. Rhee et al., 2018; O. Walker et al., 2007); while one study indicated on 18% of its participants (GPs) agreed that they had an important role to play (McFarlane et al., 2009).

Only 23% of the Australian studies reviewed reported their health professionals were concerned about childhood obesity (McFarlane et al., 2009). One study showed its health professionals were aware and concerned about the consequences of childhood obesity (Turner et al., 2009) while another indicated some GPs did not view it to be a health issue at all (K. M. Jones et al., 2013).

62% of studies showed Australian health professionals believed childhood obesity is a sensitive issue for parents (Chamberlin et al., 2002; Edvardsson et al., 2009; K. M. Jones et al., 2013; Lesley A. King et al., 2007; Laws et al., 2015); in three studies health professionals indicated the sensitivity of the issue contributed to reluctance to raise the issue in fear parents would be offended and their relationship with them would be damaged (Chamberlin et al., 2002; Edvardsson et al., 2009; Laws et al., 2015).

No studies reported attitudes of health professional frustration towards childhood obesity management; however five studies did find its participants' had low expectations of intervention success due to beliefs that patients would not comply with recommended changes (Buffart et al., 2008; K. M. Jones et al., 2013; Lesley A. King et al., 2007; McMeniman et al., 2011; Wake et al., 2011).

2.2.2.6 Comparison of Non-Australian and Australian literature

The findings of these studies reflected attitudes, current practices and barriers to managing childhood obesity. Attitudes towards childhood obesity management generally held a negative undertone.

2.2.2.6a Attitudes towards childhood obesity

A majority of the health professionals in these studies expressed concern for childhood obesity and believed it was a serious condition that required treatment; and that they played a key role in its management (Barlow & Dietz, 2002; Gies et al., 2017; Jelalian et al., 2003). However, most health professionals reported little confidence in their ability to provide effective interventions, although nearly all believed they had a role in addressing childhood obesity (Buffart et al., 2008; Cano Garcinuño, Pérez García, & Casares Alonso, 2008b; Franc et al., 2009; Gerner et al., 2006; Hayden et al., 2009; Mazur et al., 2013; McMeniman et al., 2011; Wake et al., 2011; O. Walker et al., 2007).

2.2.2.6b Attitudes towards childhood obesity management

The most commonly reported attitude amongst these studies was frustration and scepticism towards their ability to lead a successful intervention that would lead to improved weight management in children with obesity (Buffart et al., 2008; L. A. King et al., 2007; McMeniman et al., 2011; Sivertsen et al., 2008). This was supported by a belief amongst health professionals that childhood obesity management is a futile exercise that is bound to fail (Cano Garcinuño et al., 2008b; Franc et al., 2009; Jelalian et al., 2003; Moyers et al., 2005; Turner et al., 2009; O. Walker et al., 2007). The futility of interventions was consistent with views that childhood obesity is a family and social issue and therefore, could not be fixed with a medical cure (Leanne Jane Staniford et al., 2011; Turner et al., 2009; O. Walker et al., 2007). Some found childhood obesity management to be an unrewarding and frustrating area of practice (K. M. Jones et al., 2013; McMeniman et al., 2011; Sivertsen et al., 2008).

2.2.2.6c Beliefs about roles and responsibilities

Studies exploring the perceived roles of health professionals indicate that while the majority of health professionals believe they have some role to play in childhood obesity management, the perceptions around the responsibilities of these roles differ.

A UK study of GPs and nurses felt that their role was to raise the issue of a child's weight; however, the study maintained that childhood obesity was a family and social issue and out of their level of competency (O. Walker et al., 2007). A European (Italy, France, Poland, Ukraine) survey found that the majority of paediatricians and GPs believed childhood obesity was relevant to the primary care setting; however, many barriers interfered with its effective management (Mazur et al., 2013). Interestingly, while the survey by Mazur and colleagues suggested primary care providers indicated they had a critical role to play in childhood obesity management, other qualitative studies suggested otherwise (Findholt et al., 2013; Turner et al., 2009; O. Walker et al., 2007). Some primary care providers did not believe primary care was an appropriate setting for childhood obesity management due to the complexity of the issue and a lack of consultation time (Findholt et al., 2013; Turner et al., 2009; O. Walker et al., 2007). Only two Australian studies reported that GPs believed they should manage cases of childhood obesity within their own practice rather than referring such cases on (Buffart et al., 2008; Gerner et al., 2006).

2.2.2.4 Reports of clinical practice of childhood obesity management

Studies exploring adherence to recommended clinical practice for diagnosing, assessing and treating childhood obesity have found that childhood obesity management is under-utilised and poorly practiced by health professionals, both, in Australia and internationally (Gies et al., 2017; Hayden et al., 2009; N. Holt et al., 2011; K. M. Jones et al., 2013; L. A. King et al., 2007; McFarlane et al., 2009; McMeniman et al., 2011; Moyers et al., 2005; Sivertsen et al., 2008; Spurrier et al., 2006; Leanne Jane Staniford et al., 2011).

2.2.2.4a Diagnosis

The most common practice issue reported in these studies was health professionals' failure to properly screen and diagnose childhood obesity (Gies et al., 2017; Hayden et al., 2009; K. M. Jones et al., 2013; L. A. King et al., 2007; McFarlane et al., 2009; McMeniman et al., 2011; Moyers et al., 2005; Sivertsen et al., 2008; Spurrier et al., 2006; Leanne Jane Staniford et al., 2011). In many cases, health professionals expressed a reluctance to initiate treatment due to

a range of issues, including, the sensitivity of discussing weight with parents and a lack of training and resources (Barlow & Dietz, 2002; Schalkwijk et al., 2016).

Australian studies attributed poor screening and diagnosis of childhood obesity in part to a failure of paediatricians and GPs to measure the height and weight of children; these studies showed less than half of their participants (GPs and paediatricians) routinely measured child height and weight (McFarlane et al., 2009). In other studies, in which measuring child height and weight was reported as part of routine practice, health professionals were much more likely to identify childhood obesity and inform parents (Franc et al., 2009; Laws et al., 2015).

In some instances, there appeared to be a knowledge gap amongst health professionals with regard to recognising risks associated with obesity; this too contributed to diagnosis and assessment failure (Barlow & Dietz, 2002; Gies et al., 2017).

2.2.2.4b Assessment

Four Australian studies suggested health professionals felt they had a good grasp of clinical knowledge in providing advice; however, implementing the delivery of advice was difficult due to the sensitive nature of discussing a child's weight (Hayden et al., 2009; K. M. Jones et al., 2013; L. A. King et al., 2007; McMeniman et al., 2011). Sensitivity around discussing weight is a common barrier identified by nearly all studies observing health professional perceptions about childhood obesity management (Edvardsson et al., 2009; Isma et al., 2012; Laws et al., 2015). Other studies indicate specialist health professionals (such as allied health) lack confidence in assessing childhood obesity and providing useful advice to families (Milne, Choy, Leong, Hughes, & Hing, 2016; A. Robinson, Denney-Wilson, Laws, & Harris, 2013).

2.2.2.4c Treatment

Counselling patients on dietary habits and physical activity and referrals to specialists were the most common interventions practiced by health professionals in these studies (Franc et al., 2009; Moyers et al., 2005; Leanne Jane Staniford et al., 2011). Referral practices were only explored by one qualitative questionnaire-based study, which found GPs were most likely to refer children with obesity to a dietitian (79%) than a paediatrician (42%); however, nearly all said they would refer patients to a multidisciplinary service if it was available (McFarlane et al., 2009). Treatment was perceived as a futile and unfulfilling exercise by

nearly all the health professionals in these studies due to a range of barriers that interfered with their abilities to provide effective treatments for children with obesity and their families (Cano Garcinuño et al., 2008b; Pelletier-Fleury, Le Vaillant, Franc, & Rosman, 2006; Schalkwijk et al., 2016; Leanne Jane Staniford et al., 2011; Turner et al., 2009).

2.2.2.5 Health professionals' perceived barriers to management

Perceived barriers to management were the most prominent theme reflected in the reviewed studies and could be categories as consult-barriers, familial-barriers and external (environmental barriers) (Findholt et al., 2013; Turner et al., 2009).

2.2.2.5a Consult barriers

"Lack of time" was the most commonly reported consult-barrier reported in the literature (Findholt et al., 2013; Ganter et al., 2015; Hayden et al., 2009; Hearn, Miller, & Cross, 2007; K. M. Jones et al., 2013; McFarlane et al., 2009; McMeniman et al., 2011; A. Robinson et al., 2013; Sastre et al., 2019; Spurrier et al., 2006; O. Walker et al., 2007; Yarborough, DeBar, Wu, Pearson, & Stevens, 2012). Health professionals in primary care did not believe it was feasible to provide detailed dietary physical or activity advice due to consultation time restraints (Hearn et al., 2007; L. A. King et al., 2007; O'Donnell et al., 2017; Shreve, Scott, & Vowell Johnson, 2017). Furthermore, a lack of resources, such as access to a multidisciplinary team and referral options, contributed to consultation barriers (Chamberlin et al., 2002; Findholt et al., 2013; Hearn et al., 2007; Schalkwijk et al., 2016; Story et al., 2002; Turner et al., 2009; O. Walker et al., 2007).

Finally, health professionals were wary the level of care children with obesity required, incurring additional costs both to health professionals and patients due to a lack of financial reimbursement and the cost of ongoing support (Barlow & Dietz, 2002; Hearn et al., 2007; Jelalian et al., 2003; Lesley A. King et al., 2007; Larsen, Mandleco, Williams, & Tiedeman, 2006; McFarlane et al., 2009; McMeniman et al., 2011; Schalkwijk et al., 2016; Spurrier et al., 2006; Leanne Jane Staniford et al., 2011). In Australia, the health professionals did not believe there were sufficient public services offered to children with obesity and the cost of private services made care inaccessible, particularly to lower SES patients (Findholt et al., 2013; Lucas et al., 2014; Story et al., 2002; Turner et al., 2009; O. Walker et al., 2007). In both the Australian and international literature, competency barriers were identified as a lack

of appropriate knowledge and training around behaviour counselling (Findholt et al., 2013; Mazur et al., 2013; Schalkwijk et al., 2016; Story et al., 2002).

2.2.2.5b Familial barriers

Familial barriers included family dysfunction and a lack of parent involvement and motivation (Findholt et al., 2013; Ganter et al., 2015; K. M. Jones et al., 2013; Moyers et al., 2005; Schalkwijk et al., 2016; Story et al., 2002; Tarasenko et al., 2014; Turner et al., 2009). Health professionals acknowledged that amongst some cultures, a higher body weight is considered healthy; therefore, a lack of parental concern made discussing the risks of being overweight difficult for some practitioners (Ganter et al., 2015; Moyers et al., 2005). Interestingly, amongst the international literature, topics that arose as barriers differed between qualitatively and quantitatively generated data. For instance, all but one interview/focus group study revealed sensitivity of raising or discussing the topic of weight as a main barrier to management while none of the survey/questionnaire studies included questions about topic sensitivity (Chamberlin et al., 2002; Findholt et al., 2013; Tarasenko et al., 2014; O. Walker et al., 2007; Yarborough et al., 2012). Australian studies reported weight being a sensitive issue and parental denial as a major barrier to raising the issue of childhood obesity (Hayden et al., 2009; K. M. Jones et al., 2013; L. A. King et al., 2007; McFarlane et al., 2009; McMeniman et al., 2011; Sivertsen et al., 2008).

2.2.2.5c External environmental barriers

The most important environmental barriers to childhood obesity management health professionals acknowledge involve the safety and structure of the external built and social environment (Findholt et al., 2013; K. M. Jones et al., 2013; L. A. King et al., 2007; Pelletier-Fleury et al., 2006; Turner et al., 2009). Safety concerns, including traffic concerns, unsafe sidewalks and fear of violence were reported as barriers that prevented parents from allowing their children to engage in outdoor play (Turner et al., 2009). A lack of transportation and time (due to work and school commitments) was also identified by health professionals as a barrier that kept families from attending consultations for their children's weight (Ganter et al., 2015). Pressures from the environment including advertising and accessibility to discretionary foods were also perceived as barriers (Cano Garcinuño et al., 2008b; Franc et al., 2009; K. M. Jones et al., 2013; Lucas et al., 2014; Moyers et al., 2005; Pelletier-Fleury et al., 2006). Health professionals also shared an opinion that many parents with obese children

lack the access to affordable and healthy foods which impacted on families' abilities to eat healthily (Chamberlin et al., 2002; Franc et al., 2009; Ganter et al., 2015; Turner et al., 2009). Health professionals in only two of the Australian studies mentioned the external environment to be a barrier to childhood obesity management, both were qualitative, which likely means the quantitative surveys failed to ask about perceptions about the impact of the external environment on childhood obesity management.

2.2.3 Parents' perceptions of childhood obesity management

The following review of parental perception literature sought to include studies from the childhood obesity management setting that expressed perceptions of parents with children who were diagnosed with obesity.

2.2.3.1 Search criteria for perceptions of parents of children in childhood obesity management

Peer review literature was searched using key words: "childhood obesity management", "childhood obesity treatment", "parent", "caregiver", "carer", "view", "perception", "attitude", "belief". Articles were included if they were written in English, reported exclusively on parents who had a child/children who was/were in weight management or had been diagnosed with obesity and had been recruited from a weight-management (healthcare) setting. Initially, it was planned to separate Australian literature in this space from the international literature. However, only two articles expressing parental perceptions of childhood obesity management were identified in the Australian context. Furthermore, after a complete reading and examination of the articles, the themes were consistent with those found in the international literature. Therefore, this part of the review reports on the combined findings of both international and Australian articles.

2.2.3.2 Description of sample

This literature review revealed seventeen studies that fit the inclusion criteria of parents' perceptions of childhood obesity from the management setting. These studies included enquiries from the primary care setting, weight-management intervention programmes and hospital clinics. The majority of criteria-meeting studies used qualitative methods of data collection and analysis; contrary to the quantitative tendency of reviewed health professional studies. Of the seventeen studies, twelve were qualitative in which data was collected either

by interviews or focus groups; two of the studies were intervention evaluations; two studies used questionnaires or surveys and one included article was a literature review. Most of the studies took place in the UK or the USA; two were from Canada, two from Australia and one from the Netherlands. A detailed description of the studies reviewed can be viewed in **Table 6**, below.

There were only two Australian studies that matched the search criteria. Both were conducted within the last ten years. The Australian studies were both qualitative studies in which data was collected from parents through the use of semi-structured interviews. The sample sizes ranged between participants from 8 families and 21 parents. The most recent study took place in 2016. The study sought to understand parents' (n=21) perceptions of their involvement in a state-funded, community-based healthy lifestyle program aimed at addressing childhood obesity (Davidson & Vidgen, 2017). The older study was a comparative study of families and GPs, published in 2013, and reported on the experiences of eight families involved in a childhood obesity study in general practice. The study took place in the metropolitan region of Melbourne, Victoria (K. M. Jones et al., 2013).

Four main themes were apparent in the literature; these included:

(i) Parental resistance to seeking assistance for their child's weight;
(ii) Parental motivators to seek assistance for child weight;
(iii) Perceptions about childhood obesity management;
(iv) Parents' perceptions of barriers to childhood obesity management.

Table 6: Studies reporting parental perceptions of childhood obesity management

Author	**Nationality**	**# of parents**	**Method**	**Synopsis**
Edmunds, L. D. (2005). Parents' perceptions of health professionals' responses when seeking help for their overweight children.	England, UK	Parents of 40 children	Interviews	**Aim:** exploration of parental perceptions of experiences with health professionals after seeking help for their overweight child (4-15 years-old) **Method:** Qualitative interviews using body shapes as prompts. Purposive sampling. n=Parents of 40 children. Thematic analysis. **Findings:** Many parents felt health professionals did not know how to address the issue of childhood weight management. Parents reported monitoring children and attempting to self-help before seeking professional help. Reported GPs offered referrals, further investigation, advice parents were already implementing. Some parents reported GPs blamed them or dismissed their concerns. Paediatric dietitians were most helpful while community dietitians were perceived less useful.
Rhee, K. E., De Lago, C. W., Arscott-Mills, T., Mehta, S. D., & Davis, R. K. (2005). Factors associated with parental readiness to make changes for overweight children.	USA	n=151	Q'naire	**Aim:** Identify demographic factors and parents' perceptions associated with likelihood of behaviour-change to address weight issues. **Method:** 43-item self-administered cross-sectional survey. Conducted between September 1-December 31, 2003. 151 convenience sample of caregivers of children (2-12 years with BMI>85th percentile for age and gender) attending an inner-city, hospital-based paeds clinic in North Philadelphia . **Findings:** Parents with children 8<years of age more prepared to action changes. Parents who perceived they or their child was overweight or that their child's weight posed a health risk to their child were also more ready to make health-behaviour changes.

Kaufman, L., & Karpati, A. (2007). Understanding the sociocultural roots of childhood obesity: Food practices among Latino families of Bushwick, Brooklyn.	Latino families-USA	60	ethnography	**Aim:** Identify sociocultural aspects of childhood obesity for the purpose of informing prevention **Method:** Participant observation, interviews, and discussions of life histories to explore food practices and everyday lives of Latino families living in a low SES neighbourhood of New York City. **Findings:** Food is used as a supplement to a lack of resources parents can provide to their families. Food plays an important role in which these families perceive health, love and wellbeing. These ideas drove families' food practices and activities which were also conductive of overweight and obesity. Impoverished families used food as compensation for other things they were unable to provide, therefore, food was central to their culture and forms of communication and connection.
Rice, J., Thombs, D., Leach, R., & Rehm, R. (2008). Successes and Barriers for a Youth Weight-Management Program.	Tennessee, USA	100?	Evaluation	**Aim:** Evaluate recruitment for a childhood obesity program for 7-17-year-olds in a metropolitan area. **Method:** Patient-recruiting methods were monitored and included working with physicians and schools and marketing to consumers. **Findings:** Program was clinically successful, but patient recruitment was unsuccessful leading to discontinuation of program. Parental attitudes for not wanting to enrol: denial that their child's weight required medical attention. Lack of willingness to change improve nutrition and exercise with home environment. Did not want to talk to their child about their weight. Denial they had a role or responsibility for their child's weight status. Those parents who enrolled their child expressed a desire to address their child's weight status before it posed a serious health problem. Many

				reported they had personally attempted to address their child's weight previously with little success with making and maintaining changes. New models of patient recruiting should address parents' perceptions to improve recruitment.
Holt, N. L., Moylan, B. A., Spence, J. C., Lenk, J. M., Sehn, Z. L., & Ball, G. D. C. (2008). Treatment Preferences of Overweight Youth and Their Parents in Western Canada.	Canada (clinic)	41	Interviews	**Aim:** Examine the family environment and gauge treatment preferences among overweight children and their parents. **Method:** Data collection: 41 interviews with parents and children from a wait-list of a weight management clinic. Analysed data using Grounded theory methodology. **Findings:** Framed around an ecological framework, findings ranged from family issues to policy issues. At the family level, parents attempted to change their children's lifestyle behaviours by using contradictory and inconsistent strategies that reflected extremes of leniency and control. Parents resisted reducing screen time for their children because they thought it important to their social development. Participants desired better help from health care professionals that included a family-based approach and access to increased social support. Policy and program-level changes were identified as necessary to help them make and maintain health behaviour changes.
Tyler, D. O., & Horner, S. D. (2008). Collaborating with low-income families and their overweight children to improve weight-	Texas, USA (clinic)	Visits with 35 children and their parents	Evaluation/ descriptive analysis	**Aims:** Describe families experiences and perceptions of an ongoing longitudinal pilot study to improve weight-related behaviours. **Method:** Process evaluation of intervention employed in an ongoing longitudinal pilot study. Descriptive analysis of field notes and audiotapes of parent–child–provider interactions during intervention visits (n = 111).

related behaviors: An intervention process evaluation.				**Findings:** Family-health professional discussions around physical activity brought to light several barriers to engaging in physical activity. experienced by families. Barriers included: equipment issues (i.e., flat bike tires and sports balls, broken or lost equipment), fluctuations in weather, hectic lifestyles, safety issues of outdoor play (i.e., nearby correctional institution, lack of sidewalks, or unpaved roads), lack of playmates or safe spaces to play (i.e. parks or playgrounds), and fears and concerns about experiencing physical fatigue or pain. Challenges included resistance to change, busy family routines, complicated family dynamics, financial and seasonal barriers were frequently discussed. Peers, other family members and the participants, themselves were unsupportive of recommended health-behaviour changes. Agreement between caregivers was a commonly reported challenge as one parent was often supportive of the change while the other disapproved of limiting children's intake of certain foods. Of particular challenge was families in which parents expected children to make changes, however, were not compliant with making changes, themselves. Cost of healthy food was expressed as a key financial barrier to parents increasing their intake of fresh produce, leans meats and low-calorie-snacks. Other barriers to providing healthy foods for their families included lack of access to functional cooking appliances (e.g., oven, slow-cookers/crock pot) to prepare meals. Parents discussed how fluctuations in marital status, parents' own health and financial status also posed issues to their abilities to partake in health-related behaviours. Parents experiencing these stressful events expressed "having little energy" or "bad timing" to initiate or sustain healthy lifestyle changes.

Turner, K. M., Salisbury, C., & Shield, J. P. H. (2012). Parents' views and experiences of childhood obesity management in primary care: A qualitative study.	Bristol, UK (intervene-program)	n=15	Interviews	**Aim:** To explore parents' perceptions and experiences of childhood obesity treatment in the primary care setting. **Method:** In-depth interviews with15 parents of obese 5-10 year-olds. Parents were recruited via a hospital-based childhood obesity clinic, general practices and interention groups based in Bristol, England. Interviews were audio-taped, transcribed verbatim and analysed thematically. **Findings:** Parents perceived primary care to be an appropriate setting for childhood obesity treatment. However, they were reluctant to consult due to a fear of being blamed for their child's weight and a concern around the sensitivity of the topic to their child's mental health. Parents were sceptical whether practitioners had the knowledge, time and resources to effectively manage childhood obesity. Parents' experiences varied in the extent to which they had found consulting a HP helpful. Interviews suggested GPs and school nurses offer different types of support.
Newson, L., Povey, R., Casson, A., & Grogan, S. (2013). The experiences and understandings of obesity: Families' decisions to attend a childhood obesity intervention.	UK	n=11 families	IPA (interview)	**Aim:** To explore the experiences of families faced with the decision to attend a childhood obesity intervention. Also, to highlight recommendations on how to improve attendance at obesity interventions, and to inform the development of future local public health strategies to prevent and treat childhood obesity. **Method:** Interpretative phenomenological analysis. Data collection: interviews with 21 families' on their experiences of obesity and the perceived appropriateness of a particular obesity intervention. **Findings:** Themes emerged highlighting the differences and similarities between perceptions of people who chose to attend and those that chose not to attend regarding childhood obesity including: 1) Perceptions of the

				intervention. 2) Practical barriers and overcoming hurdles to attending. 3) Availability and suitability of local facilities
Lucas, P. J., Curtis-Tyler, K., Arai, L., Stapley, S., Fagg, J., & Roberts, H. (2014). What works in practice: user and provider perspectives on the acceptability, affordability, implementation, and impact of a family-based intervention for child overweight and obesity delivered at scale.	Bristol, UK	n=23 families (64 people)	Interview	**Aim:** Examination of acceptability and implementation of a child weight management program for participating families. **Method:** Participants were selected on the basis of a maximum variation sample providing a range of experiences and social contexts. Qualitative, semi-structured interviews were conducted with 29 health professionals (HPs)who commissioned or delivered the programme, and 64 individuals from 23 families in 3 English regions. Interviews were transcribed verbatim and analysed using framework analysis. **Findings:** Barriers for families attending the intervention included: problems with transport, work schedules and competing demands on family time. Families highlighted the difficulty of investing time and emotions into implementing changes in the household. Health professionals worked hard (including accommodating for social and cultural needs) to proactively recruit, retain and motivate families, which increased uptake but also increased cost. Both parents and HPs valued skilled delivery staff. Both providers and parents expressed concerns about long term outcomes, and, particularly how they felt they would be compromised by an obesogenic environment. Most families felt that they had gained something from the program, but few felt that it was successful in changing weight status..
Sharifi, M., Marshall, G., Goldman, R., Rifas-Shiman, S.		n=41 (5Focus groups)	Focus groups	**Aim:** To explore perspectives and strategies of parents of positive outlier children living in high-risk neighbourhoods.

L., Horan, C. M., Koziol, R., . . . Taveras, E. M. (2014). Exploring Innovative Approaches and Patient-Centered Outcomes From Positive Outliers in Childhood Obesity.				**Method:** Data collection: assessment of five years of height/weight data from the electronic health records of 22,443 Massachusetts children (6-12 years-old) seen for a routine check up as part of a Well-Child program. Researchers identified children with any history of BMI in the 95th percentile or higher (n = 4007) and generated a BMI z-score slope for each child using a linear mixed effects model. Parents were then recruited for focus groups from the subsample of children with negative slopes who also lived in zip codes where more than15% of children were obese. Focus group transcripts were analysed using an immersion/ crystallization approach. **Findings:** Parents named child inactivity, above-average clothing sizes, exercise intolerance, and negative peer interactions as key areas that concerned them about their child's weight. Commonly reported strategies among positive outlier families were family-level changes, parent modelling, consistency, household rules/limits, and creativity in overcoming resistance. Parents expressed a preference for childhood obesity interventions that provide tailored education and support that extended outside clinical settings and are delivered by both health care professionals and other parents who had been successful.
Brown, L., Dolisca, S.-B., & Cheng, J. K. (2015). Barriers and Facilitators of Pediatric Weight Management	Boston, MA, USA Paediatric practice	n=25 patient families	Interviews	**Aim:** To explore at-risk overweight children and families' barriers and facilitators to paediatric weight management. **Method: S**emi-structured interviews with overweight children and families (n=25) from diverse backgrounds at a large, urban academic paediatrics practice. Interviews were analysed using systematic thematic analysis.

Among Diverse Families.				**Findings:** Barriers to successful weight management included: 1) Inadequate resources (financial, time, access to programming, knowledge). 2) Challenging social contexts (cultural practices and expectations, interpersonal dynamics). 3) Negative emotional state (lack of confidence, defeat, loneliness). 4)Parental denial Enablers: Participants described access to resources, child-parent-health professional partnerships, and consistent support as key elements of successful weight management.
Schalkwijk, A. A. H., Bot, S. D. M., de Vries, L., Westerman, M. J., Nijpels, G., & Elders, P. J. M. (2015). Perspectives of obese children and their parents on lifestyle behavior change: a qualitative study.	Netherlands	n=24 parents n=18 children	Interviews	**Aims**: 1) Explore the expectations of parents and their overweight children in relation to a childhood obesity lifestyle intervention. 2) Identify parents' and children's perceived barriers to making lifestyle changes within their social context (i.e. within their family, school and amongst friends and peers) as well as enablers of these changes. 3)Identify the needs of parents and their children involved in a lifestyle intervention for childhood obesity. **Method:** Qualitative, semi-structured interviews with 24 parents and 18 children who had participated in a lifestyle intervention program in the Netherlands **Findings:** Participants expected to lose weight by being physically active or by eating healthily. Parents struggled with adopting and adhering to new rules and the lack of support from other family members. Children struggled with inconsistent parenting and a lack of support from their parents. Bullying experienced at school interfered with children's ability to make changes. Support from peers, on the other hand, encouraged progress.

				Parents identified the need for the GPs to discuss overweight in a non-judgmental manner and to show support and interest in helping families meet their weight management goals.
Turer, C. B., Flores, G., Mehta, M., Durante, R., & Wazni, F. (2016). Parental perspectives regarding primary-care weight-management strategies for school-age children.	USA	n=19 parents 6 focus groups	Focus groups	**Aim:** To identify parental perceptions of weight-management strategies for school-age children **Method:** Focus groups were conducted with parents of overweight and obese (body mass index ≥ 85th percentile) 6–12-year-old children recruited from primary-care clinics. **Findings:** Parents' recommendations on the primary-care provider's role in weight management included monitoring weight, providing guidance regarding health risks and lifestyle changes, consistent follow-up and using discretion during weight discussions. Parents preferred when weight management strategies emphasised healthy lifestyles and enjoyment and small changes to current routines and parental remodelling. Parents prefer guidance regarding healthy dietary practices rather than specific weight-loss diets. Parents recommended easy-to-follow instructions and emphasising servings over counting calories to improve dietary adherence Effective weight-management strategies identified by parents included health professional engagement in weight management, simple instructions regarding healthy lifestyle changes and parenting and moving away from specific weight-loss diets.
Turer, C. B., Upperman, C., Merchant, Z., Montaño, S., & Flores, G. (2016). Primary-Care Weight-	USA	n=221	Survey	**Aim:** To examine how parents perceive the importance of clinical practices for paediatric weight management and distinguish whether agreement/ denial of their child's weight status impacts on how parents perceive the importance of clinical practices **Method:** Mixed-methods analysis of a 32-question survey of parents of 2-18-year-old overweight children assessing parental agreement that their

Management Strategies: Parental Priorities and Preferences.				child is overweight, the single most important thing providers can do to improve weight status, ranking American Academy of Paediatrics–recommended clinical practices, and preferred follow-up interval. **Findings:** Parents prefer weight-management strategies that prioritize evaluating weight-related problems, growth-chart review, and regular follow-up. Parents who disagree that their child is overweight believe assessment of overweight should be changed
Davidson, K., & Vidgen, H. (2017). Why do parents enrol in a childhood obesity management program? A qualitative study with parents of overweight and obese children.	QLD, Australia	n=21 parents	Interviews	**Aim:** To explore factors that influence parents' decisions to enrol in a program to address their child's weight. **Method:** Qualitative. Semi-structured telephone interviews with 21 parents of overweight primary-school-aged children who had enrolled in a healthy lifestyle program. Questions were developed and analysed using the Theory of Planned Behaviour. They addressed parental reasons for enrolment, expectations of the program and apprehensions of enrolling **Findings:** Parents who chose to enrol their children expressed previously being aware of their child's weight status and had attempted to address it themselves and/or had sought help from a number of people; including health professionals. Parents' decision to enrol their children was influenced by their evaluation of their previous attempts and how they perceived their child would react to the program (i.e. mental health).
Jones, K. M., Dixon, M. E., & Dixon, J. B. (2013). GPs, families and children's	Melbourne, VIC, Australia	n=8 families	Interviews	**Aim:** Explore perceptions and experiences of treating childhood obesity of GPs, families involved in a childhood obesity study in general practice' and families not involved in the project, but who had concerns about childhood obesity.

perceptions of childhood obesity.				**Method:** A semi-structured schedule was developed, based on the literature, to address the aims. Ten GPs and eight families involved and four families previously not involved in the project participated in interviews. **Finding:** Issues that emerged for participants highlighted several areas participants felt were important to childhood obesity management: 1) Both health professionals and families shared views around who they perceived was responsible and comfortable raising the topic (GPs expected families to raise the issue due to sensitivity, while families expected GPs to raise the issue). 2) Ability of GPs to provide support to families and families expectations it would be provided. 3) GPs and parents' perceptions of difficulties sustaining improvements
(O'Keefe & Coat, 2009) Consulting parents on childhood obesity and implications for medical studien learning	South Australia	n=9 parents	Interviews	**Aim:** Explore parent attitudes to the role of the doctor in CHO and implications for medical student learning **Method**:semi-structured interviews with parents. **Finding:** Parents recognise childhood obesity has several health consequences but are most concerned about bullying and teasing. They believe they have a role to play in maintaining family health and healthy diet. Parents believe health professionals should be able to physically assess children, provide appropriate diet and physical activity advice and communicate sensitively about CHO.

2.2.3.3 Parental resistance to seeking assistance for their child's weight

Rhee et.al. (2005) concluded that recognition of weight as a status of health is necessary for parents to elicit change and willingness to seek treatment. A lack of parental recognition is often cited in the literature as a common barrier to engaging parents in childhood obesity management; however, even in the literature from the management setting this continues to be an issue (Brown, Dolisca, & Cheng, 2015; Davidson & Vidgen, 2017; Newson, Povey, Casson, & Grogan, 2013; Rice, Thombs, Leach, & Rehm, 2008; Christy Boling Turer, Upperman, Merchant, Montaño, & Flores, 2016). Parents often did not acknowledge the child's weight status to be of concern as overweight and obesity was considered a cultural or social norm (Trigwell, Watson, Murphy, Stratton, & Cable, 2014).

Parents expressed resistance to addressing their child's weight when they did not believe their child's weight was a problem (Brown et al., 2015; Bruss et al., 2005; Davidson & Vidgen, 2017; Goodell, Pierce, Bravo, & Ferris, 2008; Newson et al., 2013; Rice et al., 2008; Christy Boling Turer et al., 2016). These parents sometimes acknowledged their child was larger than other children, or sometimes normal in comparison to other children but they did not see the weight as a health issue (Brown et al., 2015; Kaufman & Karpati, 2007; Newson et al., 2013). An overwhelming message expressed by the literature was parents' disagreement with the definition of 'obesity'. More than half of the studies suggested parents disliked the use of the word 'obese' and believed that BMI was an inadequate number/descriptor with which to define *their* child (Brown et al., 2015; K. M. Jones et al., 2013; Kaufman & Karpati, 2007; Newson et al., 2013; O'Keefe & Coat, 2009; Schalkwijk et al., 2015; Sharifi et al., 2014; Christy Boling Turer et al., 2016; Turner et al., 2012). In some studies, parents acknowledged their child's weight was an issue but were unwilling to change the home environment or make changes themselves to support the child's treatment (Newson et al., 2013; Rice et al., 2008; Schalkwijk et al., 2015; Christy Boling Turer et al., 2016; Tyler & Horner, 2008).

Even though some parents were concerned about their child's weight, they failed to engage with services because they were more concerned about their child's involvement in a weight-management program would bring-on or worsen peer bullying (Brown et

al., 2015; Davidson & Vidgen, 2017; Kaufman & Karpati, 2007; Newson et al., 2013; Sharifi et al., 2014; Turner et al., 2012).

2.2.3.4 Parental motivators to seek assistance for child weight

While the literature review on health professionals' perceptions of childhood obesity management suggested parents' lack of motivation was a major barrier to childhood obesity management, the literature review on parents' perceptions of childhood obesity management revealed parents who were motivated to seek assistance for their child's obesity generally did so out of concern for their child's health and well-being (Brown et al., 2015; Davidson & Vidgen, 2017; Newson et al., 2013; Rice et al., 2008). This suggests parents recognised the child's weight was impacting on their child's health which therefore forced them to acknowledge there was a problem (Eckstein et al., 2006; Newson et al., 2013).

The most reported motivator for parents seeking medical assistance for their child's overweight occurred shortly after school-entry due to bullying by peers (Brown et al., 2015; Davidson & Vidgen, 2017; N. L. Holt et al., 2008; Lucas et al., 2014; Sharifi et al., 2014; Turner et al., 2012). Parents who themselves were overweight as children were motivated to help their child avoid the stigma they had experienced when younger (Kaufman & Karpati, 2007; K. E. Rhee, De Lago, Arscott-Mills, Mehta, & Davis, 2005; Schalkwijk et al., 2015; Sharifi et al., 2014). Parental concern that their child's weight may compromise their overall health was also a catalyst for attempting lifestyle change (K. M. Jones et al., 2013; Lucas et al., 2014; K. E. Rhee et al., 2005; Rice et al., 2008). Peer comparisons by parents also sparked concern of child weight particularly with relation to their child's size and activity levels. Many parents reported having to buy clothing labelled for older children and becoming concerned with their child's weight trajectory (Brown et al., 2015; Davidson & Vidgen, 2017; Sharifi et al., 2014). Others noted their child's limited ability to participate in activities with other children due to shortness of breath/endurance was also a red flag that motivated seeking health professional input (Davidson & Vidgen, 2017; Sharifi et al., 2014).

2.2.3.5 Parents' perceptions towards obesity management

Parents' perceptions around the childhood obesity consultation setting contributed to another dominant theme of this review. These perceptions encapsulated expectations of how parents viewed health professional roles and the nature of treatment for their child.

2.2.3.5a Parents' expectations of health professionals' roles and responsibilities

Parents expressed several expectations of health professional roles and responsibilities with regard to child weight management. Because parents appeared to be concern-driven, they expected health professionals to initiate discussion if the health professional believed their child's weight was a possible threat to their long-term health (K. M. Jones et al., 2013; O'Keefe & Coat, 2009; Schalkwijk et al., 2015; C. B. Turer, Flores, Mehta, Durante, & Wazni, 2016; Christy Boling Turer et al., 2016; Turner et al., 2012). Furthermore, parents expected health professionals to have the necessary skills and knowledge to treat their child's obesity (Brown et al., 2015; K. M. Jones et al., 2013; Lucas et al., 2014; C. B. Turer et al., 2016; Christy Boling Turer et al., 2016; Turner et al., 2012). However, in some cases where parents had raised concern over their child's weight with health professionals, they felt the clinicians either did not know how to address it, gave advice that was not helpful or did not perceive the child's weight to be a problem (Davidson & Vidgen, 2017; Edmunds, 2005; N. L. Holt et al., 2008; Turner et al., 2012). These interactions left parents feeling disappointed with and unsupported by healthcare services and despaired towards being able to address their child's weight (Davidson & Vidgen, 2017; N. L. Holt et al., 2008).

This disappointment reported by parents from these studies highlights the poor management of childhood obesity also reflected in the reviewed literature regarding health professionals. The results of both literature reviews show congruence between the health professionals who generally did not feel confident or adequately resourced providing weight management advice for children with obesity and parents who were on the receiving end of a service that was not adequately resourced. While both parents and health professionals felt healthcare delivery of childhood obesity management was poor, parents' perceptions differed from primary care providers who did not see primary care as a suitable setting for childhood obesity management. Parents believed primary care was a suitable setting for childhood obesity treatment because it was both

convenient and accessible (K. M. Jones et al., 2013; Schalkwijk et al., 2015; C. B. Turer et al., 2016; Turner et al., 2012).

Parents expected that health professionals would target their interventions towards their child and were disappointed when the health professionals directed their treatment recommendations towards the parents, themselves (Schalkwijk et al., 2015; C. B. Turer et al., 2016). Often parents believed the child would be more obliging if they were being told by the clinician, they had to make the changes rather than by their parents (Davidson & Vidgen, 2017). In other instances, when parents sought help for their adolescent children, they expressed irritation when health professionals would choose to speak to the adolescent alone; this contributed to parents feeling left-out when they were keen to be involved in managing their child's weight (Davidson & Vidgen, 2017; Schalkwijk et al., 2016; C. B. Turer et al., 2016).

2.2.3.5 Parents' perceptions of barriers to childhood obesity management

The literature identified a range of barriers parents face when trying to address life-style issues associated with their child's obesity and attendance of consultations. Amongst these, issues within the family, cost and accessibility to healthy foods and the time to plan and prepare were obstacles to changing family habits. Parents reportedly experienced stigma and guilt for their role in their child's obesity that put them off attending childhood obesity consultations. Previous bad experiences with health professionals who had blamed them for their child's weight also contributed to a relunctance to engage with health professionals on this issue. Finally, the influence of their greater environment presented them with constant challenges that hindered their ability to have their children engage in regular physical activity or healthy eating. The following sections will discuss these themes in detail.

2.2.3.5a Familial barriers

The most reported barriers to effective child weight management included complicated family dynamics, extended family and friends' disagreement with new parental rules around feeding/quality of food given to children and limited time to implement changes and/or attend programmes or consultations regarding the child's weight. Complicated family dynamics was commonly mentioned by parents as a barrier to weight management in the reviewed literature. Split households or households in which

parents did not equally agree the child's weight was of concern; and a lack of cohesion or agreement (between caregivers) interfered with the ability of parents to successfully implement whole-of-family lifestyle changes suggested by health professionals (Brown et al., 2015; Davidson & Vidgen, 2017; N. L. Holt et al., 2008; Kaufman & Karpati, 2007; Lucas et al., 2014; Newson et al., 2013; Rice et al., 2008; Schalkwijk et al., 2015; Tyler & Horner, 2008).

Several parents in the included studies also stated extended friends and family often disagreed with the parents' decision to seek health advice for their child(ren)'s weight; or did not agree with the parents' rules around what to feed the child and would sabotage parents' efforts to maintain healthy lifestyle changes by providing discretionary foods; sometimes because these 'rules' contradicted traditional cultural and social beliefs about feeding (Brown et al., 2015; Kaufman & Karpati, 2007; Lucas et al., 2014; Newson et al., 2013; Schalkwijk et al., 2015; Sharifi et al., 2014; C. B. Turer et al., 2016; Tyler & Horner, 2008).

2.2.3.5b Cost and accessibility barriers

Contextual situation such as financial hardship, lack of time, lack of accessible community resources and neighbourhood safety concerns were also barriers to successful intervention implementation mentioned by parents in the literature (O'Keefe & Coat, 2009). Most participants from the reviewed studies were of a low SES demographic within high income countries. These articles revealed cost and accessibility of affordable services, healthy foods and community resources as a major hindrance to lifestyle modification. Parents reported a lack of time in half of the reviewed studies as a major barrier; managing working hours and multiple schedules interfered with maintaining and implementing lifestyle strategies to weight management (Tyler & Horner, 2008). Financial hardship was flagged as a barrier to the perceived unaffordability of healthy foods and to taking part in organised sport or physical activity (Kaufman & Karpati, 2007; Lucas et al., 2014; Rice et al., 2008; Schalkwijk et al., 2015; Turner et al., 2012; Tyler & Horner, 2008). Similarly to the reviewed literature regarding health professionals' perceptions of childhood obesity management, community resources were often described by parents as lacking, inconvenient, costly and inaccessible to parents of children involved in weight management therapy or

interventions (Brown et al., 2015; N. L. Holt et al., 2008; Newson et al., 2013; Schalkwijk et al., 2015; Sharifi et al., 2014; Tyler & Horner, 2008).

2.2.3.5c Humiliating experiences: Stigma and guilt

Parents expressed feelings of guilt and humiliation following consults in which the health professional blamed them for poor parenting being responsible for their child's weight status (Davidson & Vidgen, 2017; Edmunds, 2005; N. L. Holt et al., 2008; Sharifi et al., 2014; Turner et al., 2012). Negative experiences with health professionals had adversely impacted on parents' decision to enquire about early intervention or to further engage with that health professional to address their child's weight. Some parents reported having the opposite dilemma of raising concerns of their child's weight with a health professional and their concerns being dismissed. In these cases, parents were told nothing was wrong with the child or that the child would eventually grow-into their bigger body. These contradictions in health professional advice and diagnoses created confusion amongst parents inhibited the parents' attempts to seek intervention or further enquire about their child's weight status (Davidson & Vidgen, 2017; K. M. Jones et al., 2013; Kaufman & Karpati, 2007; Newson et al., 2013; Turner et al., 2012). In cases which the HP either raised concern or appeased a parent's concern regarding the child's weight some parents reported receiving no information from the HP that they had not been aware of; many parents expressed being unimpressed with the HP's service delivery as they felt equally disempowered by the lack of new information or strategies with which to address their child's weight (Davidson & Vidgen, 2017; Edmunds, 2005; N. L. Holt et al., 2008; Newson et al., 2013; Turner et al., 2012). Many parents were also hardly convinced their child's weight status would change with intervention; this suggests a lack of confidence in the effectiveness of interventions and a belief that childhood obesity is beyond parental control (Davidson & Vidgen, 2017; Edmunds, 2005; Christy Boling Turer et al., 2016; Turner et al., 2012). One study reported parents feeling ambivalent about intervention success even following participation in a child-weight management intervention (Lucas et al., 2014). Some studies reported parents' hopelessness in changing their child's weight status was derived from previous unsuccessful weight-management efforts (Brown et al., 2015; Davidson & Vidgen, 2017; Turner et al., 2012).

2.2.3.5d External environmental barriers

Consistently maintaining changes post-intervention posed a major barrier to long-term successful weight outcomes for children, many parents reiterated a sense of hopelessness in being about to routinely navigate healthy choices in an environment that is constantly encouraging discretionary food consumption and sedentariness (Davidson & Vidgen, 2017; Lucas et al., 2014; Schalkwijk et al., 2015; C. B. Turer et al., 2016). Several parents mentioned schools as barriers to maintaining the healthy habits children had been encouraged to adopt due to canteens offering unhealthy foods like pizza or chips and few opportunities for physical activity (Brown et al., 2015; N. L. Holt et al., 2008; Schalkwijk et al., 2015; Sharifi et al., 2014; Tyler & Horner, 2008). Deceptive packaging and marketing strategies by companies and perceived equivocal health benefits of foods (e.g. fruit vs. fruit juice) added to the stress parents experienced in making conscious attempts to provide healthy foods for their children (Brown et al., 2015; C. B. Turer et al., 2016; Tyler & Horner, 2008). An abundance of fast food outlets and independent stores selling mostly packaged items also contributed to perceived environmental barriers (N. L. Holt et al., 2008; Kaufman & Karpati, 2007; Lucas et al., 2014; Sharifi et al., 2014).

Parent-reported environmental hindrances to child physical activity included safety concerns of allowing children to play outside; as generally the lower SES suburbs in which these families reside have increased crime rates (Lucas et al., 2014; Newson et al., 2013; Sharifi et al., 2014; Tyler & Horner, 2008). Seasonal variations (extreme heat or cold) in weather were also noted to interfere with levels of physical activity with some parents expressing the winter months particularly difficult to find suitable recreational activities (Brown et al., 2015; Tyler & Horner, 2008).

2.2.3.4 Gaps in the literature

The review, which was dominated by international literature, suggested both parents and health professionals felt unsupported by their health systems to effectively address childhood obesity. Health professionals felt they lacked adequate resources, training and referral options to be able to effectively manage childhood obesity. Most of the clinical investigation into health professionals' practice of childhood obesity management observed adherence to clinical guidelines and indicates both awareness and utility of the guidelines are extremely low; indicating children with obesity are not

receiving the quality of care needed. Parents of children who engaged with weight management therapy felt they were generally not supported by their health professionals and the greater environment to maintain the changes needed to benefit their child's health. The studies of parents and health professionals suggested childhood obesity management requires a systematic approach to ensure delivery of care is adequately structured and resourced to support both health professionals and parents of obese children.

While the Australian literature on childhood obesity management appears consistent with the findings of international studies, there is a paucity of information regarding childhood obesity management in the Australian context. Australian studies investigating perceptions of health professionals in childhood obesity management show studies have focused on the ability and confidence of health professionals to identify and manage childhood obesity rather than attitudes, beliefs or experiences that have been grounded in the management setting (Gerner et al., 2006; Hayden et al., 2009; Sivertsen et al., 2008). Little is known about the childhood obesity practices of Australian healthcare professionals; including how they are managing this patient cohort, how frequently they encounter them and how often they diagnose or actively manage childhood obesity.

A clear understanding of what sectors of the health care system are involved in childhood obesity management and how health professionals navigate the system in order to provide care for children with obesity, is needed. The Australian studies involved small sample sizes, and only tended to only report the experiences of general practitioners and paediatricians, despite the fact that clinical guidelines recommend multidisciplinary care including allied health. Another limitation of the reviewed studies was their high use of quantitative methods; most research that gathered information from health professionals in this review relied on quantitative surveys and questionnaires with limited opportunities for health professionals to express their views without structured prompting. Results from these studies show primary care practitioners are not motivated and feel ill-equipped to manage this cohort. Little is known about what is occurring in treatment settings outside of primary care.

The level of provision of community, specialist allied health and group weight management services for children is not well understood (L. Baur & Alexander, 2016).

Little is known about the childhood obesity management setting in Australia including: What are the main concerns of non-primary care health professionals in managing this patient cohort? What is currently lacking that would assist with better management?

The landscape of childhood obesity treatment based on the Australian literature suggests several gaps that outline the need for a larger evidence-base to build effective services and policies. The fact that the Australian literature reviewed was limited by small sample sizes, was based mainly in primary care, and reported mainly quantitative data means we lack a well-represented understanding of how obese children are diagnosed, assessed and treated in the context of the Australian healthcare system and how this affects treatment outcomes.

Furthermore, a systemic view of clinical management of childhood obesity requires comparative research of health professionals' and parents' perceptions of current approaches to paediatric weight management. This is an area largely unexplored; yet, little is known about parents' views and experiences of obesity management within the clinical setting. Parents' experiences with childhood obesity management in Australia appears reliant on two small, case-based studies. There is a large gap of data reporting parents' experiences with childhood obesity management outside of these two specific settings.

Policies need to be informed by an understanding of the barriers and facilitators of current health care delivery for the treatment of childhood obesity management. Gaining the perspectives of Australian health professionals and parents who are either actively involved or who have previously been engaged in treatment for childhood is essential to building an evidence-base around which viable solutions can be discussed and formed.

The studies I have undertaken and presented in this thesis intend to address these gaps in the literature by exploring and describing how Australian health professionals and parents experience and perceive childhood obesity management; and interpreting their responses in the context of current childhood obesity approaches to clinical practice and policy.

3 Methodology

3.1 Introduction

The phenomena explored in the current study were health professionals' and parents' perceptions of childhood obesity and their experiences of its clinical management. Amongst the themes discussed by the health professionals, beliefs about the causes and consequences of childhood obesity influenced their perceptions of the barriers and facilitators impacting its management. The study also examined these stakeholders' perceptions of ways to improve intervention strategies. An interpretative phenomenological approach (Inouye et al.) was utilised to understand how health professionals make sense of childhood obesity.

The purpose of this chapter is to describe the research method used to achieve the study objectives. The epistemology, historical and current developments of IPA are discussed. This chapter outlines the process of data collection used in this study including: research tools, protocols and procedures and data saturation. This chapter also explains the process of data analysis and how the findings are reported. Finally, the ethical considerations will be discussed.

3.2 Research Question

Interpretative phenomenological analysis (Inouye et al.; J.A. Smith, Flowers, & Larkin, 2009) was selected as the most suitable approach to answering the research question: What are health professionals and parents' perceptions of and experiences with childhood obesity management?

3.3 Methodological approach

Interpretative phenomenological analysis (IPA) is an exploratory approach to qualitative research that focuses on the psychology of personal meaning and sense-making, for people who share a particular experience (Inouye et al.; J. A. Smith et al., 2009). IPA recognises people's experiences of a certain phenomenon are dependent on an individual's distinctive character, life experiences and personal incentives (J. A. Smith & Osborn, 2008). The purpose of IPA is to explore, understand and make sense of the subjective meanings of phenomena as they are experienced by those affected by the

phenomenon (J. A. Smith & Osborn, 2008). To achieve this purpose, the role of the researcher in IPA is to capture and reflect upon the principal claims and concerns of the research participants. The interpretation of the data should draw upon psychological concepts and strive to display the findings in a way that represents the psychological processes involved with the participants' experiences of the phenomenon (Larkin, Watts, & Clifton, 2006).

The value of IPA is not just that it seeks to explore and understand people's experiences of phenomena; it also takes the context in which these experiences and perceptions take place into account, and this made it a particularly appropriate approach for my study which explored the perceptions and experiences of Australian health professionals and parents within the context of childhood obesity management. The IPA approach has been employed to explore issues in the personal experiences of health and illness both from the perspective of patients who experience particular conditions and treatments and from that of caregivers and health professionals (J. A. Smith et al., 2009). It is a suitable approach for holistically exploring the whole experience of the healthcare treatment, both from the perspective of delivery as well as reception, as it creates an even platform for health professionals and people involved with treatment to describe their experiences (Peat, Rodriguez, & Smith, 2019). In IPA, the participant is viewed as the expert on the experience of the phenomenon, thus removing the influence of the power dynamic that can exist between practitioner and patient (Foucault, 2012; Peat et al., 2019). The idea of the expert participant and the processes that underpin the extraction and interpretation of their knowledge are key to the use of IPA as a research approach (Smith et al, 2009).

Qualitative research, in general, attempts to describe human experience and meaning of a particular event or phenomenon (Patton, 2002; Richards & Morse, 2013). Ultimately, the appropriateness of the research approach is dependent on the quality of data, and the interpretative processes used to answer the research question (Patton, 2002; Richards & Morse, 2013). Each approach has been developed upon distinct philosophies which drive the processes in which data is developed, extracted, analysed and presented. IPA acknowledges the data (concepts) is created through the experiences and perceptions of the participant, then, extracted by the researcher through an iterative process and finally interpreted by the researcher; who must analyse and present the data in a way that

represents individual meaning (what it means to the participant) while also positioning it in the context of the research question (Smith et al, 2009). The intention of these processes is to give voice and create meaning around how phenomenon, like childhood obesity, are experienced by a specific population. The theoretical underpinnings of IPA are important to understanding the rational for the processes described above and will be described in the next section.

3.3.1 Epistemology of interpretative phenomenological analysis

The foundations of IPA are rooted in three philosophical branches of knowledge: phenomenology, hermeneutics and idiography (J. A. Smith et al., 2009).

3.3.1.1 Phenomenology

The phenomenological aspect of IPA addresses the subjectivity of human experience, or *being*. The subjectivity of human experience acknowledges phenomena, which are experienced differently by each person. The focus of phenomenology as a methodological approach is to capture the essence of human experience, in all its various aspects, but particularly in the things which have meaning to individuals, and which establish their lived world (J. A. Smith et al., 2009).

In IPA, context is essential to understanding experiences of a phenomenon. IPA discerns how perceptions are situated within experiential, temporal and relational contexts (Heidegger, 1962). Our perception of our existence is always changing because our environment, interactions and relationships with the things around us are also changing. Therefore, our sense of self is transient as we encounter, learn and interact with old and new things all the time. No encounter can be the same because the components of what creates the context is forever changing: time, space, objects (Sartre, 1966).

The transient nature of how phenomena are experienced highlights the importance of replicating studies throughout time to understand how the 'phenomenon' or the experience of the phenomenon has changed with time. This is important to cross-sectional studies such as this one as each description that is given at this point in time is likely to change as a person has more encounters with a phenomenon. The experience of entering childhood obesity management at different stages of life may have distinct

implications for children, families and health professionals due to the fact that obesity impacts differently at different stages throughout the life cycle (Avery, 2017; Johnson, Gerstein, Evans, & Woodward-Lopez, 2006).

These experiences reveal a certain ‘essence’ of experiencing childhood obesity management, contextualised by a certain point in time. Therefore, the findings of this study today may not be appropriate to inform childhood obesity management in fifty years when the environment and health infrastructure may be completely different. Furthermore, childhood obesity is determined largely by social factors which are shaped by greater political, cultural and socio-economic influences that tend to fluctuate throughout time.

3.3.1.2 Hermeneutics

The interpretative aspect of IPA research has foundations in Hermeneutics. The discipline of Hermeneutics focuses on the methods and purposes of interpretation (J. A. Smith et al., 2009) and recognises interpretation to take place within context (Schleiermacher & Bowie, 1998). Grammar and language are the means by which humans convey the psychological processes of the individual from which they stem; however, interpretation reaches beyond the grammatical and psychological skills of the interpreter; it requires an element of intuition; an understanding of the speaker which assists the interpreter with contextualising the 'text' (J. A. Smith et al., 2009). The speaker is essential to the interpreter making sense of the narrative. While we have a shared essence of being human, the act of interpretation requires us to compare that which is different within each of us while maintaining our shared intrinsic human quality (J. A. Smith et al., 2009).

In IPA, the researcher is recognised as an active participant because of their active role of interpreting the experiences of others (Heidegger, 1962). Therefore, the researcher must be aware that their own interpretations of the phenomenon they are studying are also contextual. This self-awareness is referred to as ‘reflexivity’ in phenomenological research (J. A. Smith et al., 2009).

3.3.1.2a Hermeneutical phenomenology

The combined philosophies of phenomenology and hermeneutics are collectively referred to as Hermeneutical phenomenology. Hermeneutical phenomenology focuses on the *meaning* derived from the interpreted phenomenon. Like phenomenology and Hermeneutics, Hermeneutical phenomenology recognises 'meaning' as a dynamic thing that changes as information from new experiences can validate, void or overwrite previous ones (Laverty, 2003). Our constructed world both informs our interpretation of a phenomenon while at the same time the phenomenon is reconstructing the world as we know it. In the context of my study, this suggests the health professionals' and parents' perceptions of childhood obesity were influenced by preconceived ideas as well as their experiences with managing it, meaning that perceptions are constantly changing as experiences occur. This dynamic interpretative process is referred to as the "hermeneutic circle" and is central to hermeneutic theory (Laverty, 2003; J. A. Smith et al., 2009):

Thus, the phenomenon, the thing itself, influences the interpretation which in turn influences the fore-structure, which can then itself influence the interpretation. One can hold a number of conceptions and these are compared and contrasted and modified as part of the sense-making process. (J. A. Smith et al., 2009)p.26).

The hermeneutic circle is useful to the IPA researcher as an approach to processing the data surrounding a specific phenomenon. The data analysis here is a dynamic process in which the interpreter's understanding of the phenomenon is shifted or maintained by his/her interactions with new *texts.* The idea is that our entry into the meaning of a text can be made at a number of different levels, all of which relate to one another, and many of which will offer different perspectives on the part-whole coherence of the text.

3.3.1.3 Idiography

The IPA approach, thirdly, incorporates the study of the particular; of an individual, singular event; known as idiography. IPA takes an idiographic approach to the human experience of phenomenon by focusing on the in-depth experience of particular people, in a particular context (J. A. Smith et al., 2009). Thus the IPA researcher's approach to the data collection and analysis is committed to giving voice to the participant's lived experience of a phenomenon from the participant's perspective (Larkin et al., 2006).

Therefore, there is an epistemological obligation for the researcher to both facilitate and interpret the narratives; and disseminate the data in a way that captures the individual meaning of the phenomenon to the participants while being able to find the "essence" of the shared experience of that which is "worldly and relational" (J. A. Smith et al., 2009). The ability of the researcher to draw detailed information from the participant is dependent on the ability of the researcher to build a relationship with the participant. This relationship is based on rapport which affects the quality and depth of information the researcher is able to extract from the participant, and also, the accuracy with which the researcher can draw meaning from the data later during the analysis phase.

3.3.2 Application of the IPA approach

The purpose of the research question, to understand health professionals' and parents' *experiences-with* and *perceptions-of* childhood obesity within the context of the paediatric weight management setting, fit well within IPA's purpose of exploring and interpreting experiences which were "uniquely embodied, situated and perspectival" (J. A. Smith et al., 2009)p.29).

This concept of subjectivity was relevant to my study because it recognises that the experience of childhood obesity management is likely to be different for health professionals and parents because of their roles; but also different between participants within each group because experiences and perceptions were shaped by each individual's history of management interactions and their preconceived ideas about childhood obesity.

The concept of the 'expert participant' and the contextual importance of experience and interpretation were particularly relevant to the way in which interviews were conducted in my study. The interpretative focus of Hermeneutics and the Hermeneutic circle highlighted the importance of the interaction between participants and the researcher; and the analysis of the data.

Furthermore, the importance of the idiographic approach associated with IPA allowed for the in-depth exploration at the singular level. In effect, IPA was utilised to allow for a small, purposively-selected and carefully-situated sample of participants that could provide rich insights into two aspects of childhood obesity management (i.e. delivery of service and reception of service) (J. A. Smith et al., 2009).

3.4 Study design

The IPA approach was applied through the use of semi-structured interview questions to elicit qualitative data from health professionals and parents in order to answer the research question. The analysis strived to describe and find patterns amongst the perceptions and experiences of both health professionals and parents who had managed a child with obesity (Schofield, 1990).

While the purpose of this research was to understand the experiences and perceptions of childhood obesity management in the Australian context, the research is presented as two studies. Study 1 explored the perceptions of health professionals. Study 2 explored the perceptions of parents.

The reason for this layout was so that the samples could be analysed separately to more accurately describe the experience of health professionals managing childhood obesity and the experience of parents managing their child's obesity. These experiences differed due to the relation of each to the child.

Because IPA allows for the interactive interpretation both at the singular and collective level, it is appropriate in both instances, for a study involving a larger sample of health professionals and the smaller sample of individual case studies of parents.

I will first discuss the study design, protocols and procedures, research tools and analysis of Study 1, followed by Study 2.

3.5 Methods: Study 1 — Health professionals

3.5.1 Setting

The study was conducted in the states of Victoria, New South Wales and Queensland in Australia in the period from June 2016 to June 2018. The health professionals were recruited from a range of clinical settings that included private practice, hospital, community services and tertiary weight management clinics and disciplines (i.e. paediatrics, dietetics, psychology).

All interviews with health professionals were conducted at their premises of employment.

The inclusion criteria were health professionals who were actively practicing in Australia in their health discipline and who had managed at least one case of childhood obesity in the last five years.

3.5.2 Participant selection: Sampling

The recruitment process began with an online search of health clinics and services in Melbourne. The researcher made contact with appropriate sites first by email explaining the nature of her research and her wish to engage health professionals who fit the criteria. A follow-up phone call was made to the identified medical service centres to gain knowledge of and access to health professionals that fit the inclusion criteria.

Paediatric department heads from two of the hospitals approached invited the researcher to their weekly team meetings to give a short five-minute proposal of her research. Health professionals were approached at the end of the presentation and those who agreed were interviewed.

The researcher also used convenience sampling (snowball sampling) and networking amongst health professionals to gain access to contact information of other eligible sites for recruitment (Carman, Clark, Wolf, & Moon, 2015; J. A. Smith et al., 2009). In some instances, an introduction email was sent out by health professionals who had participated to potential new recruits, introducing the researcher and the intended research.

Additionally, the researcher reached out to her own network within her employment in public health to access potential candidates. These potential recruits were contacted via an email introducing the researcher and her project.

3.5.3 Data Collection

A 9-item demographic survey was also used to collect contextual data to describe the sample. The main source of data were semi-structured face-to-face interviews with the health professionals (Patton, 2002).

3.5.3.1 Preparing for the interviews

3.5.3.1a Developing the demographic survey for Study 1

Additionally, the researcher developed a 9-item demographic survey to describe the sample of people involved in her study. This survey was based on other demographic surveys of health professionals that were used in the studies identified in the literature review and was used to add to the context from which their experiences and perceptions arose. Of relevance was health professionals' profession, their years of practice, their practice setting (community, public, private or specialist clinic) and the approximate number of cases of childhood obesity they had treated.

3.5.3.1b Developing the interview schedule for Study 1

Developing and testing an interview schedule that can achieve the intended outcome without explicitly referring to research questions is crucial to the data collected in IPA research (J. A. Smith et al., 2009). Smith and colleagues describe qualitative interviews as conversations with a purpose. The purpose is to extract rich information from the participant to answer the research question. The interview schedule was developed around the research question to explore the health professionals' perceptions and experiences with childhood obesity management. The interview schedule was not to be followed verbatim but used as a prompt for the researcher to ensure the topic of interest were covered in the participants' narratives. The researcher tested the interview schedule in two mock interviews with one of her supervisors, and a colleague, who was also a health professional prior to using it with the intended participants.

3.5.3.1c Building rapport

While the interview schedule acts as a prompt for the researcher to explore the research question, the way in which the researcher conducts the interview is the most important aspect of data collection. In IPA research, the relationship between the researcher and the participant is crucial to data collection. Building rapport is seen as an integral step to facilitating ease of communication between the interviewer and the interviewee and enhancing the depth and quality of data extracted (J. A. Smith et al., 2009). To facilitate an appropriate and comfortable environment for the participant, the researcher collected

extensive information regarding strategies that would facilitate communication during the interviews and developing interview guidelines.

The role of the researcher during qualitative interviews is to facilitate this conversation by creating an environment conducive to allowing the participant to speak freely, while gently guiding the discussion so that the research question is answered.

To build rapport with the participant, the researcher engaged in conversation with the participant prior to beginning the interview to explain the nature of the research and discuss the participants' interest in the topic. During this introductory conversation, the researcher reconfirmed the participant's willingness to continue with the interview and if they were comfortable with its being recorded.

Once participation was verbally confirmed the participant signed an informed consent form. Recording of the interview began and the participant was given a 9-item demographic survey to fill out, then interviewed using the interview schedule described in the earlier section of this chapter.

3.5.3.2 Interviews

Interviews were conducted face-to-face and lasted from forty-five minutes to two-and-a-half hours depending on the availability of the health professional and depth of views on the topic. Questions were asked so that they were open and expansive to encourage the participant to talk at length. For instance, the first question asked was in relation to how they described themselves in their role as a health professional and how this related to childhood obesity management. Secondly, it focused on how they conceptualised childhood obesity to explore how they understood what childhood obesity was and their perceptions about whether it required treatment and why. Thirdly, the researcher was interested in health professionals' experiences of/with childhood obesity management and how this related to their perceptions to whether or not it was managed well in the current health system.

To remain constant with the idiographic aspect of IPA, the researcher asked the participants to think about the origins of their perceptions and to describe the context in which their experiences of the phenomenon occurred. For instance, some health professionals discussed how there is a societal view of obesity related to laziness and

gluttony, but the health professionals' experiences with families in childhood obesity management made them realise demographic factors mostly contributed to their patients' ability to engage with health behaviours.

All participants' identities remained anonymous in the data collection records. Health professional interviews were identified by a code which was generated by the researcher and based on their consecutive number in which they were interviewed; their profession and their setting. For example, referencing Table 1, the first health professional listed on the table would be identified as HP1_diet_hosp. All interviews were recorded on both iPhone 6s and iphone5 devices.

3.5.3.1 Post-interview protocol

3.5.3.1a Remuneration

Upon completion of the interview, the health professionals were provided with an envelope with 3 components enclosed:

i. An information sheet about the research with supervisor and researcher contact details (this was also provided in an email prior to the interview, however, a hardcopy was included as part of the remuneration procedure);
ii. A letter thanking the participant for participating in the interview;
iii. A $10 Coles/Myer gift voucher.

3.5.3.1b Data entry and transcription

Following the interviews, the information from the demographic survey was entered into an excel table (see Table 1).

Notes from the interviews were uploaded onto the Livescribe software on the iPhone 6 phone to match the interview recordings. A summary of the interview was written up in a journal by the researcher shortly after the interviews were completed to highlight the key topics raised during the interview that were apparent at the time, to facilitate later analysis.

The researcher then either, transcribed the interview herself or outsourced the transcription of the audio file to a transcription service (rev.com). The service usually

returned the transcribed interview within 24 hours. The file was then uploaded into Nvivo software to be analysed.

3.5.4 Data analysis

The IPA process of analysis represents the interpretative aspect of IPA. The researcher's analysis of the data is described as a *double hermeneutic* because the researcher is making sense of the participant who is making sense of the phenomenon. The analytic process of IPA is a dynamic one in which the researcher must move between the particular and whole of the Hermeneutic circle; meaning the researcher is interpreting the significance of each concept within the text in the context of the whole interview and within the context of the participant (J. A. Smith & Osborn, 2003).

This data analysis was integrated in the process of data collection and involved the iterative and inductive strategies common to the analysis of IPA research as described by Smith, Flowers and Larkin (2009).

3.5.4.1 Becoming familiar with the data

The analysis aspect of IPA is described as an iterative process that requires the researcher to continue to engage with the data over time to familiarise oneself with it. The process of familiarising oneself with the data occurred through several repetitive methods of the researcher reviewing interviews described below. IPA recognises the interview as the first step of the analytic process because the researcher is already exposed to the data and attempting to make sense of it. Therefore, the fact that the PhD candidate conducted the interviews achieved this initial step of the analytic process. Furthermore, the summaries (note-taking) the researcher wrote directly after each interview was one way in which the researcher began to process the data while it was still fresh (Pietkiewicz & Smith, 2012). Secondly, the researcher repeatedly listened to the interviews over the length of four months, while interviews were being conducted and for a short time after, often when she was commuting or exercising to completely immerse herself in the data and familiarise herself with the interviews of each participant. Audio-listening adds a dimension of meaning that written transcripts fail to capture by capturing the nuances that appear in the spoken dialogue (the rise and fall of voice; and pauses) (Pietkiewicz & Smith, 2012; J. A. Smith et al., 2009).

Finally, the active process of repeatedly reading the transcripts (i.e. line-by-line analysis) during the coding process ensured she interacted with the data on a tangible level.

3.5.4.2 Coding

The researcher conducted her line-by-line analysis of the transcripts using Nvivo software. This first part of coding, known as inductive analysis, focused on the details and specifics of the data and created a foundation from which important patterns, themes and interrelationships could begin to evolve (Patton, 2002). Sentences or multiple lines of the transcripts were coded (assigned nodes) when they constructed a specific concept relating to either a perception or an experience (See Figures 3 and 4 below).

Each node was assigned a description so that the researcher could follow the logic of the coding choices so that nodes could be accurately applied to similar concepts. To identify the distinct ways in which the phenomenon of childhood obesity management was conceived the nodes were compared and categories were formed that represented participants' perceptions or shared experiences. The interrelatedness between nodes became apparent and nodes were combined to develop larger categories. These categories were then compared between each other and then grouped into different descriptive categories. Finally, the relationships between the descriptive categories were examined.

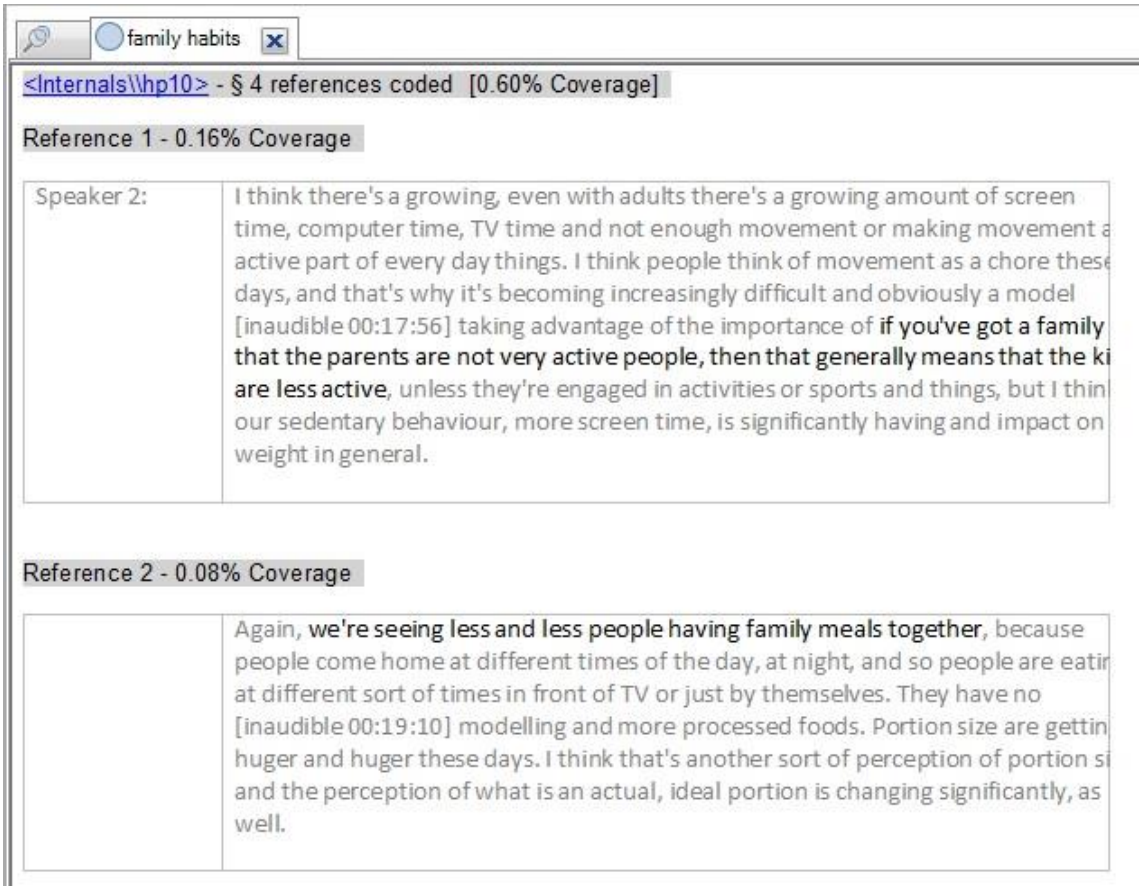

Figure 3: Example of initial coding of transcripts

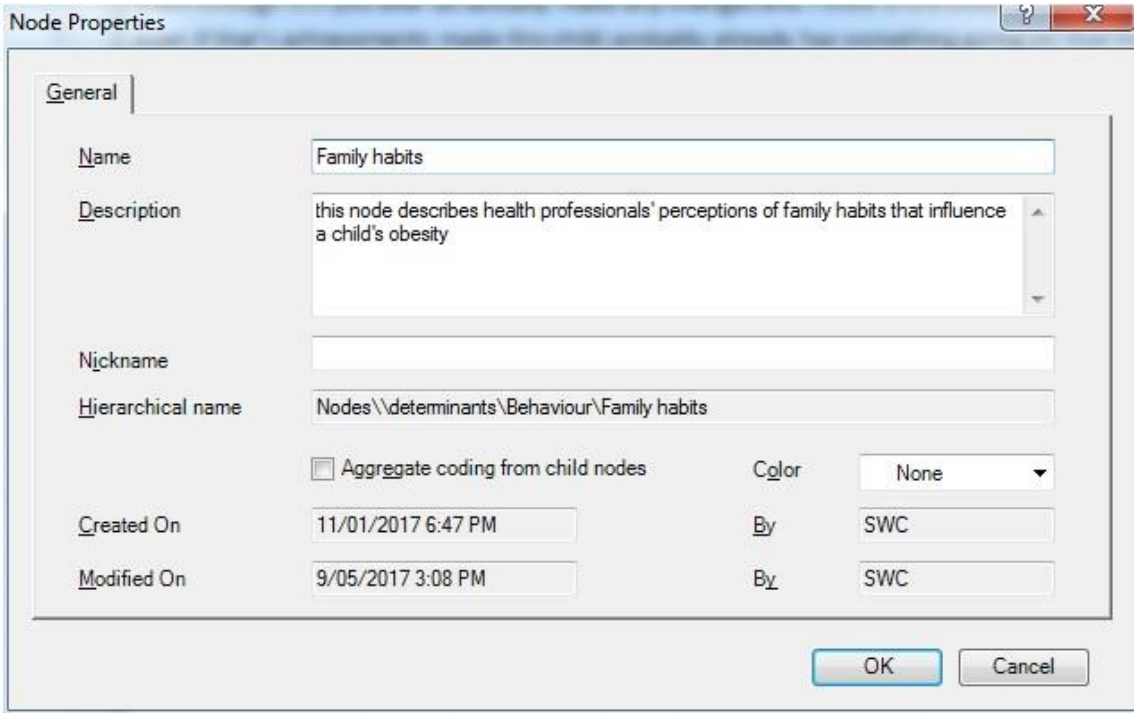

Figure 4: Example of node creation during initial coding in Study 1

The aim of this final step was to ensure that the derived categories formed logical concepts that were representative of the data. The below example shows how the collective category of 'behaviour' emerged from the detailed nodes of family habits and formed part of the descriptive category, "Causes behaviour based, influenced by internal and external factors".

Table 7: Analysis process of how descriptive categories were formed by the data

Descriptive category: "Causes of childhood obesity can be behaviour based, influenced by internal and external factors"				
Category: Internal factors • Family habits • Parents' habits			External factors	
Concepts: Parental mental health affects motivation	Changes to social norms	Family member schedules	Reliance on non-active transport (Andersen, Christensen, Obel, & Søndergaard)	Safety concerns
Node: Actions • Sitting with screens • Consuming more processed foods	• Mindless eating in front of the TV • consuming larger portions	• Family members eating separately	• Sitting • Less outdoor play	

These descriptive categories captured how health professionals perceived childhood obesity, and how they experienced and perceived management and contributed to larger themes of how they conceptualised their roles in its management.

3.6 Methods: Study 2 — Parents

3.6.1 Setting

Study 2 was conducted in the state of Victoria in Australia in the period from April 2017 to June 2017. Due to ethics limitations, parents were recruited from one weight management clinic in Victoria.

Two interviews with parents were conducted face-to-face and two were conducted over the phone.

The researcher interviewed parents of children from a range of ages who were involved in their child's weight management. This was to explore experiences of managing obesity at different life stages; for instance, the youngest child was 10 and the oldest was 23[11].

The inclusion criteria were English-speaking parents who had children with obesity who were being managed for their weight. All participants had to be eighteen years or older to participate.

Exclusion criteria were parents of children whose obesity was due to biological or genetic causes; and parents who had confounding medical, social, or mental health issues.

3.6.2 Participant selection: Sampling

The recruitment process began with the researcher approaching the same services from which health professionals in Study 1 had been recruited. Recruitment of parents was hindered by a range of bureaucratic processes that highlighted an issue around collaborative research between educational and medical institutions. Many services struggled providing participants due to not having ethics committees and not having policies in place to recruit patients for research.

The department heads of four health services were interested in providing parents for these interviews; however, each required separate ethics proposals to be made and ultimately, the timeframe for the research did not allow for the amount of time required to gain ethical clearance from all institutions. The Ethics processes of hospitals were lengthy and several issues were encountered including establishing research agreements between the university and the medical institutions around intellectual property.

Ethical clearance was gained from one hospital-affiliated weight management clinic; nearly nine months from the date of submission of the ethics proposal. Even after ethical clearance was gained, recruitment was difficult as the researcher worked

[11] While a 23 year-old may no longer be considered a child, an exception was made to include the mother in this study because of her desire to be interviewed and due to being able to access this unique insight of a mother who had observed her daughter live with obesity that had persisted from the age of four but was only now attending a service for weight management.

externally and not all the health professionals involved with the service were interested in recruiting parents for the project.

Pamphlets (Appendix: 1) promoting the study were made available in the reception area of the weight management clinic, but no parents were recruited in this way.

In addition, the researcher had built rapport with one of the endocrinologists in the clinic who was enthusiastic about the project and she took an active role in helping the researcher identify and approach eligible participants.

A recruitment process was put in place between the endocrinologist and the researcher. The weight management clinic only ran one day a week. To identify eligible participants, the researcher and the endocrinologist would have a phone conference prior to the clinic opening hours, in which the endocrinologist would review her patients for the day and would identify whether patients fit the criteria and whether their parents would be approachable and willing to participate.

The endocrinologist would proceed with her consultations for the day and invite parents whom she saw fit to participate. During this process she asked the parents if they were happy to be contacted by the researcher and if they were comfortable with their contact information being released for this purpose.

Only four parents — all mothers — agreed to be contacted. Two of the mothers preferred to be interviewed over the phone, while one waited until their children's next appointments to be interviewed face-to-face.

One participant, who's child had not attended the clinic, was recommended by one of the participating health professionals and agreed to an interview. She requested the researcher meet her at her home at a time when her child would not be present so that she could speak freely.

3.6.3 Data Collection

A 14-item demographic survey was also used to collect contextual data to describe the sample. The main source of data were semi-structured interviews with parents (Patton, 2002).

3.6.3.1 Preparing for the interviews

3.6.3.1a Developing the demographic survey for Study 2

A 14-item demographic survey was completed by each parent participant prior to the start of the interview. The survey asked participants about their relational status to the child (i.e. father/mother), their age and their child's age, postcode of residence, employment status, household income, language spoken in the household, highest level of education completed and marital status.

3.6.3.1b Developing the interview schedule for Study 2

A semi-structured interview approach was employed to collect information around parental experiences of managing their child's weight. Interviews began with a question from the interviewer about how the child received the referral to the weight management service as a way to approach the topic of weight without asking directly about the child's weight. This is consistent with Smith and colleagues' suggestion of approaching research questions 'sideways' as not to lead the participant. Parent narratives were navigated by the interviewer to answer the question: "What are parents' perceptions and experiences with childhood obesity management?"

Of interest to the researcher were parents' challenges with managing the child's weight and parents' experiences with health professionals in the context of childhood obesity.

The word "obesity" was avoided by the researcher due to the sensitive nature of the word. Instead, neutral terms referencing weight were used to replace the term 'obese' or 'obesity'; for example, 'weight' or 'size'.

3.6.3.2 Interviews

Interviews with parents lasted twenty minutes to one hour and ten minutes and depended upon the availability of the parent and their willingness to engage in dialogue around the research question all parent identities remained anonymous in the data collection records. Parent interviews were stored in the recording devices and identifiable as a code which was generated by the researcher based on the consecutive number in which they were interviewed (in years) of their child; for example, the first

parent to be interviewed was identified as P1. All parent and child names were changed in the case write-ups as to not be re-identifiable.

3.6.3.3 Post-interview protocol

A summary of the interview was written up by the interviewer (PhD candidate) shortly after the interviews were completed and the demographic information entered.

3.6.3.3.1 Remuneration

The remuneration process was the same as that of Study 1, except participants who had been interviewed over the phone were mailed their remuneration.

3.6.3.3.2 Data entry and transcription

The data entry process was similar to that of Study 1 in that demographic data was entered into an excel spread sheet and a summary of the interview was drawn up by the researcher immediately following interviews. The researcher also transcribed all of the parent interviews as there were few, compared to the health professionals in Study 1, and less time consuming.

3.6.4 Data analysis

The context of this sample differed from the context of participants in Study 1 due to the fact that all the participants were parents of children with obesity, attending weight management rather than health professionals treating childhood obesity. This was important to the interpretative process and impacted on the way in which the data was analysed and presented.

The coding, category building and thematic analysis employed during the data analysis of the interviews in Study 1 were replicated for the interviews in Study 2. However, rather than combining the data analysis and analysing the interviews as one large data set as had been done in Study 1, interviews were analysed separately and presented as individual case studies to add the richness of personal experience and to remain consistent with IPA's idiographic commitment (J. A. Smith et al., 2009).

3.7 Ethical considerations

The ethics processes were the same for Study 1 and Study 2, except Study 2 required additional ethical clearance from a hospital ethics committee while ethics approval from Victoria University was sufficient to recruit participants in Study 1. The processes of consent, risk management and safety and data security and handling were consistent across both studies.

3.7.1 Ethical Clearance

Ethical clearance to conduct the following research was obtained from Victoria University Human Research and Ethics committee and one hospital ethics committee in Victoria, Australia.

3.7.2 Consent

Informed consent is essential for the practice of ethical research. The researcher took several precautions to ensure participants knew exactly what was expected during interviews and how their data would be used.

During the researcher's initial contact with the parent (phone call), the intentions of the project were explained. Potential participants were made aware interviews were to be recorded and stored in a safe and secure location. The researcher explained all interviews would be transcribed verbatim by the interviewer and were only accessible by those of the research team. In addition to an interview, participants were made aware they would be asked to fill out a demographic survey. Participants were ensured their identities would remain anonymous and that none of the information provided would be identifiable.

Participants were given the option to consider and discuss their involvement in the project with others before being requested to provide consent. Two participants chose to take part in phone interviews while two chose to be interviewed face-to-face.

Consent was obtained verbally by those taking part in phone interviews — the researcher read verbatim the consent documents provided by the governing institutions (Victoria University and Western Health) and obtained an affirmative response from the parent prior to commencement of the interview. Face-to-face interviews took place in a private room booked by the researcher in the hospital at a time that was convenient for

the participant. A consent form was supplied upon arrival; then signed prior to distribution of the demographic survey and interview.

Other ethical information provided by the researcher prior to interview commencement included informing participants that they could stop the interview at any time, choose not to answer a question, or withdraw information any time prior to the submission or publication of information (whichever occurred first). Participants were then asked if they had any questions regarding the research or interview process.

3.7.3 Risk management and safety

There were no physical risks beyond the normal experience of everyday life, in either the short or long term, from participation in this research. The researcher took into consideration that there may have been a low probability risk of psychological distress amongst participants as childhood obesity is a sensitive issue for some. Literature suggests conducting research on sensitive topics is associated with a number of ethical issues. It was acknowledged that participants (mainly caregivers) may experience guilt, discomfort or a realisation of unexpected emotions when speaking about a topic that affects their child; and a plan of action was drawn to address the potential occurrence of psychological distress.

3.7.3.1 Actions to address emotional/psychological distress during the interview

Participants were made aware that if they experienced psychological distress during the interview, they were allowed to stop the interview at any time. If emotional distress escalated beyond that which was an expected response to the interview, engagement of external services (i.e. study-affiliated psychologist or local emergency services) was to be employed. Arrangements were made prior to study commencement with a university-affiliated psychologist to ensure participant safety and security should they become distressed. Fortunately, none of the participants expressed any psychological or emotional distress during interviews.

3.7.4 Data security and handling

The researcher was responsible for the security of and access to confidential data and records, including consent forms, collected in the course of the research. The data obtained during the project was stored on a password-protected drive on the Victoria

University's computer network (R-drive[12]). The data from the hard-copies of the questionnaires were recorded into an excel spreadsheet, then the hard copy was immediately destroyed (shredded).

3.7.4.1 Confidentiality and security

To ensure anonymity and confidentiality, names of participants were not used on transcriptions, instead the interviews were coded as described in the Data collection section above. Only the consent forms, which were scanned and electronically stored on the University R-drive, had participant names and dates. Data was only identifiable if matched with the consent forms, to which only the researcher had access.

3.7.4.2 Ancillary data

All audio-recorded interviews were stored on Victoria University's R-drive in a secure folder accessible only by the researchers and on a password-protected university-issued laptop that is not networked. The minimum period for which the data will be retained is 7 years post publication. When further retention of data and materials is no longer required, responsible disposal methods will be adopted. Disposal software will be adopted if digital software, computer hardware, disks or storage media are reused or retired. Research data and records in electronic form will be destroyed by reformatting or re-writing.

[12] The R-drive provides a safe place for the research team to keep data. VU guarantees that the technical solution for transferring data within the project is safe, and that security measures have been taken to safeguard against the data being accessed by unauthorized persons.

4 Findings Study 1 —Health professionals

4.1 Introduction

The overall aim of this study was to explore and describe health professionals' perceptions of childhood obesity management from their experiences within the context of paediatric weight-management. This chapter shares the emergent concepts and themes from interviews with the health professionals. The parents' perspectives will be presented separately in Chapter Five.

The analysis yielded an understanding both of how the health professionals perceived childhood obesity and how they experienced its management. There were four overarching themes that captured health professionals' perceptions of childhood obesity management:

i. Conceptualising childhood obesity
ii. Experiences and perceived roles in clinical management
iii. Types of barriers experienced by the health professionals
iv. Intended outcomes of management.

4.2 Description of sample

As Table 8 below shows, thirty Health professionals participated in the present research: sixteen dietitians, five paediatricians, two nurses, two exercise physiologists, two physiotherapists, two clinical psychologists, two clinicians/researchers, and one multicultural health worker. The majority of participants (n=27) had over six years of experience working as a health professional and had managed over twenty cases of childhood obesity (n=25).

4.3 Conceptualising childhood obesity

Health professionals were asked to describe childhood obesity to explore how they made sense of this phenomenon. Each participant referred to a physical description of body size and consequences of this body size. The health professionals' understanding of childhood obesity encompassed a physical aspect which could be visually observed, a pathological aspect which they believed impacted on a child's ability to function

normally, an attribution aspect which represented their belief about causal factors and a treatment aspect which represented their ideas about whether treatment was necessary.

Table 8: Description of sample of health professional participants

HP	Health profession-discipline	Years of practice	Years of practice in Australia	Practice Setting	State	Cases managed	Currently managing	Parent	Gender
1	Dietitian	6-10	6-10	Hospital	VIC	20+	Yes	No	F
2	Paediatrician	25+	26-30	Hospital/ Private practise	VIC	20+	Yes	Yes	M
3	Paediatrician	21-25	21-25	Hospital/ Private practice	VIC	20+	Yes	No	F
4	Dietitian	6-10	6-10	Hospital/ Private practice	VIC	20+	Yes	Yes	F
5	Physio-therapist	11-15	11-15	Hospital	VIC	1-5	No	Yes	M
6	Clinician/ researcher	16-20	16-20	Research Institute	VIC	20+	No	Yes	M
7	Dietician/ researcher	25+	26-30	Hospital/ University	VIC	20+	No	Yes	F
8	Dietitian	6-10	6-10	Community Clinic	VIC	20+	Yes	Yes	F
9	Dietitian	25+	26-30	Community Clinic	VIC	20+	Yes	Yes	F
10	Dietitian	6-10	6-10	Community clinic/ Private practice	VIC	20+	No	Yes	F
11	Paediatrician	16-20	16-20	Hospital/ Community Clinic	VIC	20+	Yes	Yes	F
12	Dietitian	6-10	3-5	Community Clinic	VIC	20+	Yes	No	F
13	Dietitian	2-5	2-5	Hospital	VIC	20+	Yes	No	F
14	Dietitian	11-15	11-15	Hospital/ Private practice	VIC	20+	No	Yes	F
15	Paediatrician	25+	25+	Hospital	NSW	20+	Yes	No	F
16	Paediatrician	6-10	6-10	Hospital/ Private practice	NSW	20+	Yes	Yes	F
17	Dietitian	6-10	6-10	Private practice	VIC	20+	Yes	No	M
18	Physio-therapist	25+	21-25	Community clinic	QLD	20+	Yes	Yes	F
19	Psychologist	11-15	11-15	Community clinic	QLD	20+	No	Yes	F
20	Dietitian	16-20	16-20	Private practice	QLD	20+	Yes	Yes	F
21	Multicultural health worker	2-5	2-5	Community/ school	QLD	20+	Yes	Yes	F
22	Clinical Psychologist	16-20	16-20	Hospital/ Private Practice	NSW	20+	Yes	Yes	F
23	Clinician/ Researcher	25+	25+	University	VIC	1-5	No	Yes	M
24	Dietitian	21-25	16-20	Community clinic	VIC	11-20	Yes	yes	F
25	Exercise Physiologist	11-15	11-15	Hospital	VIC	20+	No	Yes	F
26	Exercise Physiologist	16-20	16-20	School	VIC	1-5	No	Yes	F
27	Nurse	6-10	6-10	School/ Hospital	VIC	1-5	No	No	F
28	Dietitian	6-10	6-10	Private practice	QLD	20+	No	Yes	F
29	Dietitian	20+	20+	Community clinic	VIC	20+	No	Yes	F
30	Nurse	20+	20+	Community clinic	VIC	20+	No	Yes	F

4.3.1 What is childhood obesity?

The health professionals described childhood obesity as a large body-size characterised by excessive fat. Most of the participants believed this physical manifestation was an indication of poor health. Their definitions included physical descriptors of how childhood obesity presents as a weight or size indicative of a "fat" body composition that impacted on children (i.e. poor health/social outcomes):

> *In a true health sense, it is a body size that puts them at health risk now and in the future. That might be physical, it might be metabolic, it might be psychological, it might be social, but puts them at some risk because of their body size* (HP6, Clinician).

Childhood obesity was also identified by some, not only as a body 'size' or weight, but as a descriptor of a body composition of excessive fat that affected child health.

> *Obesity is saying that a person weighs more — has more fat on their body than ideally they should and that that has negative impacts on their physical and also emotional health. Their body composition has excessive amounts of fat; and their weight is greater than it should be* (HP2, Paediatrician).

4.3.1.1 Illness status: is it a disease?

When describing childhood obesity, the topic of whether or not it should be classified as a disease arose during interviews. The health professionals appeared emotive when discussing whether it should be considered a disease. The main idea around classifying childhood obesity as a disease was that it would give added meaning that may impact on children. Those who were supportive of the "disease" title believed it would benefit children as it would recognise it as a condition with severe health consequences and also shift blame away from individuals. Those who were against the "disease" title believed it would further stigmatise children and parents by furthering the blame narrative; suggesting parents had "given" their child a disease. These perceptions were related to how health professionals perceived "disease" and how they perceived "disease" to be perceived in society. The sample was split along the line of being either for or against a "disease" classification of childhood obesity. I have presented the data with exemplars from each perspective.

Interviews revealed that the word 'disease' itself has different connotations in the medical space to the social space and that the latter held certain negative social consequences. For instance, HP9 pointed out, using the word 'disease' in a consultation could be interpreted negatively by parents who were already uncomfortable attending:

I don't think it's helpful to think of it that way. It's a very complicated thing. I know there's lots of complex physiology involved. Oh, I just think that 'obesity as a disease' is so stigmatising and so upsetting, you know? Imagine if someone, a health professional, said that to a parent. How does that help, you know? I think any sort of approach has to bring parents along and not add to the guilt they already feel for being there (HP9, Community Dietitian).

On the other hand, those who advocated for recognising obesity as a disease, argued it would reduce stigma towards children and families with obesity by bringing attention to the impact of childhood obesity.

It creates significant health issues for young people; psychological, medical, surgical. Of course, it's a disease and if we think it's not, then we negate the experience of people who experience obesity and we perpetuate the stigma. I also think it means we unconsciously support those who are biased against it; and who don't think it needs to be treated, and we actually are part of not providing treatment services to people who need these treatment services (HP15, Specialist Paediatrician).

HP15 argued giving obesity a disease label could finally help people realise obesity significantly impaired the health of those living with it and, therefore, required the same support as other diseases.

This way of thinking was supported by HP6, and others who associated the term 'disease' with dysfunction. Their experiences lent to the view that obesity impacts in the form of dysfunction typical of other diseases. They believed the term 'disease' would validate the impact of obesity on affected individuals. Furthermore, HP6 and HP15 shared a perception that by not recognising obesity as a disease, stigma was worsened and the necessity for treatment was downplayed.

A disease is something that causes dysfunction, that impairs your quality of life, that increases the risks of morbidity, mortality, dysfunction, whether it be psycho-social, physical, or metabolic. All of that occurs in children with obesity... Much of the argument about disease has revolved around stigmatisation; preconceived ideas about how that person became as they are. It's easier to blame someone. We've come to grips with mental illness. We've come to grips with hepatitis C, drug issues, treating alcohol, treating substance abuse. Why are we leaving obesity as that last area of real stigmatisation? To even argue about whether it should be a disease is almost... it's perverse. It becomes perverse (HP6, Clinician/Researcher).

HP6 focused his argument on why childhood obesity should be labelled a disease on its ability to cause dysfunction within the body. He described a disease as "something that causes dysfunction, impairs quality of life, increases the risks of morbidity, mortality…". He believed children with obesity experienced all these consequences of disease; therefore, the barrier keeping obesity from receiving disease status was society's obsession with "[blaming]" someone.

HP6 likened childhood obesity to other chronic diseases that society had "come to grips with." He was outraged by the "perverse" argument about whether it should be considered a disease because not recognising it as such ignored the fact that it requires treatment.

While HP15 and HP6's extracts suggested they viewed the experience of childhood obesity as one of dysfunction and burden; HP2 holds a different perspective in which he points out not every child with obesity experiences negative symptoms or consequences:

My understanding is that many obese people, themselves, don't consider it a disease. There's some obese people who consider that it's like saying brown hair is a disease and 'I'm happy with that and it's not abnormal. it's just the way I am and it's not a disease'. They would argue, 'it's just a range of normal'. It's like telling someone who's very tall that they have a disease. Like, it might be because it's a disease. There might be a physical abnormality causing it; but they might also just be very tall (HP2, Hospital Paediatrician).

HP2's perspective of obesity suggested some people living with obesity considered it to be a physical characteristic like being "very tall" or having "brown hair". Therefore, for these people recognising obesity as a disease may be offensive as they may consider it as "just another range of normal". However, when he spoke about obesity from a medical perspective he believed it "[met] the criteria of a disease:

My personal belief is that it meets the criteria of a disease but I don't know if that's helpful. If it would be helpful I think it would be okay and reasonable. But I'm not sure that it's helpful to call it a disease. I think there are so many sociological issues that I think I'd be very cautious about calling obesity a disease (HP2, Hospital Paediatrician).

4.3.2 Impact on health

— *My concern is that it's [childhood obesity] not healthy*

The "concern" was reflected throughout several interviews. The message reiterated in each description was: Childhood obesity presented a "problem" to child health because their "body size" was associated with "consequences", such as increased risk, mortality and morbidity:

In a true health sense, it is a body size that puts them at health risk now and in the future. That might be physical, it might be metabolic, it might be psychological, it might be social, but puts them at some risk because of their body size. It's proportional to their body composition of course, a degree of heftness. It is the consequences of it that are important so it's respective of what it's going to do, what it's going to create for the kids that's the problem (HP23, Clinician/Researcher).

There was some variation in responses around when "consequences" would occur. HP23 believed the "consequences" appeared immediately," whereas the focus of HP4's concern (quote below) was based on the long-term "consequences":

There's the physical description of being a child that is carrying central adiposity that doesn't promote long term health, so it's associated with longer term consequences. So, there's the physical description; and then I would put in that that's linked to some social — it's linked to the social side of things. So, it's linked

to possibly poor self-esteem, poor body image; and then, obviously, the emotional stuff that carries with that. So, it's all the health problems and social stuff that really concern me (HP4, Dietitian).

It was widely accepted that childhood obesity impacted throughout the lifespan with social consequences being more apparent early on and physical health consequences presenting later in life as the obesity persists or worsens. The social impacts were considered as damaging as the physical or health impacts:

Short term and long term, two different things. Short term, in terms of them being able to participate, whether it's school or physical activity. In terms of mental health, I don't know what the stats are but I've read a lot about in terms of the likelihood of them being bullied and that kind of thing. It's an issue. Long term, you're looking at really the risk of Diabetes and all those chronic diseases (HP8, Community Dietitian).

While the health professionals spoke of a myriad of "health consequences" children faced later in life, several of the health professionals reported observing the apparent short-term impacts of social exclusion and bullying:

Kids are mean. Kids just pick on each other and it's always going to be that way, I think. Even with all the non-bullying stuff kids will do it in the playground. I think these kids can end up with depression and lots of psychological issues because of their weight and then they get stuck in that cycle that makes them less motivated to do anything about it and then just a downward spiral. I think that that's a very major concern (HP1, Hospital Dietitian).

These experiences of being ostracised and bullied by peers were perceived by some to be so traumatising for children with obesity that it could set a precedence for long-term psycho-social issues:

… that exclusion of 'I'm always out first because I'm rubbish'. 'They pick teams and I'm always the last to be chosen'. It's that real self-esteem stuff that sticks with them (HP18, Community Physiotherapist).

Peer bullying was perceived as a common psychosocial consequence of childhood obesity. Every health professional could identify at least one case in which a child

undergoing treatment for obesity suffered from bullying: *"Children with overweight issues often are bullied; almost in every case"* (HP19, Community Clinical Psychologist).

And sometimes resulted in "social and emotional withdrawal" as observed by HP4, who recalls seeing negative changes in her paediatric patients with obesity each time they come in for a consultation:

You see some kids with the social and emotional withdrawal and you can see them each time they come they're less engaged. You talk about school, they're struggling with school. They don't have a great friend network (HP4, Hospital Dietitian).

Bullying of overweight children was a consequence that impacted on weight management in specific ways that will be discussed later in this chapter

4.3.3 Causal factors

— *Obesity is just a manifestation of so many other things going on in their life* (HP16, Paediatrician).

Another aspect of how the health professionals conceptualised childhood obesity involved beliefs about its causes. The participants acknowledged obesity results from an energy imbalance in which energy intake exceeds energy expenditure. However, discussions around why this occurs focused on people's dietary and activity behaviours.

Eating and physical activity were described as incidental to greater social, cultural and environmental pressures. The below excerpts from HP1 shows how she recognised the causes of obesity in an ecological context, in which obesity was influenced by physical surroundings and personal circumstances.

You know, obesity is mainly because of excess calories… I think its western culture now. People perceive that they're time poor parents have a lack of cooking skills and are relying on takeaway and easy fast meals. Family culture I guess like if the parent is overweight than you know that often translates to the children so what the family's priorities are if they're an active family or not or what their unit is like. Media in terms of advertising. Access. I think access …

like it's so easy to get takeaway or drive throughs on the way home. It's harder to say, "no," it's easier to say, "yes". And being time poor … people perceive that. I think if they had cooking skills then they would know making a stir fry with many vegetables only takes 15 minutes, but people think that that's too hard … so knowledge but then motivation. You know people can have a lot of knowledge but not act on it (HP1, Hospital Dietitian).

This concept of external influence was recognised by the participants as a temporal issue that had developed over time. HP21 articulated the temporal component by comparing the current and the past with her reference to sedentariness being a current phenomenon:

It's a really complex issue; but at its core I think it's a combination of physical activity and food. I think we are all a lot more sedentary than we used to be (HP21, Health Promotion Officer).

The depth of the interviews allowed for participants to reflect in the way they had perceived change over time. Much of health professionals' view of change "over time" centred on a cultural movement towards efficiency and abundance. To this end, they reasoned that lifestyles had adapted to accommodate for these changes. For instance, HP9 explained how she believed employment practices had transformed and influenced the way in which families operated, which impacted on family meal times.

Well, I guess a lot of things have changed in the way we live. People work longer hours, they're less active, they drive more. I think it's hard for parents to be switched on all the time and have the energy to do that. I think that does mean food choices are things that are quick and easy and might not include vegetables or salad or fruit. That sort of thing. Which makes a difference for everyone in the family, the health of everybody, not just the child. Kids don't — not many kids walk to school or ride bikes because parents are worried about safety. Then there is food supply, obviously, changed dramatically. When I was little, there was no McDonald's. I remember when McDonald's opened. In Melbourne, there's take away food, easy food options. I think, yeah, the internet. I could see a graph that showed obesity, the rates of obesity and things that happened like ... we sit more,

we eat more. Human's survived with all their eating so why wouldn't we like to eat? (HP9, Community Dietitian).

There are several important issues to note from the above quote. First, it reintroduces the common belief shared by the health professionals that eating and activity habits had become reactionary behaviours to the external pressures of society and environment. Eating was described as a normal human behaviour that had always existed; and, in fact, was key to human survival: *"Humans survived with all their eating so why wouldn't we like to eat?"*

Secondly, it demonstrates a shared empathy for the struggles of parenthood. HP9 was not blaming anyone for the causes of obesity; but rather making sense of human behaviour (in this case parents' providing food and safety to their children) due to external pressures from society and the environment.

Lastly, she applied the temporal aspect of change to her understanding of how environmental change resulted in lifestyle change. It is important to engage with the passage of time in understanding her reasoning behind the changes to these behaviours: previously it was "safe" for kids to "walk" or "ride bikes" to school; "when I was little, there was no McDonald's." These temporal representations show some of the societal and environmental changes HP9 attributes "to the way we live."

The way in which the health professionals spoke of these social and cultural changes inferred a tone of inevitability. HP9 emphasised a view of how human eating behaviour is intrinsic. Furthermore, "why wouldn't we like to eat?" is a rhetorical question that is justified by her comment, "humans survived with all their eating". What she means is, "we like to eat because, [we] humans survived [by] eating".

The health professionals' explanations of causal factors connected environment and behaviour. We "like" to eat implies food is not only sustenance that has contributed to our survival, but that it is also *pleasurable*. HP23 shared the view of HP9.

If your question is, 'why are we all getting fatter?' It's because our environment is driving us to become fatter. If your question is, 'how come in that environment in Sydney, we're all living in the same environment, I get fat and you don't?' There is an interaction between what makes us individually and what we

experience in our environment. Some of those interaction are amplified on purpose, for example, we have biological vulnerabilities, we like the taste of sweet things. If you're a food manufacturer and you can make a lot of money out of making sweet stuff and selling and with high profit margins, then you're exploiting a biological vulnerability and you make a load of money. If you want to exploit psychological vulnerabilities, then you go into marketing and you would learn how to sell stuff to people to exploit economical vulnerabilities. We want a cheap bargain when you price discount your products. There's money to be made at exploiting human vulnerabilities and the commercial drivers amplify our natural interaction, say between sweet-tooth and our biology, commercial drivers come along and amplify that (HP23, Clinician/ Researcher).

In his quote, above, HP23 explained his perception of causal factors. HP23 believed the environment was the greatest contributor to the human behaviours driving childhood obesity. In this extract he demonstrates a belief that the profit-driven intentions of "food manufacturers" have most shaped food choices. His choice of words like "exploiting" portrayed manufacturers within the food industry as money-hungry villains that preyed on a "biological and psychological vulnerabilities".

Like HP9, HP23 acknowledged how the environment influenced food and activity behaviours; but he also acknowledged a relationship between the individual and the environment. By acknowledging the individual HP23 moves from population drivers of childhood obesity to individual components that he believed made some people more susceptible than others. One of these individual components was described by HP16, below, as a "genetic propensity":

There's a genetic propensity. We all have the propensity to conserve energy and put on weight, but some more than others and some ethnicities. There is that genetic tendency. Your indigenous Pacific Islander is more likely to have issues with obesity. Other Asian, Indian, African American, those populations, Chinese, Middle Eastern, they all have that genetic tendency to obesity. It's the interaction of that genetic tendency with the environment (HP16, Tertiary Care Paediatrician).

The health professionals believed some of the causes of childhood obesity were unavoidable and unchangeable. Those who were of this belief acknowledged a genetic

component. This concept of genetic propensity shared by HP23 and HP16 was mentioned by all the health professionals during their interviews. It is important to note that not a single health professional believed there was one cause of childhood obesity. Each health professional participant acknowledged an interaction of genetics, behaviour, environment and social circumstances contributed to childhood obesity; and that the combination of these varied case-by-case.

4.3.4 A need for intervention

This section refers to those times the participants talked about what should be done about childhood obesity; and how they viewed their own roles in its clinical management. The health professionals' perceptions around the cause, effect and manifestation of childhood obesity were related to their intentions behind intervention and management. For instance, their concern for the perceived effects of obesity explained *why* they viewed it as a condition that warrants intervention; whereas their perceptions around the causes of obesity explain *how* they believed it should be intervened and managed. Finally, the health professionals' understanding of how childhood obesity manifests itself was connected to *what* they believed interventions should achieve.

For the health professionals, the consequences associated with childhood obesity warranted a clinical response to try to address and prevent poor health outcomes. They recognised weight was an indicator of child development, whereas they viewed obesity as an indicator that the child was not developing normally. In the below example, HP16 referred to child development as a "trajectory of growth" that is impaired by obesity. The health professionals believed interventions to address obesity needed to focus on making changes that would bring children's growth back to a normal trajectory:

They need to make some changes, otherwise their trajectory [for growth] and we know if you don't do any intervention — their weight is just going to continue to increase (HP16, Paediatrician).

The health professionals' beliefs were influenced and strengthened by their experiences with managing children with obesity and observing, first hand, its impact on children.

I see a lot of kids who are overweight who I feel their issues wouldn't be as great if they weren't carrying as much weight. I think weight exacerbates people's issues and I think there's a need to address it (HP5, Physiotherapist).

These experiences shaped perceptions of childhood obesity and motivated the health professionals to address it.

4.4 Diagnosis and referral as perceived roles in clinical management

The participants believed that addressing childhood obesity was part of their role and responsibility as a health professional. They believed this role varied depending on how they were situated within the health system and what resources were available. There was a primary belief that childhood obesity management should begin with a prevention focus; most mentioned as early as antenatal care. While recognising prevention as the ideal scenario, management should focus on preventing the obesity and its effects from worsening:

I think that we should have a role for sure. We should have a very big role because we are health professionals and we need to be advocating for health. I feel that we have to prevent it before you get to that point to actually have any impact, so obviously to prevent the problem from getting worse but then trying to catch kids from when they're early born to try to prevent it from occurring in the first place (HP1, Hospital Dietitian).

The health professionals saw themselves as facilitators of health; and that all health professionals had a responsibility to address childhood obesity:

It should be everyone's responsibility to manage, so a GP should be just as competent in managing childhood obesity as a specialist paediatric dietitian or paediatrician (HP13, Tertiary Care Dietitian).

They understood their role as "facilitators" to include specific responsibilities of which they identified assessment, education and support: *"It's about assessing where the needs are and then helping people to make changes"* (HP18, Physiotherapist).

Only two health professionals, who both worked within a hospital outpatient clinic, directly acknowledged diagnosis of childhood obesity as part of their roles as clinicians.

Diagnosis was described as part of their overall professional responsibility of monitoring child development:

One of the things about paediatrics is you're dealing with young children and some things or problems in adulthood generally start in childhood and the presentation may not be a significant problem at that time and that's often the case in obesity because parents and other people don't think it's a problem because it's not causing the child any functional impact but the risk is about the long-term impact. So, in the context of obesity, a large part of what I'm doing is, I guess, helping people to identify that there actually is a problem when they weren't aware in the first place. Their child, as their child presents now, has a health problem even though they didn't think it was the case in the first instance (HP2, Hospital Paediatrician).

HP2 described diagnosing obesity as part of his overall role as a paediatrician. Despite the fact the obesity may not be immediately impacting on the child he believed his role needed to account for the potential "long-term impact", and to raise awareness, of the "health problem" with parents. This responsibility for monitoring and ensuring healthy growth is a concept shared by HP29 who worked in an outpatient clinic in which she mainly saw children for nutrition-related developmental issues.

My role is probably identification for families. So, seeing if that is a concern. My role is more helping families. If they present to me as a consult then I would see them, but I might see siblings as well. So, it's raising awareness for families about other members that are in there as well. I look at it as a family. I'm identifying, I suppose, if there's a need for them to have treatment. I suppose, I work in treatment because I might see them as a child that's underweight; but, then, if they're gaining weight too quickly I would identify that and make sure they were on the right path with me; that they weren't going the other way (HP29, Hospital Dietitian).

HP29 described her professional role as a "family" dietitian with certain responsibilities. She described viewing the family as a unit and, therefore, perceived her role as one that oversaw the development of all family members. In this context,

HP29 perceived childhood obesity as a developmental issue that fell under her responsibility to both identify and raise awareness with families.

Most of the health professional participants treated children who were reportedly referred by other health professionals for obesity:

We receive referrals from GPs, from maternal and child health nurses from the other allied health professionals, here; but it's been picked up by someone else first (HP1, Hospital Dietitian).

HP1 explained her role in childhood obesity was secondary to "someone else" providing the preliminary diagnosis. She exemplifies "someone else" by listing three types of health professionals, GPs, maternal and child health nurses and "other allied health professionals, here"; indicating referrals are both internal and external to the hospital clinic.

The most commonly mentioned referrals were from GPs, paediatricians and maternal and child health nurses. Community services also allowed for self-referrals, however, tertiary services, like weight management clinics had stringent criteria for accepting referrals; two major clinics only allowed referrals from paediatricians:

Basically, we get referrals from paediatricians; paediatricians rather than GPs. They have to fit the criteria so they're that tip of the iceberg (HP16, Tertiary Care Paediatrician).

While the majority of health professionals did not mention having to diagnose cases of childhood obesity directly, some of the health professionals described their role at times involved raising awareness with families of their child's weight status even after obesity had been diagnosed by another health professional:

They have been referred to us for their weight by the time we get involved. We don't have to do that for the first time. But we will often plot it on the graph and show them, for the first time, where their kids are sitting (HP18, Community Physiotherapist).

In some cases, this would be the first time the families were made aware of the diagnosis. Five health professionals shared stories like HP18 of having to raise the

diagnosis with the families after they had already been referred. The experience of HP18 having to raise awareness of the weight issue was also shared by a clinical psychologist who worked in a childhood obesity tertiary service:

Research says that people can't recognise when their child is in the obese range. Health professionals can't research this. However, the manifestation of this is quite shocking. Our clients will come here, to a tertiary obesity service, via a paediatric referral, and are unsure whether their child is in the obese or healthy weight range (HP22, Tertiary Care Clinical Psychologist).

The experience of health professionals having to raise awareness of childhood obesity after referral appeared to be shared across settings. HP22 acknowledged *"research [saying] that people can't recognise when their child is in the obese range"* but expressed "shock" that patients attending a "tertiary obesity service" could still be so clueless.

4.4.1 Self-referrals

While health professionals had difficulties diagnosing and engaging some families, others self-referred their children. The main incentives given for why parents self-referred their children for weight management were peer bullying and sneaking food or binge eating.

4.4.1.1 Peer bullying

One of the most prevalent topics to emerge from interviews was that of bullying experienced by children with obesity. Every health professional spoke of bullying being a major issue with most of their child and adolescent patients.

Twenty-one of the thirty health professional participants said bullying was one of the main reasons why parents sought to address their child's weight issue, as exemplified by HP7: *"Often the reason, if parents initiate the referral, it will often be around social exclusion or bullying at school"* (HP7, Dietitian).

For HP22, a Clinical Psychologist working within a specialist weight management clinic, bullying was often a point of leverage in her interventions. She described how

she associated parents' concern over peer bullying with parents' "buy in" or how motivated they were to make changes:

The final thing is, "why do you think now is the time to do something about your child's weight". That's the motivational time. Why not wait? They all talk about school bullying (HP22, Clinical Psychologist).

Similar to other respondents, HP22 demonstrated how bullying was one of the short-term consequences of childhood obesity that motivated parents to want to do something about their child's weight immediately. This experience was shared by HP29 in the community setting:

Often there is some sort of bullying that's happening. That's often sometimes a motive for parents actually to want to make change, because their kids are getting bullied at school because of that (HP29, Community Dietitian).

These exemplary extracts present peer bullying as a double-edged sword; on one hand, it was a consequence with immediate and, potentially, long-term mental health implications; on the other, when parents were aware and concerned about it, it could motivate them to seek help. The health professionals spoke about harnessing this concern to motivate behaviour change.

4.4.1.2 Sneaking food and binge-eating

According to the health professionals, another common reason for parents self-referring their children for overweight or obesity was due to finding their child was sneaking or binge eating junk foods. Parents "finding wrappers" under the child's bed was a common concern that health professionals heard during initial consultations with parents:

The child will find a way of getting what they want. It will be either stealing food at school from other kids' lunch boxes, or if they get pocket money, they buy something and hide it. I've got one in clinic in my private clinic. The parents say to the child, 'We want you to be honest about it, because I found two full bags worth of wrappers under your bed.' I've spent a lot of time at private clinics that a lot of parents go to seek help because they find wrappers (HP16, Paediatrician, Specialist Weight Management Clinic).

The health professionals drew associations between overweight parents restricting children because they were trying to avoid their children experiencing the same issues they had experienced with weight. HP9 (below) shared a current case to exemplify how and why children began secretly binge eating:

They start sneaking food and doing all these things that are really harmful. That whole relationship is in jeopardy. Actually, I'm seeing a family at the moment, the girl, she's only three, I think, and she's been on the 90th percentile since she was born. The dad is quite a big guy, himself. He's quite tall, he's quite broad, and he's putting a lot of pressure on the mum, who's also quite a big person, who's had issues with her weight all her life. He's pressuring her to feed her so that she loses weight, a two-year-old or three-year-old, three I think. And it's just creating such negativity within that family. The poor child, they just feed her vegetables all the time and she's constantly asking for food (HP9, Community Dietitian).

The health professionals found binge eating and sneaking foods were common reasons parents self-referred their children to weight management services. "Finding wrappers" were evident of children sneaking food. Often parents had a history of struggling with weight and attempted to restrict or control their children's diets which, health professionals believed, led children to sneak and binge on restricted foods.

4.5 Perceptions of assessing children with obesity

This section addresses those times that the participants talked about how their role related to assessing childhood obesity and how they fulfilled this role in practice. Every health professional interviewed believed they had a clinical responsibility to assess cases of childhood obesity; however, the depth of these assessment differed between health professionals. Perceptions about causes of childhood obesity were reintroduced during these discussions around assessment. The complexity of interactions between food choices, behaviour, environment and individual circumstances were real-life issues the health professionals encountered during their assessments.

Many of them have multiple other issues, and that's one of the reasons why we need to assess each case. Obesity is just a manifestation of so many other things going on in their life. They're assessed by one of the doctors, either me, another paediatrician or our registrar, to see if they've got any underlying medical

indications for the obesity or medical complications from the obesity so we can get that to start an action (HP16, Tertiary Care Paediatrician).

HP16 described a characteristic of patients frequently described by the health professionals during interviews, "many of them (the children) have multiple other issues". The role of assessment was an exploration of what "these things going on in their life" were. The extract, above, illustrates the complexity of the cases the health professionals often encountered in childhood obesity management and how assessment was used to determine which of these issues needed to be first addressed. The assessment, which either she or someone else in her team undertook, was crucial for finding a starting point for treatment. In this way, assessment is used to map the causes and solutions. It was also used to determine a hierarchy for which matters required treatment first; medical causes and consequences took precedence over behavioural indications. This sense of mapping out the unique causes of each case of childhood obesity was central to beliefs about the importance of assessment for determining how to treat each patient. HP14's quote, below, demonstrates how treatment is dependent on accurate assessment because the cause(s) of each child's obesity are "so different":

I just think that our assessments are so important. We can't pigeonhole people. Everyone is so different. Some people are overweight, because they eat perfectly healthy diets, but just have a genetic issue and too big of portion sizes. Other people have real issues with comfort eating or binge eating or some type of emotional eating; whether you're talking about an adult or a child. For others it's just lack of education and once you get them eating the right foods they're fine. There's always a huge range of different reasons and you need to treat the actual reason as opposed to making it a one size fits all thing (HP14, Dietitian).

HP14 explained her development of an appropriate treatment was dependent on her ability to assess and distinguish the "actual reason[s]" amongst the "huge range" of potential factors on a case-to-case basis. She supports the idea "we can't pigeonhole (children with obesity)" with a list of different cases encountered in her management of children with obesity; suggesting treatment varies on a case-to-case basis.

Assessment required health professionals to action a range of knowledge and skills to determine what specific factors were contributing to the child's obesity on a case-to-

case basis. For instance, one clinical psychologist who worked within a paediatric obesity clinic spoke about how she utilised her skill-set and knowledge base to assess "the mental health issues" associated with each patient's obesity. She described her role was to address the psychological and behavioural aspects of childhood obesity.

I assess the mental health issues to engage in behavioural weight management, to address the parenting issues, possibly to diagnose mental health problems in the child or adolescent. But what clinical psychology really does is two things, it formulates things for people, 'what makes this client different?' 'What maintains their obesity? (HP22, Tertiary Care Clinical Psychologist).

HP22's description of her approach to assessment was to explore "what makes this client different." She described viewing childhood obesity through the context of "clinical psychology" to determine what "maintains their obesity". Like the other health professionals HP22 interprets her assessment as key to "engaging in behavioural weight management".

HP2 discussed his limitations to manage childhood obesity because sometimes the assessment revealed the complexity of issues occurring in the child or family's life put addressing their child's weight at the bottom of the hierarchy. This extract demonstrates some of the circumstances in which health professionals were unable to treat childhood obesity:

Part of my assessment of each child is to identify problems whether or not they are part of what they presented with and to help them identify and understand that there is a problem. Then, depending on their age, to have some more direct plan of management of that. So, sometimes with obesity it might be that it's part of a whole list of problems and for that child, or that particular point of time, the obesity is not an issue we can address; because there are so many competing priorities. And that might mean the parents are just in the process of separating. The mother is essentially homeless; and, so, trying to address childhood obesity at that time is not going to work. Or that child has a medical problem that requires other things done so it's trying to help identify a problem and then prioritise and look at management. One of the questions you asked, "how many children with obesity have I treated?" I find it very hard; because I've identified many, many

children with obesity and I've had discussions with parents about obesity. I've talked about implications and why that child might be obese; and talked about behavioural management and dietary management. And in extreme cases I may have provided pharmacological management but the level of management varies quite significantly, and the treatment might very well be just identifying that it's a problem. That might be the extent of my treatment (HP2, Hospital Paediatrician).

Interviewer*: Due to other circumstance?*

Due to other circumstances. Due to that fact that I only have the capacity to see that child once every six months and their major problem is autism and you know significant behavioural problems and the obesity is just too much not the major issue. We can't go any further (HP2, Hospital Paediatrician).

It is the very fact that HP2 only had the capacity to address the most urgent issues impacting on the child's overall health that illustrates the limitations the health professionals experienced in trying to address obesity. In this excerpt, health was acknowledged as an overall status of the child. Weight was described as one aspect amongst "competing priorities"; for instance, "the mother is essentially homeless; and, so, trying to address childhood obesity at that time is not going to work". It is in this example we can begin to understand the complexity of the interrelatedness of issues health professionals face when managing childhood obesity. These stories demonstrate how every health professional participant regardless of clinical background and setting perceived assessment of childhood obesity as part of their clinical roles. However, they also demonstrate that assessments can also reveal more pressing issues occurring in the child or family's life that determine whether weight management is appropriate at that point in time. In cases where a more immediate threat, whether medical or social, is apparent the extent of weight management may be the assessment itself.

4.5.1 Shared experiences of implementing interventions (treatment) in childhood obesity management: Family behavioural issues

4.5.1.1 Parenting issues

While most health professionals spoke about the influence of the external environment on health behaviours, they spoke at length about the parenting they observed through

their child weight-management consultations. Parenting was considered to be the most influential force in the management of children's growth and development:

It's just that it's all parenting. It sounds terrible but I think a lot of it is just poor parenting. The parents should be the one in charge. The kids should not be the ones in charge. They don't want their child to have a tantrum and I'll just often say, like the parents will say, 'She'll go into the fridge or into the cupboard and eat all the biscuits, and I'm just like, 'What could you do about that?' 'I could not buy the biscuits.' 'You bought the biscuit, you know'. It's about the parents' kind of not having the best strategies to deal with some of the behaviours of the kids (HP12, Community Dietitian).

While no single case of childhood obesity was the same, parenting patterns were distinguished within this environment and how they affected children's health behaviours. Parental roles, household security and available resources were perceived by the health professionals as determining factors that affected the way in which parents managed their households. The health professionals believed that parenting often reflected family dynamics which ultimately influenced family meal and activity choices:

> *You look at that particular family, what's happening in the family, what are the dynamics, what's happening. What's going on with the dad? There's often really complex things happening in the background and filtering down to the child, and to the overall tone of the household* (HP19, Community Clinical Psychologist).

Health professionals commonly saw cases in which the parents were not assertive in the household and were unable to create firm boundaries around food for their children. The health professionals spoke about parents' fear of tantrums often meant they gave into their children's food requests rather than having the confidence to stick to their own food choices:

> *I think it's around the behaviour-management of it more than the knowledge. When kids won't eat a core meal, well, then, throw a tantrum and will be given chips and chocolate — that's the issue; because that's all*

> *they'll eat. 'That's all they'll eat.' Parents have handed over the control to their kids* (HP24, Community Dietitian).

The above extract exemplifies a belief that many parents who attended weight management consultations with the health professionals did not have strong roles in the household and allowed their children to take control. The narrative of the "chaotic" or "disorganised" household was another stereotype of families in child weight-management therapy. The health professionals observed how a lack of organisation in the family unit compromised parents' capacity to plan for "healthier" meals and resulted in a reactive form of parenting that made families vulnerable to the convenience of "less healthy" options. As one Community Physiotherapist states:

> *We've got the parents who the house is just chaotic. Mom is not organised. Pick up take away on the way home because it's just too hard to think about anything else. The pressure from the kids of: 'I want take away food.' Mom can't say no for whatever reason. You can really gauge from parents initially whether food is the issue or whether the whole house is just totally chaotic. Food is only one element of the chaotic* (HP18, Community Physiotherapist).

The health professionals perceived that parents were often reactively parenting their children due to external pressures, like meeting cultural expectations, work commitments or social obligations. They understood how family meals could suffer in the wake of other time and emotional pressures and how the built environment made fast, palatable and easily accessible foods were attractive options for time-poor and stressed parents:

As soon as they start going to school and the child starts having more awareness and opinions and like 'no, I don't' like to eat that'. Or 'I'd rather go hungry than eat that food'. Then that gets a lot more difficult. And parents give in more to what the kid wants because they're sick of sending food that ends up coming home not eaten. It's easier to send packets of chips and muesli bars and rubbish because they know that the kid will eat it. But then different cultures have different ideas as well about how much their child should eat and what is a healthy weight and what the grandparents are putting onto the parents and saying

— you know — 'your child isn't eating enough' or 'you don't feed them enough' or whatever. 'You can't take away their treat foods' — or that kinda thing. So, there's guilt everywhere. I think it's also Western culture now. People perceive that they're time poor. Parents have a lack of cooking skills and are relying on takeaway and easy, fast meals. Family culture — I guess like if the parent is overweight than you know that often translates to the children so what the family's priorities are; if they're an active family or not or what their unit is like. Media, in terms of advertising. Access. I think access — like it's so easy to get takeaway or drive throughs on the way home. It's harder to say 'no' it's easier to say 'yes'. And being time-poor — people perceive that. I think if they had cooking skills then they would know making a stir fry with many vegetables only takes 15 minutes, but people think that that's too hard. So, it's knowledge but then, also, motivation (HP1, Hospital Dietitian).

The above extract, while long, dives deeper into the complexity of issues that health professionals observed in their weight management consultations. HP1 raised several issues that were common narratives surrounding the determinants of childhood obesity: lack of education and cooking skills, cultural expectations, familial expectations, time pressures, cost and lack of parental willingness. The excerpt suggests parental situation, education and motivation were considered important elements of family food choices

HP1 exhibited conflicting views of parents with children in management. There were those parents trying to provide their child with what they perceived to be adequate nutrition but lacked education around the nutritional value of certain foods. The comment "there's guilt everywhere" suggests HP1 had an awareness that parents desired to engage with healthy feeding practices but that these practices may be difficult to adopt when they are rejected by a culture who has "different ideas about how much [and what] their child should eat and what is a healthy weight". This was especially difficult when the criticism came from family members themselves. For instance, the health professionals frequently mentioned 'grandparents' were especially common perpetrators of this *guilt.*

On the other hand, there were parents who perceived themselves as time-poor and lacked motivation. This was illustrated by HP1's example of the parent who thought preparing an adequate meal was "too hard." In some instances, parents understood what

a healthy diet was but lacked the knowledge of how to prepare it quickly. In other cases, they had both an understanding of a healthy diet and the knowledge of how to prepare it but they lacked motivation to follow-through with these behaviours. This excerpt demonstrated how gaps in knowledge were intertwined with motivation to change.

4.5.1.2 Emotional eating

Another common issue the health professionals identified from their weight management consultations were children's relationships with food which they believed had been formed by parents' feeding practices. Several health professionals suggested that food had taken on an emotional meaning in many of the households she had managed and that it had become a source of emotional compensation. Emotional eating was one of the contributors to some of the childhood obesity cases the health professionals had managed. HP10 (below) discussed her perceptions of how the meaning of food in some households held emotional value;

Food is such an emotional thing. People eat for particular reasons and a lot of the times their food, there's lots and lots non-hungry eating going on. Most of them don't eat because their hungry. Most of them eat because they're bored or happy or sad (HP10 Community Dietitian).

Other health professionals described food being a "coping mechanism" especially in children with compromised mental or emotional health. Narratives of comfort-eating were commonly shared. A range of social or familial components could contribute to the need of children to seek solace in foods:

I think food is very emotional. I don't think many people use food as fuel anymore. We would see a lot of kids who have anxiety, depression, mood-disturbance; that food is their comfort (HP31, Tertiary Care Dietitian).

These coping mechanisms could develop into disordered eating patterns of restrictive or binge-eating as a form of control or emotional mitigation. In these cases, health professionals observed how food could also be used as a form of self-abuse or self-harm:

With the kids I have seen- there is a huge problem with people with using food as a coping mechanism. I do think that one of the common causes for adult obesity and childhood obesity is that emotional eating, these days. Like I said, particularly in fostering, you see it a lot. Kids either addicted to food or avoiding food or what have you as a coping strategy (HP14, Private Practice Dietitian).

The above string of narratives demonstrates children's relationships with food were often reportedly tied to psycho/social components. Health professionals described these adverse relationships contributed to poor eating habits associated with obesity in children.

4.5.2 Trying to create change

The health professionals believed their role was ultimately to change poor dietary and physical activity patterns within families of obese children. They attempted to achieve these changes through means of providing education around risks of obesity and associated health habits; and working with families to problem solve their perceived barriers to making these changes. Addressing the issues that the health professionals had identified during assessment and diagnosis required them to take on two other types of roles of educating and problem-solving.

Education was described as more than a simple delivery of dietary and exercise advice; most frequently health professionals found themselves giving advice to parents on how to parent their children.

Health professionals felt they had to work with families around how to implement the dietary and activity-related changes into their everyday lives. These experiences with treatment exposed the health professionals to the daily routines, social and employment obligations, cultural expectations, personal psychology and family dynamics of the patients and their families. Therefore, the health professionals found themselves most frequently assisting parents with brainstorming ways to incorporate these changes into their everyday lives.

4.5.2.1 Educating families requires more than nutrition and physical activity information

The health professionals saw part of their role of educating patients and families as bringing awareness to behaviours and addressing misconceptions. Consultations often revealed issues with family dynamics and parenting; with parenting being the main driver of family dynamics:

I think a lot of parents struggle to get their kids to do things. Like I think of this family, I think, "Well, why are they not turning the TV off all the time?" Because the kids kind of crack it, they get used to it. So, I guess a lot of the time — I would say changing things and doing things is around teaching parenting skills and how to deal with tantrums (HP4, Hospital Dietitian).

The health professionals reflected on their experiences with families and found that often the education they were providing was around teaching parents how to manage their children. HP4 displays an awareness of why some parents do not put into practice the habits they know are healthier; for instance, turning the TV off. In the scenario, in which parents were met with resistance to the prescribed change, she described her role involves teaching parents how to manage negative behaviours of their children in response to changing habits.

Another element of educating parents included addressing misconceptions around diet and physical activity. For instance, the health professionals commonly reported parents held the view that physical activity referred to organised or structured sport and struggled to get their children to play.

Often, parents do try to put them in structured activities, these kids. Whereas they just need to be generally active. They don't need to be in a structured activity (HP19, Community Psychologist).

HP19 acknowledged some parents know increasingly that their child's physical activity level is an important element in managing their weight. She also acknowledged that there is an intention by some of these parents ("parents do try") to address their child's weight by enrolling them in "structured activities" but "structured activities" alone are necessary to increase physical activity. This is exemplary of the situations in which

health professionals described expanding parents' ideas around physical activity. Some of the health professionals reported talking to parents about the importance of incidental activity and outdoor play as means of achieving increased physical activity levels amongst children.

While the above examples demonstrate how the health professionals believed education was an essential element of their role as facilitators of health, they also felt an obligation to help parents identify ways of implementing healthier ways of eating and moving in their everyday lives.

4.5.2.2 Helping families implement changes into everyday life: A task of problem solving

The main intention of this section is to describe how these health professionals felt a large part of their role was to tailor treatments to family circumstances. To achieve this, health professionals described strategizing with families how to reorganise schedules, plan for away-from-home meals and dealing with resistance to change from immediate and extended family members.

Families frequently presented to treatment with a range of issues that were impacting on the child's weight. The health professionals explained knowledge around adequate diet and physical activity was usually not the main contributor to obesity in the cases they had seen. The health professionals described consultations revealed how their patients' family dynamics, chaotic schedules and social obligations shaped family eating and activity habits.

Common storylines around why parents found difficulty implementing changes into their lifestyles began to arise throughout the health professionals' interviews. Parents often encountered resistance to change from children and other family members, including spouses and grandparents. Social and cultural occasions like parties, holidays and sporting events influenced the types of food children were exposed to and allowed to eat. The health professionals' perceptions of barriers to management will be discussed later in this chapter and will elaborate on family issues.

Resistance to changing health behaviours from children and other family members was a reoccurring theme of stories around managing children with obesity. The health

professionals described many parents reported feeling they unable to manage their children's behaviour; and appeared out of control when it came to food choices made in the household. HP2 below exemplified how this may play out in a consultation with parents:

The major resistance is related to, 'Well I'll never get him to eat that', or 'he has a tantrum' or 'he fusses'. So, the resistance when it's presented back to me as to compared to why he's not doing it is, 'it's all very well and good, but how do I get my child to eat what you're suggesting they should be eating' or 'not eat what you're suggesting'. So, it's how they manage the child's behaviour. Some of it is understanding what a healthy diet is; but the other is how you deal with a child who's not eating a healthy diet. So, that would be part of my role. It's not just obesity and diet because there's lots of other things for example sleep or screen time it's the parents' ability to manage their child — that's the problem (HP2, Hospital Paediatrician).

Problem-solving was implied by needing to assess and address influencing factors less obvious than diet. This excerpt showed how HP2 perceived the causes behind the cases of obesity presented to him were, to a lesser extent, about "understanding what a healthy diet is" and more about how to manage a child who refuses a healthy diet. He explains how, in these cases, his role was to address "not just obesity and diet" but also to consider and work with issues around screen time and sleep. According to the participants, knowledge of healthy food and physical activities was often not the main issue families presented with. The scenario of the parent with the resistant child was raised throughout several interviews and appeared typical of families the health professionals encountered in the childhood obesity management setting.

Other examples of how this role of problem-solving was used to help families implement changes are demonstrated below by HP25 and HP19. These narratives show how the health professionals had to think outside of the immediate presenting issues to tackle barriers to successful implementation encountered by their patients:

I would list the benefits of active play. I think half the thing is parents don't know the benefits of active outdoor play. They don't understand that it's not ... Play is learning for kids. Play is also, when it's active, exceptionally healthy. Then find

ways you can stop screen time or reduce it, turning it off, videotaping it at a time that doesn't compete with outdoor play or do it again. Tips you can do, when you can't play outside, when the weather is miserable, does it have to inactive indoors? No. You can use socks. You can use balloons. You can use sheets. But get them to list it with you (HP25, Exercise Physiologist).

Unlike diet, some of the health professionals found parents were less aware of the importance and meaning of children being physically active. This quote from HP25, an exercise physiologist, reflecting on her time working with childhood obesity exemplifies the dynamic role of the health professionals in having to move between providing information (educating) around types of physical activity for the parent in scenario one; and providing strategies (problem-solving) around barriers like how children can remain active when "the weather is miserable":

We find that all the times school holidays come, things happen. They've got a grandparent, and that's what we plan for. We do all the practical planning. So, what's going to happen when they go to the grand-parents' for a week, and the grandparents give them lollies all day long (HP19, Community Psychologist).

This extract again draws our attention to the extent some of the health professionals went to fulfil their perceptions of their role. HP19 described using foresight and "practical planning" to prepare for tricky situations with family that put interventions at risk. She describes a common scenario of grandparents minding children over school holidays; and demonstrates how family relationships and social events could threaten parents' efforts to ensure health behaviour changes were being maintained.

4.6 Types of barriers experienced by health professionals

—These are all barriers that are there. Some of those are systemic issues. Some of those are health professional training issues. Some of them are personal lives issues. I think generally, with the last few decades, we've moved to a place where the default choices around eating and activity are generally unhealthy (HP15, Tertiary Care Paediatrician).

This quote epitomises the range of barriers described by the participants in this study. It is important to remember the health professionals viewed childhood obesity as the

manifestation of complex causal factors; rather than originating from a single cause. It was this complexity that challenged their abilities to find adequate solutions for the cases presented. This following section will attempt to clearly articulate in an organised manner, the "mess" of interrelated issues or barriers the health professionals described.

4.6.1 Family barriers

The health professionals acknowledged environment and culture placed external resistance on interventions; however, the barriers they reported most came from within families and the current health infrastructure. This section depicts the challenges the health professionals faced working with families in childhood obesity management. The section describes the barriers as viewed by the health professionals and uses a selection of quotes to demonstrate shared narratives. The health professionals experienced three types of barriers when working with families in the childhood obesity management setting:

(i) High fail to attend (FTA) rates
(ii) Resistance to change
(iii)Relapse is common

The health professionals believed these barriers resulted from a combination of parents' perceptions, family dynamics, social circumstances and environmental influences. The following is a description of the struggles encountered; and displays how the health professionals employed empathy and lived experience to make sense of how and why these barriers form.

4.6.1.1 Families fail to attend (FTA): Issues getting families through the door

The first challenge was often getting parents to attend the consultation:

The first barrier is even getting people in the door. Then, there's so many more challenges. How do you engage these families, how do you really support them to challenge what people can feel a lot of shame and guilt around as parents?
(HP19, Community Clinical Psychologist).

HP19 talks about experiencing issues with "getting people in the door." Understandably, it would be difficult for health professionals to manage any condition

when patients do not show up for the consultation; however, this was a commonly experienced barrier for the health professionals interviewed. There was no difference in treatment setting. Reports of high "fail to attend" (FTA) rates were shared by health professionals working in primary care (such as community services) and private practice where there was a higher associated cost to the client. Even in specialty clinics with long wait lists, engagement is a challenge:

Even families who have an overweight child and know their child is overweight — they just can't get there. Some of it's around families not recognising it's an issue so they don't want to go. But it's also about prioritising it; so even though they enrol to go, and they want to go, somehow, they don't stick with it (HP7, Dietitian, Paediatric Weight Management Clinic).

Another reported barrier is exemplified by the above quote by HP7. Sometimes there are logistical difficulties parents face attending management sessions due to the operating times of the clinic; for instance, distance of clinic from home or work, work schedules or having to attend to other children. Two other issues are raised in the above excerpt that proved common to perceptions expressed during interviews. One, some "families" do not "[recognise]" their child's weight is "an issue" therefore they see no need to attend a management session. Two, even when it is viewed as an issue and parents make the active effort of "enrolling", "somehow" they cannot organise their lives in such a way to "stick with it (management)".

Even after initial engagement is made with the parent, the chance of them returning for subsequent consultations for their child is low. Some health professionals acknowledged that clinic operating hours made it impossible for some families to attend because of their tendency to clash with both school and work hours. "Everyone's busy" during clinic times and ideal management would require both child and parent to be there:

I'm here working from 8 to 4:30, so I could see school aged children, but if they come during school time, that's the thing, community health across the board, I'd occasionally see them, I would be more so say like a 2:30 appointment. Clinic hours are certainly a limiting factor because they are during school hours and parents working. Some kids go to before school care and after care. They don't

really have time to be going to appointments and yeah, everyone's busy (HP8, Dietitian, Community).

HP8's contractual working hours in community health care only allows for consultations to be taken week days during both school and work hours; posing difficulty for student and employee to coordinate time off to attend meetings. HP8 expresses empathy for these clients, "they don't really have time to be going to appointments".

Another issue to note is that of "prioritising" the childhood obesity, which HP7 speaks about. Several health professionals spoke of how some parents "prioritise" it based on how much of an issue they perceive it to be. The same can be said about the health professionals treating it. Where HP7 speaks about prioritising treatment almost in a judgmental tone describing those who do not, HP8 acknowledges that some commitments like work and school may come ahead of attending an appointment for something that parents may or may not see as relevant for their child.

The narrative of parents being unable to stick to treatment or begin it at all was an important barrier contributing to the theme of "frustration" and "feeling of ineffectiveness" experienced by the health professionals. This was such a common happening for HP13's clinic that she claimed "drop outs and FTA's" made up the bulk of her childhood obesity clientele: *"We have a lot more dropouts and FTAs[13] than we do have success"* (HP13, Dietitian, Paediatric Weight Management Clinic).

Furthermore, the disengagement can happen at any time; regardless of treatment setting (i.e. private practice, community clinic or specialty clinic):

> *Attendance rate is really iffy. My highest FTA rate has always been around children that have weight concerns, so attendance rate is really, really challenging. Even in private practice where there's cancellation fees and everything, I still have a high FTA rate, compared to anything else, with obesity clients that have got care plans. I haven't looked at it recently but when I last looked at it, it was about 30%. So, one in three would cancel, or not come for a session, like a follow-up session, or they would disengage*

[13] FTA: Fail to attend. In this quote, the health professional is making reference to patients who fail to attend consultations.

somewhere down the track (HP4, Dietitian, Community and Private Practice).

HP4 is a dietitian who works both within a community clinic and her own private practice and has noticed a common pattern of "fail to attend" or FTAs amongst "children that have weight concerns" across both settings. The FTA rate was such a concern for HP4, she took note of the frequency of cancellations and reported a 30% cancellation rate. "Even in private practice where there's a cancellation fee" she found the consistency of clients cancelling childhood obesity management consultations. The interesting issue to note from these excerpts is the consistency in the stories of cancellation and FTA rates amongst the health professionals. While some offer suggestions for why this may occur (i.e. unsuitable clinic hours) others had few explanations of why this was occurring or how to fix it; leaving health professionals with the big question asked by HP19 "How do we engage these families?" to get them to attend in the first instance. Secondly, "how do we support them?" to continue their attendance to services.

4.6.1.2 Resistance to change: Difficulty getting families to make changes

The frustration felt by the health professionals extended getting parents to attend the consultations. Even when the health professionals were able to get parents to actually attend the consultation, they found some parents unwilling to make any changes to the family's food and activity habits for a range of reasons. This section describes issues the health professionals believed interfered with getting families to make changes.

4.6.1.2a Parental resistance to accepting the diagnosis

—They come in and they say to me, 'I'm not sure why we're coming in here today,' which often happens; or, 'I've been told by the general practitioner that my child is too big. I don't think that's a problem'. Sometimes I start off on the back foot, because, obviously, if the parents don't see a problem, then it's going to be difficult for me to make- sort of encourage them- to make changes (HP10, Dietitian, Community).

For HP10, parents arriving to a first consultation without an understanding of their child's diagnosis created an uneasy environment. She described the added pressure of

having to broach the topic when the parent was completely unaware. "Starting off on the back foot" implies she began the consult defensively; careful with her language to "encourage" rather than "make them make changes".

It appears even when parents did have a clear understanding of "why they [were] coming to see [her]" they arrived defensive and adamant they "don't think [the child's weight] is a problem"; posing other challenges. In this instance, HP10 acknowledged "it's going to be difficult" before the consultation had even begun because parents arrived already unwilling to cooperate.

These experiences were shared by HP16, a paediatrician working within a childhood obesity specialist clinic where parents' own beliefs about the child's weight interfered with the health professional's ability to engage them in treatment

Barriers are non-recognition, prioritisation; getting them to actually recognise that this is a health issue. Even kids with really severe obesity, some parents don't seem to grasp it's impacting on their health (HP16, Tertiary-care Paediatrician).

While listing similar experiences of parents' failing to recognise the health implications associated with obesity, HP16 also introduces another challenge encountered in practice: prioritisation. Her comment, "some parents don't seem to grasp it's impacting on their health," implies a belief that parents' prioritisation of their child's obesity is linked to their understanding of it as a health issue. She finds herself in a difficult role of trying to alter their preconceived ideas about weight and health: "getting them to actually recognise that this is a health issue".

HP2 also recalls the difficulty of trying to manage young children whose parents "don't think it's a problem". However, he attributed this to the fact that most health issues related to obesity are not immediate:

You're dealing with young children and some things or problems in adulthood generally start in childhood; and the presentation may not be a significant problem at that time. And that's often the case in obesity because parents and other people don't think it's a problem; because it's not causing the child any functional impact (HP2, Hospital Paediatrician).

Even though “some things or problems in adulthood generally start in childhood”. Because the obesity “[is] not causing the child any functional impact” the parent is unable to visualise or make sense of the potential impact it can have on their child’s health.

4.6.1.2b Child resistance to changes

Across the spectrum of barriers which the health professionals encountered, issues within the family dynamic appeared a common occurrence. Below, we see how, for HP18, the context of family interaction and, specifically, parental struggles with resistance from children complicated parents’ decisions around food:

It's often not about the food. It's about refusal. Food refusal. The child thinking that he has a say, "Well, I'm not eating that." Those sorts of issues, which are not specifically about what the actual food is. It's only one component of this whole thing. There's lots of other components that could potentially affect what the child actually eats at the end of the day. Child resistance is actually a very common issue for Mum that she just can't deal with. ‘I can't go there. I can't do the tantrums. I can't do the fights (HP18, Physiotherapist, Community).

For HP18, how parents dealt with “child resistance” to food was “one component of the whole thing”; “the whole thing” being the intervention. The frequency in which this topic arose during interviews suggests that health professionals saw parental fear of their child’s food refusal as a vulnerable aspect of childhood obesity interventions. Furthermore, HP18’s account of parents saying, “I can’t go there”. “I can’t do the tantrums”, demonstrates how behaviour change really could be, in the words of HP16, “an uphill battle” parents were constantly fighting.

4.6.1.2c Changes perceived “too hard” to implement by parents

The health professionals posited that the crux of childhood obesity management lay within the perception that “change is hard”. The health professionals understood parenting to be a relentless task that took place amongst a range of other everyday responsibilities. Empathy is apparent in several explanations provided by the health professionals around why parents might not prioritise the proposed intervention. It is important to note, all but two of the health professionals were parents themselves;

which likely contributed to their perceptions around why parents have difficulties prioritising interventions:

Barriers are… a couple of things. It's relative values. It may not be a problem for them, so there could be a lot of possible barriers. They may not fully understand. It may not truly be a problem compared to all the other problems they face. It may not seem urgent. It's not something that they truly want. They don't see the benefits, and it is very, very hard to change how you operate. It's very, very hard to change how you operate in a family, running a household under pressure, but change is hard anyway (HP22, Tertiary Care Clinical Psychologist).

Interventions required parents to change the way they fed their children and allowed them to spend leisure time activities. The health professionals gave a range of reasons why parents did not implement prescribed changes to their family's behaviour. In the above extract, HP22 describes three possibilities she has encountered in practice that help her make sense of why some parents might not implement interventions.

First, HP22 introduces the concept of relativity. She perceives problems as "relative values", namely, insinuating that how they (parents) perceive a problem is dependent on both how that problem is understood ("they may not fully understand"); and what else is going on in their life at that time ("it may not truly be a problem compared to all the other problems they face").

Next, she mentions that "it may not be something they truly want". This implies that the parent might understand the risk associated with the child's weight but that making the changes might go against another ideal they are maintaining through their current behaviours.

Finally, HP22 shares the view that "change is hard"; particularly in the family context of parenting, "it's very, very hard to change how you operate in a family, running a household under pressure." The use of the words "under pressure" provides a caveat for why parents operate the way they do. The health professionals described parents as already being pressed for time and resources; therefore, making the recalibration of habits like eating and sedentariness a daunting task:

Time for parents I think is also another barrier. 'I don't have time to prepare food;' and the packaged, processed foods or takeaways is the quickest option for them to get on the way home (HP10, Dietitian, Community).

While HP10 talks about time as a necessary resource for parents to be able to conceive making changes like "[preparing] food"; HP1 (below) presents the notion that it is the perception of time that is the problem. Through this lens, "not having enough time" is viewed as a perception rather than a reality. It calls on the concept of "relativity" presented by HP22:

People always think they're time poor but it's really where your priorities lie. If you value healthy eating and exercise you would do that over watching TV. If you don't value it enough then you're going to choose couch-time over outside. But people feel like they have to have this time to unwind and they don't realise that going for a walk can help you unwind. So, it's hard. It's really hard having to work with someone to change their values that underpin their motivation; that underpins their behaviours (HP1, Dietitian, (Children's Hospital Association).

Here HP1, talks about her own difficulty "having to work with someone to change their values". However, she perceives this as a necessary step for successful intervention because she believes that these "values" "underpin [parents'] motivation"; that ultimately "underpins their behaviour". HP1 introduces the notion that in order to motivate parents to change behaviours, she must first change their perceptions of why they are operating a certain way.

Parental resistance to change was a challenge experienced by all the health professionals. The health professionals shared stories of how often parents entered consultations with an expectation and readiness to change the child's eating and activity behaviours; but became overwhelmed when told the intervention applied to the entire family, themselves included. Here is an example:

We used to say, "Who's ready to change?" And the mother would point to the kid and say, "She is." Hello! She is eight! You've got to be ready for change too. If daddy insists on eating his chocolate mud dessert in front of the family every night because he's worked hard, that's not ready for change. Whole families can benefit from healthy changes and they need to embrace it (HP25, Exercise Physiologist).

The concept of a "[readiness] to change as introduced by HP25 above, was referenced by more than half the health professionals. The health professionals believed that one of the most important elements to interventions being successful was parents' readiness to change. This meant accepting that changes must be made and being prepared to make changes.

Often parents were not ready to make these changes and some health professionals saw this as the end point of any immediate intervention:

If they really don't want it, they don't make any changes. Anything is too much. Often there are other issues going on. As I said, at the end of the day the fact that they have such severe obesity means that there are issues going on. We say, "Look, maybe this is not the right time to address this. Here are the seven things that we've suggested. See if you can work on some of them. When the time is better for you, we can get you reengaged with the clinic and start (HP16, Tertiary Care Paediatrician).

HP16 again raised the issue of complexity in cases of childhood obesity; and that sometimes the complexity of cases was greater than her capacity to manage the family. In these instances, HP16 provided the education she believed was part of her role as a health professional. However, she realised this probably would not be heeded by the parent because "at the end of the day, there are other issues going on" that took priority over the child's obesity.

This was an example of HP16 accepting that sometimes interventions could not go forward because the resistance to change was too great. However, it is also important to note that she offered the parents an option to return "when the time [was] better".

4.6.1.3 Relapse is common

—I feel that these forces of "willpower" are lesser than the strong environmental drivers (HP22, Tertiary Care Clinical Psychologist).

Despite the efforts of the health professionals, the sustainability of their interventions was rarely maintained. While parents were described as generally well-intentioned, external factors were viewed as more influential than parents' "willpower" to maintain changes. Getting parents to maintain changes was described by some as the biggest

challenge because can be incredibly difficult because maintaining these changes required a constant effort.

Making change happens pretty quickly in some cases. Most families can make change. It's that maintenance side of things that is often the biggest challenge; how to come back when you've relapsed (HP4, Hospital Dietitian).

The health professionals talked about how relapse was a normal and common part of childhood obesity management: *"You see some of the kids make changes, and then, often, like a lot of other people, relapse, or go back to their old eating habits"* (HP17, Dietitian, Private Practice).

They explained this acceptance came from a realisation that childhood obesity management was a long-term, never-ending application of health behaviours that required parents to stay on top of their family's diet and physical activity. This was perceived by the health professionals to be particularly difficult in the face of modern technology and food marketing.

The way fast food is marketed, it's very clever, it's like, "Give yourself a break, get a take away meal. Everyone's going to like it. You'll have a happier family meal. It's a roast dinner. Get this meal." It's hard for people to constantly resist all that marketing and exposure (HP9, Dietitian, Community).

HP9 introduced the difficulties busy families faced against the exploitative marketing of fast food companies who marketed themselves as the more convenient ("give yourself a break"); more cohesive ("you'll have a happier family meal") and more desirable ("everyone's going to like it") choice. The above excerpt contributed to a belief that parents were fighting an unfair battle in which their vulnerabilities were targeted by fast food companies. Parents' need to "constantly resist" was the main barrier the health professionals identified that made interventions so unsustainable.

The experience of relapsing families was described by one health professional as "fighting an uphill battle" against society and environmental factors:

It's almost fighting an uphill battle, because everything in society is telling you the opposite. Most of the things that we suggest to do are easy to do. The problem is

they're also easy not to do. That's where you get the issues (HP16, Tertiary Care Paediatrician).

4.6.2 Unsupportive and under-resourced health infrastructure

—For treatment, it depends on what's available, what's funded, how it's funded, what the mechanisms are, what the training is of primary care physicians, what it focuses on (HP23, Clinician and Researcher).

In addition to family-based barriers, the health professionals spoke about the lack of effectiveness of current healthcare delivery systems around childhood obesity management. Issues raised included: inadequate training and expertise, fragmented funding and service delivery and ineffective diagnostic and referral networks. These perceptions were related to a lack of access to adequate resources including knowledge, information, infrastructure and funding. Because of these reported failures, most of the health professionals felt they lacked the capacity to provide effective management.

4.6.2.1 Inadequate training and expertise

Most of the health professionals believed a lack of training and expertise in childhood obesity management contributed to an inability to provide adequate service to children with obesity.

Some felt the education and training leading up to their professional careers did not properly prepare them to deal with the complexity of health conditions like childhood obesity. For instance, HP1 describes her university degree provided a very broad education around how to treat certain health conditions. She believes the main issue with her education was its focus on adult health; while experience around how to treat children came with employment:

My undergrad was very general sort of training; and then, when I did my placements it was all with adults. With paediatrics, you basically get on the job training, if you get a job in that area; and you get mentored by someone else to learn paediatric dietetics. So, basically, it's when you get your first job. You just have to get your foot in the door and then it's all on the job and your own research and learnings and stuff like that. Having said that, we all come at it in a different way because you have to get a job in it- yea like there's no formal

training apart from a few online courses. But then again, it's all theory-based. There's no practical. There are definitely standardised ways to go about certain diseases and treatments and things that we all follow; just mostly with adults. But, like, everyone has their own spin on what they do and what they talk about and what they focus on (HP1, Hospital Dietitian).

HP1 attributed her feelings of uncertainty towards managing children to the shortcomings of formal education; which she describes as "all theory-based". She acknowledged "standardised ways" in which health professionals were taught to "go about certain diseases and treatments"; however, a lack of training also meant health professionals filled in the gaps with their own approaches by putting "their own spin on what they do and what they talk about and what they focus on".

For others, the barriers they encountered managing cases of childhood obesity highlighted specific issues they did not have to deal with when treating other conditions. For example, while food and sedentariness were identified as direct causes if childhood obesity, treatment generally required focused on external influences of these behaviours as described by HP2:

The biggest challenge is how to get the child a better diet and how to change that family's diet, and the parents' perceptions and understandings so they feel strong enough to make changes at home and, in particular, with that child. I feel qualified in being able to provide information but in terms of providing strategies that work — I guess I don't feel qualified… or I don't feel effective anyway (HP2, Hospital Paediatrician).

Motivating and convincing parents of the benefits of changing diet and activity behaviours was seen by HP2 as his "biggest challenge." In his view, instilling confidence in parents to manage these changes at home was dependent on being able to provide strategies that work. There was also a questioning of his own abilities to treat childhood obesity, apparent in this dialogue: *Is* he qualified to manage children with obesity if he is not effective? He was not alone in questioning the impact of his role. This uncertainty around knowing how to strategise change was shared by HP13 who worked within a small childhood obesity clinic:

Main barriers to treatment… I think it would be that there's kind of evidence-based guidelines, but they're not always practical. We know what we need to assess, what we need to monitor, but a lot of the recommendations that we can provide to the parents is not really… there's no evidence-based guidelines around that (HP13, Hospital Dietitian).

From HP13's perspective, guidelines may act as a resource to assist health professionals with treating families; however, she found current guidelines impractical; they failed to address the barriers that stopped parents from adhering to treatment plans or "recommendations".

Another critique of the guidelines raised by HP13 was their lack of guidance around how to treat within a multidisciplinary team. This comment around the broadness of guideline suggestions aligns with HP1's comments on how "theory-based" resources and a lack of specified practical training lead to unstandardized practices:

They'll (the guidelines) say that you need to refer to a multidisciplinary team, or you need to get GP involved and you get dietitians, psychologists involved, and you need to provide them with education. That's the extent of it, it doesn't really define the roles and how people should be working together (HP13, Hospital Dietitian).

It is important to note, HP13's clinic was delivered by a multidisciplinary team comprised of a dietitian and a paediatrician who had little understandings of their specific and shared roles. Her comments on the guidelines imply an intention to treat according to standardised recommendations which is inhibited by knowledge and training gaps brought to light by other interviews. These excerpts demonstrated a perceived disconnect between health professional need and resource adequacy and availability.

4.6.2.2 Fragmented funding and service delivery

Funding was identified as a key barrier to service delivery during interviews with the health professionals. Fragmented funding was identified as an issue across all professions and practice types that limited service capacity. The main issue they found with funding was that it was scarce and inconsistently provided.

The health professionals who worked in public services, like hospitals and community care, spoke about the financial burden services were placed under to be cost-effective. This created a hierarchy of referrals, with more urgent, life-threatening health issues at the top. HP1's explanation below gives an example of how stringent funding of public health services forced health professionals working in these services to act reactively and prioritise patients based on the urgency and severity of their condition. In comparison to the other health issues these health professionals were faced with every day, childhood obesity was not an immediate threat to health and required a far more complex intervention than some of the more acute problems:

We have a massive, massive lack of funding; and when someone leaves, they try to not fill the position because they want to save the money. You know, cost savings. Basically, every year we've been told allied health has to save another two million dollars. We're like, 'we don't have any expenditure'. Like, we don't have any consumables that we use, except for feeds, in the hospital and that's non-negotiable; we can't cut. So, the only other way we can cut funding is staff. The only way that allied health can save money is by not replacing people when they leave or waiting a bit longer if someone goes on maternity leave; and not replacing someone as soon as they would have. Yea. So, also, massively understaffed. And we all know we aren't doing the job we should be doing. We are a band aid approach. We all hate it, but we are a reactive service. But there's nothing we can do. Like, you actually have to just keep on doing it. The only time you would get to think about this and say, 'I need to do more work to be more proactive rather than reactive,' means you have to take some time away from seeing patients and that's a clinical risk. To be honest we are all running around just trying to get through the patients that day, and this is really bad, but we don't have enough time. We don't have forward thinking because we are a reactive service. It's terrible. It's a horrible way to work but we are so under the pump like — to give you an idea — every morning all the dietitians have a morning meeting to deal with the day's referrals to see who has capacity to see what. We are all at capacity — 10 patients plus admin stuff, dealing with emails/phone calls to get back to. And then there's still patients left over that we don't get to. We just can't. We can't action them. Most of us stay back an hour or two late; finishing high priority patients that you don't feel comfortable leaving

the hospital and being able to sleep tonight. So, having the time to even think about an intervention and try to call someone else — it's not in my head space. I do think it's everybody's role as a community. So, I think we have to support each other. But I think we need more time and money and funding to actually be able to address childhood obesity properly (HP1, Hospital Dietitian).

The reported underfunding of public services was an issue raised by every participant working in the public healthcare sector. HP1's stressful experience working within a service operating at capacity showed how childhood obesity management was low priority even though HP1, herself, believed it should be every health professionals' role to address.

HP4 described the way in which her service was funded was dependent on how many patients were seen and how much risk was managed. This encouraged health professionals to only manage patients for a short time, or until immediate risk was removed before they were discharged from the service.

So I think the way our health service is set up that when people are on the right track we discharge them because we need other people to come through the door, but it's often during that phase that they need support because there'll be something that comes along that's a challenge and a barrier, and so they'll go back into their old ways and they need support coming out of them. I think the way our medical model doesn't necessarily support management of chronic disease long term. I think probably the area that the acute comes more evident is when they get that diagnosis early-on of type 2 diabetes or there's some kind of acute medical problems that we probably step in and play a bit of a role there. Then where possible they go to that community setting. From my understanding they have capacity to see them. This could be a misconception on my point of view. We're looking at a short-term service here, being acute. That's what we're built on; a short-term model, whereas community are not built on that model (HP4, Hospital Dietitian).

Again, we see HP4's service prioritised acute conditions because its funding rewarded health issues that could be cleared quickly; whereas obesity required ongoing support. Patients with obesity were only prioritised when they presented with more urgent

related issues like type 2 diabetes. There was a sense of urgency described by health professionals in these clinics. These services swept patients up and spat them out after providing minimal care to return them to a non-life-threatening health status.

A shared view amongst public hospital clinics was that community services had adequate capacity to deal with longer-term conditions like childhood obesity. Therefore, these children who presented to hospital services were referred to community services. However, the health professionals from the community setting claimed to also lack funding and capacity. For instance, HP8 was a community dietitian whose role as a paediatric dietitian was only funded two days a week:

I guess for me, my role, as a paediatric dietitian, is funded two days a week. So, that's, really, quite small. I think there's not enough funding. But, really, I guess, dietitians should be back at that starting point where you're trying to prevent things from happening, but that doesn't really happen. There's often a focus more on the treatment side of things (HP8, Community Dietitian).

HP8's role as a community dietitian was intended as a "preventative role", however, HP8 found herself treating complicated conditions which required more time and funding to provide adequate services. Other participants from the community health sector spoke about how sometimes funding for a specific state-wide intervention opened up resources for community services to treat patients more effectively. Funding for such interventions were described as time-limited; meaning, when funding ended so did the capacity of community services to continue the same level of care. HP18, who worked within a community-based weight management service, explained how a rise in state funding incentivised her clinic to "jump onto" the newly available funds:

The funding is a huge barrier in this state because there's no money for anything. That's why we jumped onto this PEACH[14] funding that was available. PEACH has just finished now, at the end of last year. There were huge amounts of funding which went into this area. But, a lot of those places that were running PEACH wouldn't have had the individual resources to continue to follow those people up

[14] PEACH (Parenting, Eating and Activity for Child Health) is a childhood obesity management program that targets parents of primary school-aged children who have overweight or obesity by employing a family-based approach to improving lifestyles and weight status(Croyden et al., 2018; Magarey et al., 2011) .

afterwards. Our funding was pulled many years ago from the chronic disease funding. The person who was in charge of chronic disease at the time felt it was important that, obviously, we start that at a young age. Some of the funding, from what I understand, was kind of pulled and put into the child health budget, which was our positions. There isn't any other district in Queensland that has dedicated community services. When you're looking at funding, if you could say, "okay. If you can give these services", it's, actually, really difficult. Even though you probably are making changes for these families because they're actually engaged with somebody, it's really difficult to statistically show (HP18, Weight Management Clinic).

According to HP18, community services lacked individual resources to provide the long-term kind of care and follow up childhood obesity management required. The funding provided to run a specific intervention allowed for services to focus their attention to providing a heightened level of care; however, the level of care was tied directly to the extra funding provided.

Health professionals believed part of the problem with funding was that funding entities expected to see signification and immediate results from the initiatives they were supporting; however, childhood obesity required long-term support; therefore, there were few short-term measurable health benefits.

Every health professional spoke about how continuity of care was an essential part of childhood obesity management and how they were unable to achieve this due to funding restraints. Even services that were specifically funded to manage childhood obesity, like specialist weight management clinics, had insufficient funding for follow-up of patients. For instance, HP13 who worked within a small weight management clinic, spoke about how the funding of the clinic was dependent on meeting key performance indicators (KPIs) which restrained the time she could spend with patients:

The hospital gets four hours of funding once a week for a paediatrician and dietitian to run this clinic; and then they've got KPIs to do. How many kids, how many patients they expect the clinics to see. We want there to be a wait list of four weeks to two months. Things that are not really reflective of what we can do with these patients, so that's partly the reasons why the reviews are 15 minutes

long. We can't afford to give everyone 30 minutes, because then we don't meet our activity target (HP13, Hospital Dietitian).

HP13's explanation of how the delivery of her service was shaped by the "activity targets" required to receive funding. The stories shared by the health professionals give a sense that funding bodies force the treatment of childhood obesity to function in an acute model of care. HP15, a paediatrician from a prominent weight management clinic who had practiced for over twenty years managing cases of childhood obesity, explained why these short-term models of funding are a major barrier to childhood obesity management:

Childhood obesity management requires long-term behaviour modification. Long-term dietary changes. Long-term changes in screen behaviour and sedentary behaviour, and long-term changes in physical activity. Long-term changes in sleep patterns. All of that does take time, and why you can't just do a one off. You need to keep supporting them. We do what we can in the time we are funded for and monitor until the end of that time, because we are just not resourced to be able to follow up people long-term. Now, for serious chronic relapsing disease, you can't just treat for a moment and then leave it (HP15, Tertiary Care Paediatrician).

Despite being considered the gold standard for childhood obesity management because of their multidisciplinary capacity, the staff from specialist clinics still perceived themselves to be inadequately resourced to provide the "follow up" all the health professionals believed was necessary to maintain intervention success. These services were described as intense interventions that provided targeted and specialised education and lifestyle strategies to families with children in weight management therapy.

A health professional (HP15) working within one of these perceived "ideal services" (a tertiary childhood obesity clinic) shared a similar barrier to HP4 around long-term follow-ups of clients. HP15 speaks of how the "relapsing" nature of childhood obesity makes even the most potent intervention difficult to maintain in the long-term.

The main messages from these interview extracts show how the health professionals attributed quality of care to adequacy of funding and funding models. They provided real-life examples of how short-term funding models did not match the long-term

support participants believed was necessary for childhood obesity. Furthermore, they explained how childhood obesity outcomes were difficult to measure which was a disincentive to further funding.

Pressures created by a focus on cost-saving in public health services forced these services to work as reactionary services, while community-based health professionals explained how they took overflow patients from these services and struggled to manage them on their own stringent budgets. Fragmented funding interrupted continuity of quality care and interfered with the health professionals' ability to follow up with patients long-term to the longitudinal impact of their interventions.

4.6.3 Stigma: A hidden barrier that is everywhere

The topic of stigma was raised by every health professional participant as a major barrier both to parents seeking early intervention and to communication between health professionals and parents. Stigma of people with obesity was described to exist in nearly all social and professional realms. Some believed this translated into discriminatory policies and systematic prejudice that interfered with parents seeking treatment for their obese children.

Health professionals believed stigma was experienced both by parents of obese children and the children, themselves. This stigma was described to manifest in discriminatory behaviours experienced from peers, health professionals and access to appropriate services from damaging perceptions of people with obesity being "lazy", "slothful" or gluttonous.

The difficulty is that our approach to obese children; the stigmatisation, discrimination — which, you're probably aware, starts very early on- and it comes from children, adults, siblings, teachers- from politicians, who say it's a personal issue- from politicians to health services to those treating obesity and the community. If every person who's sitting out there who's big is thought to be lazy, slothful, brought it on themselves, then we can't… we're not going to actually be able to move forward (HP6, Specialist Clinician/Researcher).

HP6 believed weight stigma and discrimination were pervasive and entrenched in society. Ultimately, his message, and the message from other participants was, this stigma and discrimination disabled childhood obesity management to "move forward".

4.6.3.1 Social stigma and the perception of "Bad parenting"

Stigma was spoken about in many ways by the health professionals. One way in which they believed it directly interfered with their management of children with obesity was parental reluctance to engage due to fear of being labelled a "bad parent". Failure to engage parents was discussed earlier as one of the barriers health professionals experienced when working with families. The health professionals believed how some issues with engaging families were attributed to their parents' own perceptions of having failed as a parent:

Trying to engage them in the first place is a barrier because of the stigma, I think, of parents needing help in this area. For instance, a new family that I saw the other day — mum was doing her nursing training and has four children. One of the girls is the only one who is overweight. Mum was very reluctant to engage just because of that social stigma of having a child being seen for weight issues. There's a perception it reflects bad parenting (HP18, Community Physiotherapist).

HP18's extract exemplifies the experience of an engagement barrier which she attributed to "social stigma". In this extract she associated the mother's "reluctance" to engage with the fear of social stigma around being a "bad parent". HP18 pointed out that even though only one of four children had a weight issue, the shame around the *social meaning* of being the parent of an overweight child presented a resistance to address the child's obesity.

4.6.3.2 Stigma in the clinical space

Participants also acknowledged stigma in the clinical space from other health professionals towards parents. Some of the health professionals described how parents' fear of being criticised for "bad parenting" came from having had previous negative clinical experiences regarding their child's weight. Previous bad experiences with health professionals affected new intentions to address the child's weight because the

parent was already defensive and reluctant to communicate. HP4 speaks to the experience of dealing with defensive families who had previously dealt with health professionals who blamed them:

These families have often had bad experiences with food or bad experiences with health professionals. Already had the blame. A lot of them have cycled through things (HP4, Hospital Dietitian).

HP8 elaborated on what a "bad experience" and "blame" might look like for these parents by describing her own experience with parents on three separate occasions who expressed feeling patronised and criticised by previous health professionals:

I've had three separate parents say, 'I just felt that I was being criticised as a parent of how I was doing thing'. I think it was the advice is more matter-of-fact and more just, like, 'You need to do this and this' and 'why are you doing that'; 'who told you to do that?' (HP8, Community Dietitian).

Some health professionals, like HP9 (below), expressed frustration and dismay towards their colleagues who they believed lacked compassion and empathy for their patients with obesity. HP9 spoke of having to undue damaging perceptions of parents traumatised by tactless health professionals:

It's awful. Parents get told things like, 'Your child is obese'. 'Are you aware that your child is obese?!' They are so upset. Or 'you're obese'. It's so awful for people. They feel the worst. They may have their own concerns, imagine if they're told that, it's attacking their value as a parent as well, because that's the suggestion. 'What are you doing to your child?'; 'How can you do this?'; 'What sort of a person are you?' Ugh, and you know, we take the most vulnerable people and if we're thinking about an intervention with them, it's so delicate, you know? It's just delicate. We can't just assume that people are stupid and selfish and don't know what they're doing. Parents generally love their kids. I mean, there are some kids that are neglected, there are. There are some parents that are not good at it. That's true. But the approach is, we need something a bit smarter, better, deeper, you know? More human (HP9, Community Dietitian).

These examples highlight a perception that language, particularly stigmatising language, can be a barrier to childhood obesity management. They, and others, implied the topic of childhood obesity was sensitive in nature. These extracts share how health professionals inherited distrust from parents' previous experiences that called into question their parenting. HP9 believed these experiences contributed to an unwillingness for parents to engage with weight management services for their children.

HP9 introduced the concept of "humanising" or giving back dignity to patients that she believed was lost through negative experiences with stigma. She referred to paediatric patients with obesity as "the most vulnerable people" who are often treated like they are "stupid and selfish".

All the health professionals felt the management of childhood obesity required a particularly sensitive and nuanced approach because of the strong stigma attached to being associated with these services. They expressed empathy towards parents with children in weight management and held a belief, summarised by HP9 (above) "parents generally love their kids"; and HP16 (below), "most parents" are not intentionally "[setting out]" to give their child obesity:

At the end of the day, nearly all parents are doing the best that they can with the resources and the information that they have for their children. Most people don't set out to say, 'I want my child to be obese. My goal in life is to be obese'. It creeps up on most people and it becomes very difficult to change the habits. Parents, again, some of them, they do things because they think that's the right thing to do (HP16, Paediatrician).

4.7 Intended outcomes of childhood obesity management

When asked about the intended outcomes of childhood obesity management all the health professionals commented against focusing on weight with families. Participants who practiced in private practice, community, hospital and specialist clinics held similar ideas about intended outcomes for childhood obesity management. All of them strongly emphasised the importance of changing health behaviours within families:

Let's just not focus on the weight so much. That's not what your interest is. Let's just focus on getting healthy for the whole family. Yeah, sometimes the goal is not

always about weight loss. I feel like I'm successful if I can get them to make a healthy lifestyle change in general and reduce the risk of diabetes or high blood pressure in kids, and if I can sort of get them to stabilise their weight. We do expect kids to increase as they get older, but if we can get them to not increase large amounts, because we do know that growth at certain periods of time will be slow (HP10, Community Dietitian).

For HP10, the focus on changing health habits was a long-term strategy for preventing the development of comorbidities and slowing or halting weight gain. Despite the fact that many health professionals were adamant about moving away from weight as a main outcome measure, modest weight decreases in certain cases were still considered beneficial to the health of the child. Weight loss was considered healthy if achieved through families adopting healthier, sustainable habits:

Our aim is not necessarily to return children to a 'normal weight'. Ours' is to start the trajectory towards health. But even like a five percent weight loss can be life transforming for some people at any weight. There's taking off, if you're 100 kilograms, getting down to 90 or 95 kilograms can be really good.... We're not necessarily aiming for someone to be slim. We are aiming for people to be healthier, fitter, less stigmatised, happier people, at the end (HP15, Tertiary Care Paediatrician).

HP15 who worked within a service specialising in childhood obesity, shared similar aims to HP10; describing them as a redirection of families towards health rather than "returning children to normal weight". However, she also mentioned how in cases of severe obesity (as suggested by children of 100 kg), a five- or ten-kilogram weight loss "can be really good".

While all the health professionals appeared to support focusing on changing health behaviours as an outcome, some had very specific ideas around why families struggled with food and how to address these issues to encourage better health behaviours. One such idea was around "relationships with food". Around half of the health professionals (mostly dietitians) spoke about how their treatment of childhood obesity involved improving families' relationships with food:

I'm really open with my families when I start working with them that if they're going to work with me, the focus isn't going to be on weight. It's actually going to be on building health behaviours. It's going to be on how we feel, and getting back to enjoying food, and not having that battle with food. I feel like this is a way that, no matter what happens with that child's weight, whether it stabilises or not. The idea is that the weight would, at the very least, stabilise. They're going to be gaining skills that will create better health outcomes for the future for them (HP20, Private Practice Dietitian).

HP20 spoke about how she tried to achieve her intended health outcome of "building health behaviours" around emotional reactions to food; particularly focusing teaching families how to enjoy food rather than "battle" with it. Improving relationships with food was an especially popular treatment focus and outcome introduced by most dietitians during these interviews.

What was most important about the discussions around intended health outcomes was the health professionals' movement away from using weight as a sole indicator of childhood obesity treatment success and their support of introducing and improving sustainable health behaviours. In this sense, the health professionals approached treatment with a long-term view of childhood obesity. They believed treatment should achieve change to not only protect against further weight gain but to prevent any additional health issues that may be associated with families' current health habits.

4.8 Chapter summary

The current study captured the perceptions and experiences of the health professionals' interactions with childhood obesity. The analysis revealed the health professionals conceptualised childhood obesity as a developmental issue of accelerated weight gain that was caused by a range of complex interactions between individual genetic, psychological, environmental and cultural factors. The participants acknowledged this excess weight had both short and long term social and biological impacts on child health; and believed they played an integral a role in its management.

The health professionals shared similar perceptions of their roles in the clinical management of childhood obesity including that they should be responsible for diagnosing, assessing, referring, educating and helping families make changes to

improve, not just the health of the child, but the health of the family. It was evident that, while all the health professionals believed they had clinical obligations to obese children, they found childhood obesity management fraught with barriers; including problems engaging families and working within an unsupportive and under-resourced health infrastructure and stigma. The complex interaction of psychology, environment and social dynamics were family factors that health professionals felt ill-equipped to navigate due to a lack of training, fragmented funding and service delivery.

Funding dictated service capacity and was the main barrier to service delivery amongst the health professionals. Few services had the funding or capacity to offer consistency of care to children with obesity because funding models forced services to prioritise higher risk patients. The participants emphasised the belief that addressing the complexity of childhood obesity required additional resources, capacity and skills especially in the public sector. Those working in hospital settings stressed the frantic, infrequent and inadequate level of care they were able to provide obese children and their families; and those working in out-patient clinics serviced by allied health staff reported insufficient funding to keep up with their caseloads.

When intended outcomes were addressed, the health professionals emphasised a need to move away from weight as a main outcome measure of childhood obesity management. They believed child weight should be monitored but not the primary measure of a successful intervention. Their interventions focused on creating sustainable behaviour-changes and humanising the experience of weight management for obese children and their families.

Finally, while the health professionals experienced great frustration in their clinical experiences managing childhood obesity, ultimately, they did not blame children or parents for their misfortune. Instead, they expressed empathy for the children and families who they felt, generally, were doing the best they could. Despite fighting the "uphill battle" of childhood obesity in an unsupportive environment, the health professionals felt they had a moral and professional obligation to address these cases to the best of their ability. The findings from this study suggests the health professionals believe the current health infrastructure and environment neglects the clinical management of obese Australian children.

5 Discussion: Interpreting health professionals' perceptions and experiences of childhood obesity management

5.1 Introduction to Discussion

The studies presented in this thesis aimed to explore and describe health professionals' and parents' perceptions of childhood obesity management from their experiences within the context of paediatric weight-management. The purpose of this chapter is to position the findings from Study 1 within the context of the contemporary literature. The structure and content of the discussion are centred around the main findings that contribute to the existing literature. These areas relate to:

- How health professionals conceptualised childhood obesity: Identification of the problem, the concept of childhood obesity as a disease, causal factors of childhood obesity, whether it requires intervention
- Perceptions around health professionals' roles in management (diagnosis, referral, assessment and treatment) and their current experiences in trying to fulfil these roles

The participants' experiences with diagnosis, referral, assessment and treatment will each be displayed in the context of barriers to management, facilitators of management and implications for management.

5.2 How health professionals conceptualise childhood obesity

My research revealed that health professionals conceptualised childhood obesity through three elements of thought:

(i) Identification of what childhood obesity *is*
(ii) How childhood obesity is caused
(iii)Why they believed it required intervention.

The findings of the present study have, to some extent, features that are parallel to previous findings regarding the attitudes and beliefs among healthcare professionals regarding children with obesity (Isma et al., 2012).

5.2.1 Identification of the problem

Within Study 1, health professionals acknowledged childhood obesity was a health condition in which excess weight/adiposity contributed to poor short- and long-term health outcomes (Dettori et al., 2009; Hayden et al., 2009; L. A. King et al., 2007; O'Donnell et al., 2017). All the health professionals understood childhood obesity was associated with negative mental health consequences both in the short and long term.

While the analysis showed the majority of health professionals in Study 1 acknowledged excess weight was strongly associated with medical consequences (Barlow & Dietz, 2002; Franc et al., 2009; Gies et al., 2017), it also revealed a small group of health professionals who did not believe childhood obesity or obesity, in general, was a medical issue. It is interesting that the health professionals who rejected childhood obesity as a medical issue were all dietitians. Little research has examined dietitians' views on childhood obesity, and those that have, have looked at proficiency and confidence of dietitians in providing treatment rather than exploring perceptions (Nor Baizura, Zalilah, Ting, Ruzita, & Spurrier, 2014; Raaff, Glazebrook, & Wharrad, 2015).

Most studies on health professionals' perceptions and experiences of childhood obesity assume health professionals already view childhood obesity as a medical issue. Few studies, if any, have reported how health professionals conceptualise childhood obesity: for instance, how they describe and perceive it in lay terms. Many, however, have reported how health professionals diagnose childhood obesity: whether they can identify obese children visually, or whether they measure BMI and weight circumference (Andersen et al., 2012; Bocca, Corpeleijn, Broens, Stolk, & Sauer, 2016; Hillman, Corathers, & Wilson, 2009; Mabry et al., 2005; Sesselberg, Klein, Connor, & Johnson, 2010; Sivertsen et al., 2008; Spurrier et al., 2006; Tarasenko et al., 2014). This finding is perplexing because while the dietitians who rejected the medical consequences of childhood obesity claimed they believed obesity was a social stigma issue, they also reported treating children for obesity.

These dietitians' perceptions of childhood obesity align with a weight-neutral paradigm commonly described as Health At Every Size (HAES). HAES has resulted from a philosophy of re-establishing the dignity of people with obesity which has arguably been lost in public discourses framing "obesity" as a moral failing of self control. The

movement is a response to body image stigma that is well recognised both by health professionals in my study and the greater literature surrounding obesity. While HAES' inclusive philosophy states people of all body shapes and sizes should have equal access to a "fulfilling and meaningful lifestyle," it also challenges some of the key science around weight and health (Penney & Kirk, 2015). For instance, HAES rejects the notion that excess adiposity poses significant risks of morbidity and mortality; that the costs of obesity extend to economic and health system burden; and that "healthy" eating behaviours can be achieved through "intuitive and mindful" eating (Bacon, 2018). The movement has been criticised for lacking stronger empirical evidence to support its rejection of the impact of excess weight on health and its use of "intuitive" eating techniques to improve eating behaviours. Interventions that have employed a HAES approach target participants' eating attitudes and practices, body satisfaction and health-related quality of life with improvements in each domain; however, participants' body weight and physical activity levels remain unchanged (Carbonneau et al., 2017; Dimitrov Ulian et al., 2018; Provencher et al., 2009). It has been argued that while ideological discourse is necessary to improve discriminatory behaviours towards people with obesity; empirical evidence is also needed to avoid potential harm (Penney & Kirk, 2015).

The choice to ignore evidence-based practice amongst health professionals is not new to the history of healthcare; clinicians do not always follow best-practice guidelines (C. M. Lee & Hunsley, 2015). The reasoning behind such decisions lies both personally and contextually between the health professionals' own beliefs and the variables of her external environment (C. M. Lee & Hunsley, 2015). Clinicians who believe their current practice is efficacious may not perceive a need to change their practice to comply with best-practice guidelines (C. M. Lee & Hunsley, 2015). The health professionals whose own philosophies of childhood obesity aligned with HAES were inclined to believe weight was not the focus of the intervention, but attitudes towards dietary behaviours and body image. This finding highlights a fundamental issue with "identifying the problem" within the health community as it suggests the "problem" is not perceived to be the same amongst everyone who is involved in childhood obesity management. The acceptance or rejection of childhood obesity as a weight-based issue underpinned the way in which the health professionals in my study conceptualised childhood obesity and subsequently influenced their perceptions of causes,

consequences and appropriate treatments (Harvey et al., 2002; Ogden & Flannagan, 2008; Ogden & Jubb, 2008).

5.2.1.1 The concept of childhood obesity as a disease

Whether childhood obesity is a disease was of particular importance to health professionals and contributed to how they identified it. The finding showing the polarisation of health professionals on the topic of whether or not they considered childhood obesity a disease reflects the debate being had between health institutions internationally. Currently, the World Health Organisation, the American Medical Association, the Childhood Obesity Task Force of the European Association for the Study of Obesity, the Canadian Medical Association and the World Obesity Federation are some of the organisations that recognise childhood obesity as a disease due to its chronic, relapsing nature and the severity of its impact as it progresses (Allison et al., 2008; Farpour-Lambert et al., 2015; Kyle, Dhurandhar, & Allison, 2016; The Lancet Diabetes, 2017; WHO, 2016). Australia's governing bodies have yet to classify childhood obesity a disease.

While the health professionals were clear about which side of the debate they stood, both believed a disease classification would impact on childhood obesity management in some way (Allison et al., 2008). Some believed a disease classification would improve stigma, free-up resources such as funding, increase the quality of research and development and force governments to take it seriously (Franc et al., 2009; Kmietowicz, 2019; Kyle et al., 2016; Swerissen, Duckett, & Moran, 2018; Visscher et al., 2017); this idea of classifying obesity as a chronic disease to improve access to funding will be discussed later in this chapter. A stance by Visscher et al is: when health professionals and policy makers fail to recognise obesity as a disease, strong action towards its treatment is inhibited (Visscher et al., 2017). Others believed classification as 'disease' would further stigmatise and alienate an already marginalised community because of the social implications of the word 'disease'. Furthermore, a small minority of participants believed that by classifying obesity as a disease, we ignore that individuals can have "metabolically healthy" obesity (Stoner & Cornwall, 2014). Little research has investigated public support for classifying obesity as a disease, bar one small study of a thousand people in the US which found a majority of participants supported a 'disease'

classification, particularly from people with higher BMIs (Rebecca M. Puhl & Liu, 2015).

5.2.2 Causal factors of childhood obesity as perceived by health professionals

Study 1 indicated the health professionals were aware of the complexity of causal factors to childhood obesity. They believed childhood obesity thrived in certain family contexts in which parenting efficacy shaped family habits, particularly in relation to diet and exercise. For instance, they perceived the impact of cultural and social changes on work-life balance hindered parents' abilities to provide healthy meals and opportunities for physical activity to their children, and contributed to a reliance on convenient, affordable foods that were easily accessible (Greener et al., 2010; Isma et al., 2012; A. E. Staiano et al., 2017). They explained how the environment responded to these needs by providing convenient, tasty, calorie-rich fast foods and sedentary screen technology, all of which were complicit in causing childhood obesity in Australia. Research indicates, health professionals from other countries have shared similar perceptions of how childhood obesity has eventuated to such an extent (Flynn et al., 2006; L. A. King et al., 2007; Sastre et al., 2019; Boyd Swinburn, Egger, & Raza, 1999; Traun, Flood, Meinen, Daniels, & Remington, 2016; Yarborough et al., 2012).

5.2.3 A need for intervention and understanding of clinical roles

Despite the health professionals' recognition of greater environmental, cultural and social contributors to the prevalence of childhood obesity in Australia, they each believed childhood obesity required intervention and that they had a clinical role to play. Most of the literature on health professionals' perceptions of childhood obesity report similar findings (Cole, Boyd, Vineyard, & Giblin-Scanlon, 2018; A. Robinson et al., 2013; Sakarya et al., 2018; Schalkwijk et al., 2016; Traun et al., 2016). Understanding how the health professionals perceived the causal factors of childhood obesity is important to understanding how they viewed their clinical roles in management and the type of treatment they applied.

Research exploring health professionals' perceptions of their role in childhood obesity management is consistent with the finding health professionals believe they have a clinical obligation to at least diagnose and bring awareness to the parent (Schalkwijk et al., 2016). However, the intensity of intervention health professionals believe they

should provide varies throughout the literature depending on practice setting and expertise.

For instance, primary care has been flagged in the literature as an ideal setting for managing childhood obesity (Barlow, 2007; Mazur et al., 2013; Seburg, Olson-Bullis, Bredeson, Hayes, & Sherwood, 2015; WHO, 2012); however, primary care practitioners largely do not believe they are well-enough resourced or trained to provide accurate assessment and management outside of diagnosis (Jelalian et al., 2003; Lesley A. King et al., 2007; L. A. King et al., 2007; McFarlane et al., 2009; O'Donnell et al., 2017; O. Walker et al., 2007). In contrast, dietitians see their own role in childhood obesity management as one of assessment and recommendations related to food behaviour (Ashby et al., 2012; Grace, 2011; Jonides, Buschbacher, & Barlow, 2002; MacDonald-Wicks et al., 2015; Nor Baizura et al., 2014; Nowicka, 2005).

5.2.4 Perceptions of effectiveness in clinical interventions

The findings indicated the health professionals from Study 1 believed they had roles and responsibilities to manage children with obesity when they presented. However, while all of them acknowledged they had a clinical obligation to address the weight issue, few had confidence in the efficacy of the treatment they were able to provide (Jacobson & Gance-Cleveland, 2011; M. A. Wake et al., 2013). This may be attributed to little progress being made in evidence-based management models that produce consistent and sustainable outcomes despite decades of dedicated research (Collins, Warren, Neve, McCoy, & Stokes, 2006; Ho et al., 2012; Oude Luttikhuis et al., 2009; Sabin et al., 2015; M. A. Wake et al., 2013).

The health professionals' experiences with treatment contributed to this view of inefficacy. For participants from Study 1, the range of barriers far outweighed the facilitators to carrying out their respective roles and providing optimal treatment, which will be discussed in the following sections.

5.3 Perceptions of clinical roles and experiences in childhood obesity management

Perceptions about clinical roles are important to understanding whether and how health professionals see their involvement in managing childhood obesity. Study 1 suggested childhood obesity management was a challenging area of practice for the health

professionals. The health professionals described their roles and experiences carrying out these roles in the context of four main categories of care:

- Diagnosis and referrals
- Assessments
- Intervention implementation
- Maintaining changes

The health professionals identified enablers and barriers in each of these categories that related to either family, society or health infrastructure. Implications of these enablers and barriers to childhood obesity management were identified by the health professionals in Study 1; and are contextualised by the greater literature.

5.3.1 Diagnosis and referrals

Diagnosis is fundamental to identifying and treating children with obesity (Reyes, 2015; M. A. Wake et al., 2013). However, diagnosis was not a role most of the health professionals in Study 1 reportedly fulfilled because most had managed childhood obesity after a paediatric referral for a weight issue. Study 1 participants largely believed diagnosis and referral were the key roles of general practitioners; whereas they perceived their role in childhood obesity management began with assessment and followed with either providing treatment or referring-on to another service.

Amongst Study 1 participants, there was a perception that primary care practitioners, namely, general practitioners, were absent from the equation. The health professionals from Study 1 did not feel general practitioners were fulfilling their role of screening and referring children with obesity, a perception supported by the greater literature which shows less than half of GPs screen, diagnose and refer children with obesity (L. Baur & Alexander, 2016; Cretikos, Valenti, Britt, & Baur, 2008; He, Piché, Clarson, Callaghan, & Harris, 2010; Reyes, 2015; Sesselberg et al., 2010; Sivertsen et al., 2008).

Studies from the Australian context mirror those of international studies showing the majority of GPs fail to diagnose childhood obesity (L. Baur & Alexander, 2016; Cretikos et al., 2008). For instance, results of one Australian study found GPs managed overweight and obesity only once per 58 encounters with overweight and obese children (Cretikos et al., 2008).

Some studies have also found that health professionals are more likely to discuss childhood obesity with patients and families if it has already been diagnosed (Barlow, Bobra, Elliott, Brownson, & Haire-Joshu, 2007; Klein et al., 2010).

5.3.1.1 Barriers of diagnosis and referral

Study 1 indicated the health professionals were limited in their abilities to provide referrals due to a limited availability of appropriate referral services. This finding is supported by additional literature reviewing the accessibility and availability of childhood obesity services in Australia (L. Baur & Alexander, 2016; Spilchak et al., 2008). Ineffective diagnostic and referral networks impact on health professionals' ability to diagnose and refer patients (Jelalian et al., 2003; Nelson, Vos, Walsh, O'Brien, & Welsh, 2015; Priester et al., 2016; Spilchak et al., 2008; Story et al., 2002; Turner et al., 2009). Referrals for childhood obesity appear to depend not only on health professionals' ability to diagnose but also on their familiarity with specialist services (Cretikos et al., 2008; L. A. King et al., 2007; Nelson et al., 2015). Additionally, the literature reports health professionals have also been reluctant to refer due to the potential cost of specialist services to families (L. A. King et al., 2007; Nelson et al., 2015; Sesselberg et al., 2010).

5.3.1.1a Insufficient childhood obesity services

The lack of paediatric weight management services in Australia means that only a small percentage of children with obesity can access tertiary weight management in Australia (Spilchak et al., 2008). The major clinics in Australia are located in large capital cities (i.e. Brisbane, Melbourne, Sydney, Perth), so regional cases are hindered by distance; meaning rural patients are disadvantaged by having to travel long distances for a twenty-minute appointment (Spilchak et al.). However, even within metropolitan regions, the specificity of criteria required to access tertiary childhood obesity services mean children without severe obesity or comorbidities are falling through the gaps. This translates to children missing opportunities for diagnosis and early intervention until their obesity becomes severe or a comorbidity develops (Children's Hospital Association, 2013; Spilchak et al., 2008).

While the Australian literature suggests a lack of specialist services to which primary care practitioners can refer, some health professionals in this study worked within

multidisciplinary specialist clinics struggled with receiving referrals from primary care practitioners. One of these clinics was located in the outer suburbs of Melbourne, while the other operated in regional Queensland.

Unlike the more prominent specialist clinics operating within the major cities, these services had no additional referral criteria besides BMI. These findings indicate, additional services may be available, but the promotion of services impacts on referrals from primary care.

5.3.1.1b Recognition and topic sensitivity

The issues raised around low diagnostic and referral rates by some of the health professionals in my study may be attributed to difficulties with recognition[15] and sensitivity around the issue of obesity (Cretikos et al., 2008; Jacobson & Gance-Cleveland, 2011; Redsell et al., 2011; Reyes, 2015; Spurrier et al., 2006). Research suggests across all practice settings and professions, health professionals find difficulty in raising the topic of childhood obesity due to the sensitive nature of the topic (Cretikos et al., 2008; Steele et al., 2011; Story et al., 2002). Studies have found other reasons health professionals fail to diagnose childhood obesity include fear of offending parents and consequently damaging the health professional-parent relationship (Barlow & Dietz, 2002; Franc et al., 2009; Isma et al., 2012; Nelson et al., 2015; Redsell et al., 2011; Steele et al., 2011; Turner et al., 2009; Wigton & McGaghie, 2001).

5.3.1.2 Enablers of diagnosis and referral

In line with Kroke and colleagues, self-referrals by parents was identified by Study 1 participants as a facilitator of diagnosis and initiation of childhood obesity treatment (Kroke, Strathmann, & Gunther, 2006). One study exploring parents' perceptions regarding enhancing enrolment of families in childhood obesity clinics found parents suggested self-referrals may be more indicative of readiness and motivation to begin treatment than those referred by health professionals (A. J. Perez et al., 2018). In Study 1, the health professionals reported parents' main motivation behind self-referrals was often peer-bullying, which is also evident in the wider literature (Davidson & Vidgen, 2017; Elliott & Bowen, 2018; Gillespie et al., 2015; Haugstvedt, Graff-Iversen,

[15] Recognition: identifying patients with obesity

Bechensteen, & Hallberg, 2011; Isma et al., 2012; D. Jackson, McDonald, Mannix, Faga, & Firtko, 2005; Debra Jackson, Wilkes, & McDonald, 2007; McKey & Huntington, 2005; Schalkwijk et al., 2015; Sharifi et al., 2014; A. E. Staiano et al., 2017; Turner et al., 2012). Peer bullying impacts on children's mental health, self-esteem and body image, particularly in overweight youth (Brixval, Rayce, Rasmussen, Holstein, & Due, 2012; Danielsen et al., 2012; Griffiths, Wolke, Page, & Horwood, 2006; Janssen, Craig, Boyce, & Pickett, 2004; Liang, Jackson, & McKenzie, 2011; Lucas et al., 2014; L. Moore, Harris, & Bradlyn, 2012). Parents have frequently showed more concern for childhood obesity over the immediate impacts of peer bullying than physical health impacts (Gillespie et al., 2015; Isma et al., 2012; D. Jackson et al., 2005; Debra Jackson et al., 2007; Lucas et al., 2014; McKey & Huntington, 2005; Turner et al., 2012).

While, most studies support the finding that parents' awareness of peer-bullying facilitates diagnosis and initiation of treatment, a handful of studies showed parents objected to a childhood obesity diagnosis as they felt discussing weight with their child, who was already being bullied for their weight, would do further harm (Gillison, Beck, & Lewitt, 2013; Tyler & Horner, 2008).

Additional research on childhood obesity diagnosis enablers show that measuring patients and calculating BMI are associated with increased likelihood of diagnosing childhood obesity (M. A. Wake et al., 2013). Unfortunately, the literature suggests most primary care practitioners, including paediatric primary care providers, do not calculate the BMI of their paediatric patients (Campbell, Bryson, Price, & Wake, 2013; H. R. Cygan, Baldwin, Chehab, Rodriguez, & Zenk, 2014; Sesselberg et al., 2010; Sivertsen et al., 2008).

Such examples support the notion of early diagnosis explicit in clinical management guidelines of childhood obesity worldwide. For chronic conditions such as obesity research suggest the earlier the diagnosis the higher likelihood of intervention success.

5.3.2 Assessment

The health professionals from study 1, believed assessment was one of their key roles in childhood obesity management (Krebs et al., 2007). They saw their role of assessment as determining the needs of each family in order to address the child's obesity (Krebs et

al., 2007; D. E. Wilfley et al., 2017). Despite being at the receiving end of referrals, most of the health professionals in Study 1 reportedly measured and calculated for child BMI. Most of the health professionals expressed confidence in their ability to assess and determine the underlying dietary and activity patterns in their patients' lifestyles (Dettori et al., 2009; Jonides et al., 2002; Wake et al., 2011). The health professionals also assessed children with obesity for underlying medical issues either contributing-to or as a result-of the child's weight. Calculating child BMI, screening for medical conditions, determining risk of co-morbidities and assessing diet and physical activity behaviours are outlined as "best practice" in clinical guidelines and recommendations relating to childhood obesity (Barlow, 2007; Jonides et al., 2002; D. C. W. Lau et al., 2007; Ministry of Health, 2016; NHMRC, 2013; NICE, 2014; Reilly, 2010; SIGN, 2010; Styne et al., 2017).

Behaviours that were commonly reported areas of assessment in Study 1 included screen time, discretionary food intake, juice and sugar-sweetened beverages, family-member meal preferences and mealtime dynamics (i.e. did families eat together or separately). Also important were parental feeding practices, whether restrictive or indulgent (van der Horst & Sleddens, 2017; Nelson et al., 2015). Some health professionals also explored how family dynamics shaped household food and activity behaviours (Jackie Blissett, 2011; A. Y. Chen & Escarce, 2010; Hecker et al., 1986; Hemmingsson, 2018; Miller, Miller, & Clark, 2018; K. Rhee, 2008; van der Horst et al., 2007).

A key element of assessment for the health professionals in Study 1 was the use of a family-based approach, meaning assessment not only focused on the habits of the obese child, but on the habits of the entire family; they believed the habits of the child were a reflection of family practices (Leonard H. Epstein et al., 2007; Leonard H. Epstein et al., 1994; L. Gibson et al., 2016; L. Y. Gibson et al., 2007; Golan, 2006; Golan & Weizman, 2001; Kitzmann Katherine, Dalton William, & Buscemi, 2008; Sung-Chan, Sung, Zhao, & Brownson, 2013; D. E. Wilfley, Balantekin, Epstein, Hayes, & Van Buren, 2018).

5.3.2.1 Assessment barriers

The main barrier to assessment reportedly experienced by the health professionals in Study 1 was insufficient consult time; they felt that the depth of assessment they needed to grasp an understanding of each child's specific case required more time than their consultation allowed. Insufficient consulting time is a common barrier to childhood obesity management reported by health professionals both in Australia and elsewhere (Barlow & Dietz, 2002; Findholt et al., 2013; Jelalian et al., 2003; McMeniman et al., 2011; Schalkwijk et al., 2016; Turner et al., 2009; O. Walker et al., 2007; Yarborough et al., 2012).

The depth of assessment required for a weight-management consultation requires far more time and interaction than that of a usual primary care consultation; time that has yet to be adequately reimbursed through appropriate funding measures (Barlow & Dietz, 2002; Findholt et al., 2013; Sesselberg et al., 2010; Slusser et al., 2011; Story et al., 2002; Andrew M. Tershakovec, Watson, Wenner, & Marx, 1999).

The health professionals in Study 1 believed assessments were one of the most important parts of their consultations with obese children because it distinguished the causes specific to each case (Kumar & Kelly, 2017; A. M. Sharma & Padwal, 2010). Study 1 participants emphasised the difference between families' lifestyles which varied the treatments the health professionals recommended.

Obtaining accurate assessments of barriers to healthy eating and physical activity, including those that are financial and cultural, is crucial to identifying specific behaviours to target for change (Dietz et al., 2015; Kumar & Kelly, 2017; Nader, Singhal, Javed, Weaver, & Kumar, 2014; Sallinen Gaffka, Frank, Hampl, Santos, & Rhodes, 2013). Other research on childhood obesity assessments have indicated assessing parent acceptance of diagnosis and motivation are critical to effective management (L. Baur, 2008; Breland et al., 2012; Casazza et al., 2013; Dietz et al., 2015; McCallum & Gerner, 2005). Less than half of the health professionals in Study 1 mentioned including parents' intention to address their child's weight as part of their intervention which may explain the difficulties they experienced around engaging families in treatment.

5.3.3 Treatment: Health professionals' intended outcomes of childhood obesity management

The health professionals from Study 1 predominantly discussed providing lifestyle interventions to their families with childhood obesity. Lifestyle interventions are a common type of treatment for childhood obesity that focus on improving diet and increasing physical activity with one of the primary outcomes being a reduction in child BMI (Ard & Miller, 2016; Gerards et al., 2012; Halberstadt et al., 2017; Ho et al., 2012; Knop et al., 2015; Schalkwijk et al., 2015).

The health professionals from Study 1 wanted to distance their treatment outcomes from focusing on weight as a main measure of treatment efficacy. Focusing on weight as a main outcome of childhood obesity interventions may be problematic for a range of reasons (Kuhl, Clifford, & Stark, 2012). Firstly, short-term weight loss in most cases is not conducive of long-term health status because some of the consequences of childhood obesity, such as type 2 diabetes, are not exclusively related to the excess weight so much as the behaviours that contribute to weight gain (Batsis, Huyck, & Bartels, 2015). Studies indicate interventions for childhood obesity may still be helpful even if BMI is not reduced (K. D. Hall & Kahan, 2018; Matheson, King, & Everett, 2012; M. Wake et al., 2013). Long-term lifestyle changes are likely to improve health even without significant weight loss (K. D. Hall & Kahan, 2018; Matheson et al., 2012; M. Wake et al., 2013),

Secondly, focusing on weight is a barrier to engaging families if parents do not think their child's weight is an issue (Banks, Cramer, Sharp, Shield, & Turner, 2014; Blackburn, Stathi, Keogh, & Eccleston, 2015; Bradbury et al., 2018; Brook, Cohen, Hakendorf, Wittert, & Thompson, 2014; Eckstein et al., 2006; Gunther, Guo, Sinfield, Rogers, & Baker, 2012; Isma et al., 2012; A. R. Jones et al., 2011; Kitscha, Brunet, Farmer, & Mager, 2009; Knight-Agarwal, Kaur, Williams, Davey, & Davis, 2014; L. Moore et al., 2012; Petricevic, Puharic, Posavec, Pavic Simetin, & Pejnovic Franelic, 2012; Phelan et al., 2015; E. Robinson & Sutin, 2016; Rune, Mulgrew, Sharman, & Lovell, 2015; Syrad et al., 2015; Toftemo, Glavin, & Lagerløv, 2013; Towns & D'Auria, 2009; O. Walker et al., 2007; Warren & Hunt, 2017). Weight is a sensitive topic for many people and making it the centre of interventions creates a disincentive

for those who are sensitive to it (Bradbury et al., 2018; Syrad et al., 2015; Toftemo et al., 2013).

Thirdly, even in instances when parents do accept their child's weight is an issue, focusing on weight as an outcome of intervention success can be detrimental to families' confidence, motivation and perceptions of whether treatment is worthwhile because children respond differently to treatment. Studies have shown families disengage with weight management services when their expectations of weight loss are not met (Banks et al., 2014; P. Morgan et al., 2016; L. J. Staniford, Copeland, & Breckon, 2018). The health professionals from Study 1 believed getting families to embrace new health behaviours was an indicator of a successful intervention. Other research indicates a need to measure other health-related outcomes to evaluate treatment effectiveness (Moens, Braet, & Van Winckel, 2010; Teixeira, Mata, Williams, Gorin, & Lemieux, 2012).

While health professionals from Study 1 primarily discussed behaviour change as a key indicator of intervention success, the wider literature suggests obesity treatment outcomes should also aim to address anthropometric and psychosocial status (Batsis et al., 2015). Children's health-related quality of life (HRQOL), self-esteem and body dissatisfaction are important mental health indicators that should be considered during the evaluations of interventions (Morrison et al., 2015; Vos, Huisman, Houdijk, Pijl, & Wit, 2012; Wafa et al., 2016; M. Wake et al., 2013; Wille et al., 2008). Non-anthropometric biomedical markers like blood pressure and/or cardiometabolic risk factors may also be more useful than weight to track health progress amongst obese children (S. E. Hampl et al., 2016; Sabin et al., 2010; The Look Ahead Research Group, 2010). Most of the health professionals in my study believed improving the psychosocial status of children was important but few knew how to address and measure it.

The health professionals' intentions to focus treatment away from weight was guided by their acute awareness of the sensitivity around weight (Ata, 2016; Bayer, 2008; L. Gibson, Byrne, & Zubrick, 2013; Jennings et al., 2015; Kyle, Stanford, & Nadglowski, 2018; S. Lewis et al., 2011; MacLean et al., 2009; Muennig, 2008; Phelan et al., 2015; R. Puhl, Peterson, & Luedicke, 2013; Rebecca Puhl & Suh, 2015; Rebecca M. Puhl & Chelsea A. Heuer, 2009; R. M. Puhl & C. A. Heuer, 2009; R. M. Puhl & Heuer, 2010;

Sikorski et al., 2011; Stevens et al., 2016; Thomas, Hyde, Karunaratne, Herbert, & Komesaroff, 2008; Tomiyama et al., 2018; Voigt, Nicholls, & Williams, 2014). Focusing management of childhood obesity around families' health behaviours may be key to increasing engagement and prolonging the sustained effects of interventions (K. D. Hall & Kahan, 2018; S. Hampl et al., 2013; Matheson et al., 2012; P. Morgan et al., 2016; J. A. O'Dea, 2005; J. A. Skelton, Irby, & Geiger, 2014; Spear et al., 2007; Spence et al., 2017).

5.3.3.1 Engagement barriers

For weight management services to be effective they need to generate meaningful outcomes and promote high participant engagement (Fry, 2008; Nobles, Perez, Skelton, Spence, & Ball, 2018). One of the key barriers the health professionals in Study 1 described was contributing to their management failures was attrition. The health professionals described how families' failures to complete interventions (i.e. attend the full number of consultations recommended by the health professional) made achieving successful outcomes difficult; however, paediatric patients who engaged more with services demonstrated a halt or reduction in weight gain (S. E. Hampl et al., 2016).

The health professionals described experiencing attrition or disengagement of families with childhood obesity management at all stages of intervention; meaning patient drop-out could occur at any time during the enrolment stage (initial contact) (Barlow & Ohlemeyer, 2006; Kitscha et al., 2009; A. M. Tershakovec & Kuppler, 2003; S. E. Walker et al., 2012; N. A. Williams et al., 2010; M. Zeller et al., 2004) and ongoing treatment (Dolinsky, Armstrong, & Ostbye, 2012; Savoye et al., 2011; J. A. Skelton, DeMattia, & Flores, 2008).

Across the international literature, attrition is one of the most common challenges clinicians of children with obesity face (Avis, Ambler, Jetha, Boateng, & Ball, 2013; Chisholm, Alexander, Henderson, & Barnes, 2019; M. P. Cote et al., 2004; S. E. Hampl et al., 2016; Kwitowski, Bean, & Mazzeo, 2017; Oude Luttikhuis et al., 2009; J. A. Skelton & Beech, 2011; Joseph A. Skelton, Irby, Beech, & Rhodes, 2012; Spence et al., 2017; L. J. Staniford et al., 2018). Many studies report attrition rates of greater than 50% (Children's Hospital Association, 2013; M. P. Cote et al., 2004; Sarah Hampl, Paves, Laubscher, & Eneli, 2011; J. A. Skelton & Beech, 2011; J. A. Skelton et al.,

2008; Joseph A. Skelton et al., 2012; M. Zeller et al., 2004). Furthermore, attrition in non-discriminate across treatment settings, meaning drop-out rates; however, literature suggests attrition from paediatric weight management services is higher for patients of vulnerable demographic backgrounds, namely, patients from marginalised communities, lower SES, rural patients (A. M. Tershakovec & Kuppler, 2003; Andrew M. Tershakovec et al., 1999; M. Zeller et al., 2004).

Study 1 health professionals' descriptions of their engagement difficulties included: enrolment ("getting patients through the door"); adherence ("getting families to make changes") and maintenance ("getting families to maintain changes")(Nobles et al., 2018).

5.3.3.1a Attrition during the enrolment phase: "Getting families through the door"

Attrition was perceived by the health professionals in Study 1 as a major barrier to patient engagement and childhood obesity management success. The two predominant contributors to attrition during the enrolment phase raised by health professionals from Study 1 included: restricted patient access to services and parental perceptions. The health professionals from Study 1 discussed access barriers, such as scheduling, clinic hours, location and transportation, as other common reasons they assumed families chose not to attend paediatric weight management sessions (Barlow & Ohlemeyer, 2006; M. P. Cote et al., 2004; Grow et al., 2013; S. Hampl et al., 2013; Kitscha et al., 2009; A. Perez et al., 2015; Sallinen Gaffka et al., 2013).

These findings are supported by research that suggests inconvenience, such as the access barriers described by the participants of Studies 1 and 2, risk and discomfort discourage patient participation (Fry, 2008; Kyoung Kon, Lin-Lee, Caterson, & Harris, 2015).

5.3.3.1b Stigma and weight bias

—[The] stigmatisation of obese individuals threatens health, generates health disparities and interferes with effective obesity intervention efforts. (R. M. Puhl & Heuer, 2010)

The health professionals acknowledged childhood obesity was a very stigmatising and sensitive topic and often parents felt guilty or blamed for their child's diagnosis, which

impacted on their desire to engage with weight management services. The health professionals from Study 1 believed stigma was one of the main barriers to parents' engaging with paediatric weight management services. They believed this fear arose from previous adverse interactions with health professionals regarding their child's weight and feared being blamed and chastised for poor parenting.

High levels of bias have been observed even among clinicians specializing in obesity-related issues. Some studies have shown anti-fat (i.e. 'fat people are worthless') sentiments have increased over time (Tomiyama et al., 2018; Tomiyama et al., 2015). The nature of healthcare provider bias includes agreeing with negative stereotypes of patients with obesity, including those implying fat people are 'lazy', 'weak-willed', and 'bad', deserve less respect, and are a 'waste of time' (Phelan et al., 2015).

In the context of clinical management of childhood obesity, the literature highlights children and their families often experience stigma from health professionals (Amy, Aalborg, Lyons, & Keranen, 2006; Bertakis & Azari, 2005; R. M. Puhl & C. A. Heuer, 2009). In many cases, health professionals are complicit in reducing the quality of care based on this weight stigma (Phelan et al., 2015). For instance, correlations have been found between weight bias and the amount of time a physician would spend with a patient —the heavier the patient is, the less time spent (Hebl & Xu, 2001). These negative interactions often result in patients avoiding necessary screenings and treatments for fear of negative reactions from health professionals (Amy et al., 2006; R. M. Puhl & C. A. Heuer, 2009; Joseph A. Skelton et al., 2012). Thus, health professionals' concern for stigma being a major risk for disengagement of families with weight management services is well-justified.

Because the health professionals from Study 1 were concerned about stigma experienced by parents and their obese children, they took precautions to use non-judgmental language in consultations. All the health professionals expressed empathy towards children with obesity and their parents and avoided placing blame. Some even asked for children to leave the room during consultations because they were worried about the implications of discussing weight in front of the child. These precautions have also been documented in studies with other stigma-conscious health professionals and appears to be a growing area of concern for practitioners in childhood obesity management.

5.3.3.1c Non-recognition and scepticism

Other parental perceptions that Study 1 health professionals believed contributed to attrition during the enrolment stage include, the parents' failure to recognise the child's weight issue; and beliefs that management would be ineffective or harmful for their child. The true extent of paediatric weight management services offered in Australia is unknown; however, the main tertiary care clinics are typically located within major cities, making access to appointments difficult for families who live in regional and rural areas (L. Baur & Alexander, 2016). Furthermore, operating hours are generally within normal business and school hours making attending consultations inconvenient for both working parents and children.

5.3.3.1d Expectations of parents

Some of the health professionals mentioned parents occasionally arrived to weight management consultations under the impression that the child was the focus of the intervention and were surprised by the family-based approach.

5.3.3.2 Adherence: "Getting families to make changes"

Health professionals and parents from Studies 1 and 2 identified two main barriers that impacted on family adherence to treatment recommendations: family dynamics and work/life balance (Zhang, Hurtado, Flores, Alba-Meraz, & Reicks, 2018). Despite taking a family-approach to childhood obesity management, the health professionals from Study 1 experienced several issues with whole-of family engagement due to family dynamics issues. Additionally, the health professionals also felt incompetent in managing these family dynamics and believed it was beyond the scope of their practice to address these issues. These findings are consistent with the wider literature reporting on barriers to childhood obesity management which will be discussed in the following sections.

5.3.3.2a Family dynamics: Child resistance and lack of family support

The health professionals from Study 1 experienced challenges managing family dynamics, particularly in relation to barriers to adherence. Changing family behaviours inevitably affects the family dynamic and commonly results in stressful interactions

between family members imposing the intervention and those opposed to it (Ackerman, Kashy, Donnellan, & Conger, 2011).

The most common resistance from children reported by health professionals in my study and in the wider literature is related to reducing the consumption of discretionary foods and screen time (Bhushan et al., 2018; Morawska & West, 2013).

Improving parent-child relationships to facilitate better communication is important to increase parenting efficacy (S. Cyril, Halliday, Green, & Renzaho, 2016; Ho-Jui & Ming-Chin, 2014; Huilan, Li Ming, Rissel, Flood, & Baur, 2013; Luna, Villegas, Hannon, Fiese, & Teran-Garcia, 2018; Vereecken, Legiest, De Bourdeaudhuij, & Maes, 2009). Family-based interventions that focus on parenting skills may improve adherence to suggested lifestyle changes (Marvicsin & Danford, 2013; Morawska & West, 2013).

Support from other family members was another issue listed by both the health professionals and parents involved in my research.

The health professionals from Study 1 spoke about engaging primarily with mothers of the household, while fathers were often not present during consultations. Families in which caregivers are both supportive of the health changes have a significantly higher likelihood of improving their child's BMI than families in which only one caregiver is motivated (Brophy, Rees, Knox, Baker, & Thomas, 2012; Rachel L. Vollmer, Adamsons, Gorin, Foster, & Mobley, 2015; Wake, Nicholson, Hardy, & Smith, 2007; Wong et al., 2017). Therefore, health professionals should try to engage all caregivers to enhance the consistency of change within the household (S. Cyril et al., 2016; Kuhl et al., 2012; Thompson, 2010).

5.3.3.2b Maintenance: Getting families to maintain changes

The health professionals' perception of childhood obesity management was best described by one of the participants as "constantly fighting an uphill battle". This metaphor described the external environment as the steep hill health professionals and parents had to constantly climb to overcome the convenience, accessibility and affinity to unhealthy foods and screen time. The issue of maintenance is perhaps the biggest

challenge for health professionals who manage to engage families in paediatric weight management (Butland et al., 2007a; Hübner et al., 2016).

One of the intended outcomes of childhood obesity management is sustained family behaviour change (Nobles et al., 2018; Sarlio-Lähteenkorva, 2007). Unfortunately, most childhood obesity interventions fail to achieve sustainable weight loss and behaviour change in their participants (Deforche, Bourdeaudhuij, Tanghe, Hills, & Bode, 2004; Halvorson & Skelton, 2012; Matheson et al., 2012; J. A. Skelton & Beech, 2011; J. A. Skelton et al., 2014; Denise E. Wilfley et al., 2007). The health professionals from Study 1 discussed two main issues in relation to maintenance of weight management: first, attrition during ongoing treatment; and, second, maintenance of behaviour and weight changes post-intervention.

We turn, then, to *attrition during ongoing treatment*. A commonly experienced barrier reported by health professionals in Study 1 was attrition during ongoing childhood obesity treatment which manifest as families initiating treatment, then failing to attend follow-up consultations. This challenge is frequently experienced in childhood obesity management literature. Many families fail to attend the recommended number of consultations or sessions with health professionals. More than 25 clinical contact hours are recommended for children with obesity (Whitlock, Connor, Williams, Beil, & Lutz, 2010).

One of the issues around behavioural change and weight loss maintenance in families with childhood obesity is that many families fail to attend the recommended number of consultations or sessions with health professionals. More than 25 clinical contact hours are recommended for children with obesity (Whitlock et al., 2010), yet few families who make initial engagement with weight management services will complete the minimum suggestion of 25 clinical contact hours (Avis et al., 2013; Tremblay et al., 2016). Retention of families in childhood obesity interventions is extremely poor with most interventions losing more than half of their participants between enrolment and completion (Avis et al., 2013; Tremblay et al., 2016; Whitlock et al., 2010). In addition to frequency of contact hours, the length of intervention also appears important to maintenance of behavioural change and weight loss. Interventions that run for twelve months or more consistently show better results for retention of behavioural change and weight loss 6- and 12- months post intervention than interventions of six months or less

(Deforche et al., 2004). Studies have shown an inverse relationship between intervention length and BMI, meaning, longer studies generally show better outcomes for child weight and behaviour change (Mihrshahi et al., 2018; Weihrauch-Blüher et al., 2018).

Next, we consider *maintenance and weight changes post-intervention.* Despite the fact that interventions that last more than a year have better outcomes than those of six months or less, all interventions see relapse in their participants when they cease (Weihrauch-Blüher et al., 2018). Study 1 health professionals stressed the importance of ongoing support post-intervention for participants to maintain successful intervention outcomes.

"Modern living" creates ongoing challenges for the maintenance of behaviour changes initiated by childhood obesity management (Brown et al., 2015; Butland et al., 2007a; Lucas et al., 2014; Sarlio-Lähteenkorva, 2007). Most childhood obesity interventions only last a set period of time due to funding and service structure (most interventions last between 6 and 24 months ((Mihrshahi et al., 2018; Weihrauch-Blüher et al., 2018; D. E. Wilfley et al., 2017), but most families require ongoing support to sustain their newly adapted dietary and physical activity habits (Brown et al., 2015; Deforche et al., 2004; Denise E. Wilfley et al., 2007). Data on predictors of long-term weight loss maintenance is limited (Brown et al., 2015). However, an ecological outlook on obesity suggests changing the environment rather than focusing on the individual's ability to maintain healthy behaviours in an obesogenic environment could result in better weight maintenance (Babooram, Mullan, & Sharpe, 2011; Butland et al., 2007a; O'Dea, 2008; Reidpath, Burns, Gerrard, Mahoney, & Townsend, 2002; Sarlio-Lähteenkorva, 2007; Waters et al., 2008). Healthy environments encourage healthy dietary and activity behaviours. This is particularly important for bridging the gap in health in vulnerable populations who have fewer resources to make health-promoting choices (Daraganova, Australian Institute of Family, & Thornton, 2013; Darmon & Drewnowski, 2015; Hemmingsson, 2018; Kwitowski et al., 2017; Lissner et al., 2016; J. O'Dea et al., 2014; Oddo, Nicholas, Bleich, & Jones-Smith, 2016; Offer et al., 2010; T. G. Smith, Stoddard, & Barnes, 2009).

In addition to the built environment, children's mental health also plays a role in weight gain post-intervention. Studies exploring reasons for relapse post-intervention have

found weight-related teasing contributes to emotional eating which impairs long term weight loss maintenance (Hübner et al., 2016; Porter, Bean, Gerke, & Stern, 2010).

5.3.3.4 Parent motivation

The health professionals from Study 1 talked about how parents' motivation for change was and important enabler of engagement and improved the likelihood of parents adhering to treatment recommendations (Gunnarsdottir, Bjarnason, Njardvik, Olafsdottir, & Craighead, 2011). For behavioural lifestyle interventions for childhood obesity, motivation is key to behaviour change (Andres, Saldana, & Gomez-Benito, 2009; Bibeau, Moore, Caudill, & Topp, 2008; Crabtree, Moore, Jacks, Cerrito, & Topp, 2010; 2010; Sealy & Farmer, 2011; Sutton et al., 2003).

5.3.3.4a Supportive family

Health professionals in Study 1 and the literature suggest family-member cohesiveness and agreement towards changing health behaviours is helpful for assisting with motivational and practical barriers

How members of a family function impacts on the health-related behaviours of that family (Brophy-Herb et al., 2018; S. Cyril et al., 2016; L. Y. Gibson et al., 2007; Hemmingsson, 2018; K. Rhee, 2008). Family function refers to how parents manage daily routines, parenting, communication and emotional connection with their children impact on child development and behaviours (K. Rhee, 2008). Furthermore, relationships between parents and shared roles of parents in the family unit impact on family function. Studies found children of families with fathers who were more involved in childhood obesity treatment and engaged with feeding and activity roles in the household positively impacted on child BMI (Ackerman et al., 2011; Bayley, Wallace, & Choudhry, 2009; Brophy et al., 2012; Fraser et al., 2011; Freeman et al., 2011; Mallan et al., 2014; Panter-Brick et al., 2014; Stein, Epstein, Raynor, Kilanowski, & Paluch, 2005; Rachel L. Vollmer, 2018; Zhang et al., 2018).

5.3.4 Health professionals' perceptions of health system barriers to childhood obesity management

5.3.4.1 Limited or no access to MDT team

The health professionals in this study highlighted a need for a multidisciplinary approach to childhood obesity management; which supported a perception that optimum management was difficult to achieve working alone. A large body of international literature recognises multidisciplinary care as "best practice" in childhood obesity management (Bianchini et al., 2013; Bocca, Corpeleijn, van den Heuvel, Stolk, & Sauer, 2014; Findholt et al., 2013; Foster, Farragher, Parker, & Sosa, 2015; Halberstadt et al., 2017; S. E. Hampl et al., 2016; Hollinghurst, Hunt, Banks, Sharp, & Shield, 2014; Maggio et al., 2013; Montesi et al., 2016; Nemet et al., 2005; Nemet, Oren, Pantanowitz, & Eliakim, 2013; Nowicka, 2005; Poitou et al., 2018; Ross, Kolbash, Cohen, & Skelton, 2010; Schalkwijk et al., 2016; Sothern, von Almen, Schumacher, Suskind, & Blecker, 1999; Spear et al., 2007; Vignolo et al., 2007; Vos et al., 2012; Wake et al., 2012b; Walsh, Palmer, Welsh, & Vos, 2014; Denise E. Wilfley et al., 2017). Health care delivery for chronic conditions produces better outcomes when provided through a team-based approach (Australian Health Ministers' Advisory Council, 2017; Leonard H. Epstein et al., 1994; Milani & Lavie, 2015; Montesi et al., 2016; Nemet et al., 2013; Ross et al., 2010; Sothern et al., 1999; Vos et al., 2012). However, the health professionals from Study 1 claimed access to multidisciplinary care is limited; a claim that is supported by the wider Australian literature (2017; L. Baur & Alexander, 2016; Croyden et al., 2018; Kyoung Kon et al., 2015; B. Y. Lee et al., 2017; McDonald, Harris, Cumming, Powell Davies, & Burns, 2008).

The lack of a coordinated multidisciplinary approach reported by health professionals is also reported in the recent National Strategic Framework for Chronic Conditions; which states that amongst challenges patients often experience "a fragmented system, with providers and services working in isolation from each other rather than as a team" and "uncoordinated care" (Australian Health Ministers' Advisory Council, 2017).

Many care models have called for interventions to take place in a primary care setting; however, the reluctance of GPs to engage in the weight management of their paediatric patients is evident in almost all studies that assess primary care involvement (Australian Health Ministers' Advisory Council, 2017; Bocca et al., 2014; Sim et al., 2016; van

Hoek, Feskens, Bouwman, & Janse, 2014). While GPs are well-placed to screen for childhood obesity their aversion and lack of capacity to treat these patients suggests that patients would gain greater benefit from a referral to a multidisciplinary service (Spear et al., 2007) that can accommodate for the complexity of interacting factors and frequency of contact necessary (McCallum et al., 2007; Sargent, Pilotto, & Baur, 2011; Whitlock et al., 2010) for a chronic relapsing condition (Farpour-Lambert et al., 2015; Golan, 2006; Golan & Weizman, 2001; Lloyd, Wolff, & Whelen, 1961).

National clinical guidelines acknowledge a "Multi-component lifestyle intervention is associated with successful outcomes…" (NHMRC, 2013)p.91; however, they warn, liaising with "other healthcare professionals and care providers" has "cost, availability and access issues associated with each visit". The Guidelines' mention of the costly nature of multidisciplinary identifies a cost-barrier associated with the optimal care of paediatric obesity in Australia (McDonald et al., 2008). It is clear as long as access to multidisciplinary care is hindered, adherence to best practice by health professionals is hampered and patient outcomes will continue to be limited (L. Baur, 2008; L. Baur & Alexander, 2016; Louise A. Baur, Wake, & Espinel, 2010; Dietz et al., 2015; Love et al., 2019; Mihrshahi et al., 2018; Oude Luttikhuis et al., 2009; Spilchak et al., 2008).

Improving access to multidisciplinary care would likely improve the quality of care and outcome of childhood obesity interventions ((2017; Foster et al., 2015; Halberstadt et al., 2017; McDonald et al., 2008; Montesi et al., 2016; Nemet et al., 2005; Nowicka, 2005; Poitou et al., 2018; Ross et al., 2010; Sothern et al., 1999; Spear et al., 2007; Spilchak et al., 2008; Vignolo et al., 2007; Vos et al., 2012; Wake et al., 2012a).

5.3.4.1 Lack of funding to increase service capacity

All participating health professionals in Study1 explicitly named a lack of funding as a key barrier to effective childhood obesity management in Australia. Funding was described as a key resource that affected service capacity, research and opportunities for training for health professionals.

Service setting (i.e. primary care clinic vs. private practice vs. specialist clinic) affects the quality of consultation because of time and resource restrictions (Silberberg et al., 2012; M. A. Wake et al., 2013). The complexity of childhood obesity consultations surpass the capacity of primary care settings because they require a multicomponent

approach (Australian Health Ministers' Advisory Council, 2017; Bocca et al., 2014; Sim et al., 2016; van Hoek et al., 2014). Some health professionals who worked in tertiary clinics mentioned the pressure the current funding model presented that forced health professionals to focus on quantity of consultations rather than the quality of service provided.

These descriptions from the health professionals in Study 1 describe how a lack of funding creates structural barriers to effective childhood obesity management. Structural barriers are related to the availability of services, how services are provided, service location and the organisational configuration of service providers (Priester et al., 2016). The structural barriers identified by the health professionals in this study support a perception that Australia's health system lacks the strategy and capacity to effectively manage childhood obesity (L. Baur & Alexander, 2016; Spilchak et al., 2008). Many of the barriers to effective childhood obesity management are rooted in the organisational and financial fragmentation of Australia's healthcare system (McDonald et al., 2008; Swerissen et al., 2018).

It is widely acknowledged that cost remains a barrier to childhood obesity management across the international clinical community (Lucas et al., 2014). While the economic case for government intervention in childhood obesity management is strong (Ananthapavan, Sacks, Moodie, & Carter, 2014; Colagiuri et al., 2010), funding around addressing childhood obesity has been inadequate to reverse current trends of prevalence (Louise A. Baur et al., 2010; Lubans, Jones, Okely, Salmon, & Baur, 2013).

In the Australian context, funding is based on different payment schemes like Chronic Disease Medicare payments Ananthapavan and colleagues suggest one explanation for a lack of government investment in prevention is a fear that attempts to regulate the "obesogenic environment" may distort markets, have unintended consequences and fail to achieve intended outcomes (Ananthapavan et al., 2014). Discontinuation of funding for interventions aimed to prevent and/or manage childhood obesity in Australia have also been reported as barriers to maintaining intervention outcomes (Croyden et al., 2018).

The restrictions associated with publicly funded services, such as specialised programs for specific populations (i.e. children with obesity) and lifetime or yearly limits on

access to care, create barriers to access. During the times of these funding lulls, many children with complex chronic conditions "fall through the cracks" of the health system and treatment initiation, engagement and retention rates in this population are notoriously low (Sterling, Weisner, Hinman, & Parthasarathy, 2010). Funding also differs by service setting (i.e. primary care clinic vs. private practice vs. specialist clinic) and affects the quality of consultation because of time and resource restrictions. The complexity of most childhood obesity interventions surpasses the capacity of primary care settings because they require a multicomponent approach (Australian Health Ministers' Advisory Council, 2017; Bocca et al., 2014; Sim et al., 2016; van Hoek et al., 2014). For instance, the depth of assessment required for a weight-management consultation requires far more time and interaction than that of a usual primary care consultation; time that has yet to be adequately reimbursed through appropriate funding measures (Barlow & Dietz, 2002; Findholt et al., 2013; Sesselberg et al., 2010; Slusser et al., 2011; Spivack, Swietlik, Alessandrini, & Faith, 2010; A. Staiano et al., 2017; Story et al., 2002; Andrew M. Tershakovec et al., 1999). Based on current funding models, launching childhood obesity primary care interventions with an emphasis only on monetary and temporal cost, and convenience may be damaging to the overarching goal of successful management (Jacobson & Gance-Cleveland, 2011). Furthermore, it may alienate the engagement of health professionals necessary to reverse this growing trend (D. E. Wilfley et al., 2017).

6 Findings Study 2 — Parent Case Studies

6.1 Introduction

The intention of Study 2 was to explore parents' experiences with childhood obesity management. This section presents case studies of four parents' experiences with childhood obesity services and implementing health professionals' recommendations of health changes at home.

The names of the participants and their children have been changed for the purposes of maintaining anonymity and privacy.

6.2 Description of the sample

All parent participants were mothers of children with obesity. The youngest child who had undergone clinical management for their obesity was 10 while the oldest of this sample was 23. All mothers had lived in Australia for over ten years. Three of the mothers were Australian-born, while one was born overseas. Three of the mothers identified their marital status as "married" while one identified as "divorced." All four of the mothers had completed secondary schooling while one was currently attending TAFE and another had completed a university degree. All four participants reported having a combined household income of less than 150,000 AUD with the lowest household income recorded at 25-50,000 AUD. Demographic information of parent-participants can be found below in Table 9.

Table 9: Demographic information of parent participants

Participant #	Caregiver	Child age (Years)	Participant Age (Years)	Years lived in Australia	Postcode	Place of birth (participant)	Place of birth (child)	Completed Education	Employment status	Household income (AUD)	Marital status
1	Mother	10	35-44	10+	3023	Australia	Australia	Secondary	Part-time	25-50,000	Divorced
2	Mother	14	35-44	10+	3337	Australia	Australia	TAFE	Full-time	125-149,999	Married
3	Mother	17	35-44	10+	3064	Overseas (outside Australia)	Australia	Secondary	Part-time	125-149,999	Married
4	Mother	23	45-54	10+	3136	Australia	Australia	Tertiary	Part-time	75-100,000	Married

6.3 Case studies

6.3.1 Case Study 1: Rachel

(Mother); Jasmine (daughter, 10 y/o)

Residential area: Outer western suburb of Melbourne, Victoria

Employment status: Working, part-time

Annual household income: $25,000-$50,000

Marital status: Divorced

Rachel is a 35-year-old mother of two, Jasmine, aged 10 and another older daughter (not named) aged 12. Rachel and her daughters live in the outer western suburbs of Melbourne, Victoria; and Jasmine has been attending a weight management clinic in Melbourne's West.

Rachel says Jasmine has always struggled with her weight from a very young age while her eldest daughter never seemed to have issues with overweight. Rachel mentioned the eldest had "a bit of a pot belly" but she does not consider her eldest to be overweight. She attributed this to both children's natural tendencies towards food. The eldest has always been relatively active and has never been fussed with food, while Jasmine has a large appetite, has a sweet tooth and always seems to want more food after meals.

Rachel: *My older one doesn't have a weight problem. Oh, well, she has a bit of a pot belly, but it's just a little thing, it's not overweight or anything like that. My oldest is skinnier than my youngest. The older one isn't that fussed about food and she's more active, like playing and things like that. Jasmine's always had a good appetite. She likes sweet things and she's always hungry even after meals.*

It appears Rachel recognises Jasmine is the only child of her two children with a weight issue despite her older daughter having a "bit of a pot belly." She perceives the main difference between Jasmine and her sister's weight is the difference in their relationships with food and activity. Rachel perceives Jasmine's sister "isn't that fussed" about food and is more active, while Jasmine has a sweet tooth and insatiable hunger.

Previously, Rachel was taking Jasmine to attend a weight management clinic in the city but had requested a referral to the one out west because it was closer to her home and work. When asked about how Jasmine ended up attending a weight management clinic, Rachel says she had taken Jasmine to the Children's Hospital for "something in her arm" and her weight was flagged as an issue. It is unclear whether the "thing in [Jasmine's] arm" was related to her weight but this interaction with health services resulted in an engagement with a hospital-affiliated outpatient weight management clinic.

Interviewer: *How did you end up getting the referral?*

Rachel: I don't know. One stage we were seeing the same people at [public hospital in the city] because she had something under her arm, a boil or a cyst from an infection. So, they sent us to the weight clinic there and then I think the GP sent us to the one, here, in [Melbourne's West].

Interviewer: *So, you were attending a weight management clinic in the city?*

Rachel: *Yes, but I asked them to, actually, send us somewhere out West instead of going all the way to the city.*

Interviewer: *Why did they send her to the weight clinic if she had something in her arm?*

Rachel: *It's gone now. But she's overweight. Really overweight.*

The above excerpt describes Jasmine's referral process into weight management services. The initial reason for contact with medical services was for an unrelated matter (something in her arm); however, a weight diagnosis was made by health professionals that lead to a referral. Rachel indicates attending the weight management clinic was inconvenient for her and she required a service that was closer, which was available.

While the current referral to the weight management clinic is the most recent engagement with weight management services, it was not the first time Jasmine's weight was flagged as a health concern. Rachel explains, they were originally from

Perth and Jasmine's weight was identified as a risk by a paediatrician when Jasmine was in hospital for an unrelated issue.

Interviewer: *Was this the first time Jasmine's weight has been mentioned to you?*

Rachel: *No. We are originally from Perth. She was over there, and they brought up her weight over there but she was too young to do anything about it. She was only 7 when they did it over in Perth and we came over here just to try to get her more help here.*

Rachel: *She's always been a bigger child.*

Interviewer: *Were you concerned about her weight before it was mentioned:*

Rachel: *Yes, but we didn't know how to go about getting help for her*

Interviewer: *How old was she when you started being concerned?*

Rachel: *About six and a half. What happened was, she was in hospital with burns in Perth, and one of the paediatricians said, 'she's a bit big. We'll send her to a weight clinic over here.' And, yeah, she was just too young to do it. She didn't understand all the stuff.*

This extract shows how Rachel was already aware of and concerned for Jasmine's weight at a young age but was unsure about how to begin addressing it. Her initial engagements with weight management services were unsuccessful, reportedly because Jasmine was "too young to understand all the stuff." This comment suggests Rachel views Jasmine as playing an active role in the intervention. It is unclear whether the weight management service, itself, or Rachel, alone, halted engagement with the weight service. However, in Rachel's view, Jasmine needs to be old enough to understand what is happening for the intervention to be worthwhile.

When asked about the current intervention, Rachel says she has found the sessions at the weight management clinic helpful in terms of educating her around checking labels, regulating portion sizes and making healthier meal choices. We see this in the next extract:

Rachel: *It's been helpful. I didn't really understand what foods were healthy and not at the time but I'm sort of learning still learning about different things. They taught me how to work on portion control and how to look at sugar intake on packaging. She has to do exercises. They also told me what not to do, like, give her sausages and stuff like that.*

Interviewer: *And with the changes they mentioned, are they just for her?*

Rachel: *No, they are for the whole family. We are all doing it.*

Rachel mentions the whole family is expected to comply with the prescribed changes by the weight management clinic. While Rachel is divorced and Jasmine primarily lives with her, she says Jasmine's father still plays an active role in her life and is supportive of the changes prescribed by the weight management clinic:

Rachel: *She lives with me. Yes. But dad sees her all the time.*

Interviewer: *Is he aware of her weight issue?*

Rachel: *Yes, and he's on-board with the food and other things.*

While Rachel reports her ex-partner is on-board with the changes, she finds the greatest barrier to implementing the meal and exercise changes resistance from Jasmine, who reportedly gets upset over being denied sweet foods and larger serving sizes:

Rachel: *I think the main problems I have are sticking to my guns and not giving into her when she cries for more food after meals or sweet things. You know with portion control just sticking to it. You know, no seconds. You know, that's the hardest part you know when they want more.*

This extract demonstrates Rachel finds it difficult to resist Jasmine's demands for more food but at the same time realises the consequences of not "sticking to [her] guns", "she'll just eat." The portion control and resistance to giving in suggests Rachel's natural instinct is to give in because she knows Jasmine wants more. Here we see the emotional struggle Rachel faces with resisting her natural urge to feed Jasmine when she is still hungry. She compensates this urge by turning her child to fruit or water, which are presumably healthier options than another serving of a meal or sweet things.

6.3.2 Case study 2: Melinda

(Mother), aged 35-44 of Joel (14 y/o boy)

Residential area: outer suburbs of Melbourne, Victoria

Employment status: Working, Full-time

Annual household income: $125,000-149,999

Marital status: Married

Summary: Melinda is a 38-year-old, married mother of three boys and has been accompanying her 14-year-old son, Joel to the weight management clinic for about ten months now. All three boys "are not thin by any means" according to their mother; however, she says Joel's youngest brother is even more overweight than Joel yet this has not been picked up by any healthcare professional and he has not received any referrals for weight management despite his mother mentioning he is more in need of this than Joel. Joel was not always overweight but became more so in the last few years, while his youngest brother has been overweight since about the age of 4 or 5. Melinda also struggles with obesity and is seeing various specialists for weight management and thyroid issues.

Joel was referred to Emergency at a hospital in Melbourne's West for a slipped growth plate that was caused by his weight. Melinda mentioned it is common for children with obesity. Following the surgery, Joel was referred to the weight management clinic, where he was linked to a dietitian and other health professionals, as she describes in the following:

Melinda: *We got referred here because Joel had a slipped growth plate which we didn't know what it was at the start. He just had pain. We kept going back to the doctor. After about 6 months, they did x-rays of him and he had a slipped growth plate and then he was referred to the Children's. We went to the Children's and they said take him to Emergency here, out West. So, from that, we came to Emergency. He was put into surgery to fix his hips. We've been referred to this automatically through the hospital because he's had the surgery and because it was caused by a slipped growth plate which is caused by overweight and obese*

adolescence. Or it's kind of predominantly in those sorts of kids. But being overweight, they also linked him with a dietitian and adolescent health — all that stuff.

Joel had had several encounters with GPs over his lifetime but none had mentioned his weight being an issue or provided a referral for his weight.

Melinda reported that sessions with the weight management clinic are helpful but struggles with implementing diet suggestions as she works long hours and her husband makes most of the home meals. Her husband is not on-board with lifestyle change. He cannot attend the sessions because he does shift work and the times do not suit his work/ pick up other kids from school schedule. Melinda describes the struggle:

Melinda*: I think the only other helpful thing would be to have a later appointment where my husband could also attend, so he could hear it because he needs to hear it and he has to have it rammed down his throat because he doesn't do very good with it. I have two other sons at home as well, so it makes it a bit hard. And especially working full-time, he's the one who does a lot of the cooking because he finishes work at 2. He works an earlier shift. So, it does make it really hard in that way to try to get through to him that he needs to do things a certain way or cook certain foods or not cook other foods and things like that.*

Interviewer: *So, he's finding implementing these changes difficult?*

Melinda: *Well, I find it difficult to get him even interested*

Interviewer: *Why?*

Melinda: *Because it means cooking more vegetables which he doesn't like or it means cooking healthier food which may take a bit more preparation and he can't be bothered. Things like that.*

Melinda takes time off work to accompany Joel to sessions at the weight management clinic. Melinda's husband does not want to make changes because he has never liked vegetables and complains that cooking healthier requires more meal preparation. The other children also do not like the changes to the family meals; especially the one who is least overweight. Melinda mentions the eldest (who she describes as "not as big as

the rest of us") is different because he is much more active (rides his bike everywhere/ is always doing something outdoors), while as the other two prefer "chilling" in front of the TV.

Melinda wishes her husband could attend the sessions at the weight management clinic with her. She feels if he could hear what the specialist suggests, rather than hearing it from her, he would be more inclined to comply with the lifestyle changes. Melinda thinks the most helpful part of the session is that Joel is hearing from the specialist what needs to change in terms of diet and physical activity and "taking responsibility" for his own lifestyle choices:

Melinda: *Sometimes it's more a matter of getting him to hear it. I know a lot of it from having seen dietitians over the years. I know a lot of it. It's more a matter of getting him to hear it; him to recognise his need to eat properly; the foods he should be eating and the foods he should be avoiding and that sort of thing.*

While she thinks one of the best parts of the service is the fact the health professionals are working directly with Joel, she also expresses frustration that often the paediatrician prefers to talk to Joel without Melinda's presence. This makes her feel "out of the loop" because often Joel will not tell her about what the Paediatrician spoke to him about. While she wants Joel to take responsibility for his own health, as a parent, she wants to know what is being discussed between Joel and the health professional:

Melinda*: I feel a bit left out sometimes with the adolescent health with the paediatrician because she sends me out of the room when she speaks to him- which I understand- because she wants to talk to him because he's 14 going on 15 so he has to start taking control for himself but I don't know what they're talking about either. I find that a bit frustrating because he doesn't always tell me what's said either. Other than that, I've had no problems with her.*

As far as the interaction Melinda has had with the clinic, her only disappointment with the health professional is this secrecy when she is "[sent] out of the room.

Other personal barriers she mentions are "willpower" and sometimes not having the energy to argue with the children over food choices. Convenience of unhealthy foods is a difficult temptation to manage. She says:

I find it easy to identify foods. My problem is my willpower and their willpower — that they want the foods and I can't be bothered arguing with them. Some days I'm just too tired to have the fight about food. On a normal weekday I'm out of the house by 7 o'clock and I don't get home 'til 5:30 and then often they'll have afterschool activities after that that they need to get to, so it's whatever's quick in a lot of cases.

In terms of service challenges, Melinda mentions services are far from home and at hours that do not suit working parents which makes it difficult for whole family to attend (especially her husband). She expresses the frustration that in order to attend, she must make work-sacrifices by taking a day off:

Melinda: *It's difficult for me because I'm not the only one doing the parenting, but I'm the only one that's attending these appointments*.

Interviewer: *Has your husband been to any of the appointments?*

Melinda: *He's been to one that was during the school holidays but normally he can't because he has to pick up the youngest one from school after work and kind of can't get back here. So, one of the biggest issues for me is he can't take time off at the drop of a hat. He works in cold stores and often can't doesn't have a lot of sick leave because his immunity is down and he needs it for when he's sick, so that all gets left to me. Yet, I'm trying to get him to implement it.*

For Melinda, getting her husband to comply with the lifestyle changes she has been prescribed in the weight management clinic is difficult. She feels there is a disconnect between the recommendations of the clinic and his responsibilities to provide meals for his children. She attributes much of this resistance to the fact he does not attend the weight management clinic because the hours of the clinic clash with his time at work and time he spends collecting the other children from school.

She says a clinic that is closer to home and would have more parent-friendly hours outside of the usual work schedule would benefit her likelihood of intervention success because then her husband could also attend the sessions. Melinda feels her husband does not respect the messages she returns home with from the weight management

clinic, however, she believes having a health profession speak directly to her husband would have a greater impact on his efforts at home.

Generally, she finds her sessions at the weight management clinic helpful but the clinic times and location inconvenient. She suggests the clinic could be more effective and have more reach if its hours were more suitable to working parents. Accessibility, reliability and affordability of services are also key to making attendance optimal.

6.3.3 Case study 3: Vivian

(mother); Danielle (daughter, 17 y/o)

Residential area: Outer western suburbs Melbourne

Employment status: Working, Full-time

Annual household income: $125,000-149,999

Marital status: Married

Summary: Danielle has been coming to the weight management service for about a year now. She received a referral from her GP after Vivian became concerned about her daughter's weight. Vivian mentioned that Danielle was undernourished as a child and was given several supplements to assist with her development as a baby. Vivian noticed Danielle began to put on more weight when she was in 1st grade but had not been concerned as she believed Danielle would eventually outgrow her weight. She mentions her eldest daughter is not overweight.

After having blood tests and an ultrasound they discovered that Danielle has a fatty liver and underactive thyroid that contributes to her weight gain. Danielle has not been prescribed and is not taking any medication for her thyroid; however, the endocrinologist recently prescribed metformin. Vivian does not know what the purpose of the metformin prescription is, but she reminds herself she would also like to check Danielle's blood sugar levels next time she has a consultation as she is concerned about Danielle developing type 2 diabetes which runs in the family. She recalls her mother and sister both suffered from overweight and T2D and her mother had to have toes amputated due to complications with her T2D. Vivian has lectured Danielle about her weight and concern for her developing T2D- she has a long life ahead of her and T2D will significantly impact on it.

Vivian mentions that Danielle is a "good eater"; she has always had a good appetite and enjoys her vegetables. Her biggest dilemma is getting Danielle to exercise. Vivian mentions fearing a strained relationship with her daughter as suggestions and pressure to exercise (on the home treadmill) is often met with resistance and an argument. Vivian appears very concerned about Danielle's diet and exercise and reports trying to

monitor it closely but she cannot control everything Danielle does anymore, especially when Danielle is out with friends and making her own food choices: "*She is seventeen and goes out with friends so of course I cannot be watching and monitoring her all the time."*

Vivian reports, in an attempt to address Danielle's weight, she buys foods that are healthy and has removed sugary drinks from her household. She believed sugary drinks were the main causes of her mother's and sister's diabetes and she fears, with Danielle's weight, she is also at risk of developing diabetes. She reports not always knowing what Danielle has for meals as she leaves the house prior to when Danielle gets up for school and returns often after Danielle has eaten dinner, but she thinks the main cause of Danielle's obesity is a lack of exercise:

I think the main difference between Danielle's weight and her older sister is the older one exercises a lot more; she eats a lot more junk food, but she exercises so it's not a problem.

Vivian shares stories of making herself as available as possible to accommodate Danielle's exercise opportunities: *"I say, tell me when you want to go to the gym. I will drop you or I will pick you up".*

She emphasises several times trying to get Danielle to exercise at home and the tension this creates. A barrier to managing her daughter's health is the resistance from Danielle to exercise. Throughout the interview she mentions how much strain this puts on their relationship because it always ends in fights. At times Vivian speaks in a hushed voice when Danielle comes in and out of the room: *"She doesn't like when I talk to anyone even friends or family about her weight issue. She is very sensitive about it".*

When asked about her husband, Vivian says *"of course, he is concerned too"*, but gives no examples of her husband being actively involved in trying to push Danielle to make the lifestyle changes.

Vivian says that her strained relationship with Danielle impacts on her communication with her daughter and that Danielle would not talk to her about her social life or her self-esteem. Despite this, Vivian has observed some signs that Danielle suffers from self-esteem and social acceptance issues. Vivian shares a story about the upcoming

School Formal. She says as a mother she was excited about her daughter getting dressed up to attend the formal but that when she mentioned it to Danielle she was not keen to attend:

She says many people are not going to attend, but I assume it has more to do with fitting into a dress and looking nice. Although she does enjoy makeup. She enjoys putting on makeup. Most young girls would be excited about attending a formal, but she seems to show no interest. I think if she were not so big, she would probably attend.

When asked about whether she was happy with the health services, Vivian says they are very helpful. The main issue is that she experiences is around accessing services during a time that is convenient. Currently, she has to take time off work once every four weeks and Danielle has to take time off school to attend.

Vivian shares a frustrating story of attending the weight management clinic one day and waiting two hours and having to put more money in the parking meter as the wait exceeded the two-hour parking meter. When she went to the front desk to enquire about how much longer they would need to wait as she needed to put more money in the meter, the receptionist replied that the clinician was running very behind schedule that day and would not be able to see them. Vivian and Danielle were offered a phone consultation or the option to rebook:

This is ok, but the problem is Danielle had an assessment that day and if you are absent for an assessment you need a medical certificate. Of course, I was preoccupied with trying to reschedule the appointment, so I completely forgot about asking for the certificate.

Ultimately, she was able to ring and get a medical certificate, but this service failure disregarded the time and effort both she and Danielle had to put in without having their expectations of service delivery met; and required them to find additional time to access the service again.

When asked about what might assist with Danielle's weight management, Vivian says she wishes there was a health programme or facility nearby that was part of the weight-management service at the hospital. Vivian feels that if Danielle had to attend exercise

sessions at the hospital (even twice a week) as part of her weight management, it would relieve some of the stress on their relationship whenever Vivian encourages Danielle to exercise. Vivian shares another story of sometimes checking Danielle's Fitbit to monitor whether she has been doing enough exercise.

Vivian also mentions perhaps having a psychologist involved would help with her relationship with her daughter around exercise. She says she wishes she could get some advice on how best to get her daughter to comply without having a fight. Vivian says her biggest concern is her daughter's future health as she watched her sister and mother struggle with diabetes and she is doing everything she possibly can to support her daughter making the suggested lifestyle changes.

6.3.4 Case study 4: Jan

(Mother); Jennifer (daughter, 23 y/o)

Residential area: Outer eastern suburbs of Melbourne

Employment status: Working, Part-time

Annual household income: $75,000-99,999

Marital status: Married

Jan is a married mother of three daughters. She reports the first and only time a health professional mentioned to her that her daughter, Jennifer, was overweight was at the age of two and a half, by a maternal and child health nurse. Jennifer was reportedly far above both height and weight for her age, but her weight was disproportionate to her height:

Jan: *They do a big check on children at two and a half years; and the health centre sister brought to my attention that she was concerned about her weight and was asking me predominantly how much milk she was drinking. She loved milk and she was predominantly drinking three, maybe four, cups of milk a day. So, she wanted me to decrease that down to one.*

Interviewer: *And what were you told to replace the milk with?*

Jan: *Well, it was a statement that didn't really have any helpful guidelines other than "reduce milk", but I presumed I was supposed to replace it with water or juice or food. I don't know. Reducing to one cup wasn't very successful because Jennifer, being a rather stubborn child, decided she wasn't going to drink any milk at all.*

Jan accepted the nurse's concern for Jennifer's weight and was adherent to her suggestion to reduce milk, however, looking back she believes the advice was unhelpful. Here we see how Jan was open to receiving advice but how her expectations of the thoroughness of advice were not met. Her interaction with the nurse left her in a seemingly worse off position because, Jennifer's weight continued to increase, and she was refusing milk altogether.

Milk refusal was one of the first of several issues Jan experienced with her daughter's "fussiness" around food. This fussiness made Jan feel unable to manage Jennifer's food, getting her to eat a variety of fruits and vegetables were particularly difficult, while sweets were particularly difficult to deny:

Fussiness was an issue because she would choose to only have meat and potato and her peas and carrots and corn, but she didn't like greens, so greens didn't get eaten. She ate only watermelons, cantaloupes and grapes. She wouldn't eat any plums and nectarines or peaches. She'd eat a banana. There were a fair few things in the fruit and veggies side of things that she chose not to eat, and she was a big lover of anything sweet; and that was an issue and still is an issue. She always seemed to want to eat more. It's very hard saying no to a child and, in particular, as a parent you're tired, you're busy. She'd eat her food and that was great but trying to say when and where you can and can't eat is really difficult. I struggled with that one.

Jan believes one of the contributing issues to Jennifer's weight was her preference for specific foods. Food refusal was an issue for Jan, she struggled with wanting her child's appetite to be satisfied and she felt constrained by Jennifer's refusal, which meant she often grappled with quantity over quality of food so that Jennifer would eat. Jan justifies these decisions with the explanation that parenting is a tiresome task in which parents are constantly busy; sometimes just getting Jennifer to finish her food without fuss was the easier option.

Reflecting on other behaviours that may have contributed to Jennifer's weight gain over time, Jan explained that Jennifer would sneak food in her room and kept stashes of chocolate around, unlike the other girls. Jan mentioned even though Jennifer had a slightly bigger appetite and preference for sweets than her other daughters she did not think it was sufficient to explain the difference in weight between her daughters. Jan noticed Jennifer "stacked" on the weight after high school when she had access to a car and her own money for food: *"She'd go to the shops and buy a whole bag of Lindt chocolates and eat them in her room".*

When asked whether her husband had ever expressed concern for Jennifer's weight, Jan indicates her husband had mentioned her "size" but that she was worried about discussing it in front of their daughter:

He would often say, 'she's a bit big' and I always say to him 'don't you dare say that in front of her'. But yes, he would occasionally say in private that 'Jennifer's bigger than she was'. His eating was not particularly good either though. After dinner he sort of ate whatever he could find. So, I needed child locks on the fridge and the cupboard for him. He's set a very poor example for the girls. Life's difficult there.

Jan's explanation of her husband's involvement suggests she felt unsupported by her partner around healthy eating behaviours. The quote indicates Jan struggled with managing her husband's food choices which she blames for setting a poor example for their children. The last comment, "Life's difficult there", suggests Jan and her husband experience difficulties with finding mutual goals in relation to the quality of food consumed in the household, which acted as a barrier to keeping family meals healthy.

As time passed Jan noticed Jennifer was always much bigger than other children her age. Much bigger even than her other two daughters and herself, whom she identifies as a healthy weight:

She was always a bit of a larger child through primary school in particular that she was just a fairly chunky child. She stopped growing at about grade five but yes, she was very solid. She was perhaps a bit clumsy being so big, so she didn't have a huge social network and she was bullied at school.

Jan reports Jennifer's weight impacted her in different ways. For instance, even though Jennifer was the middle child she was unable to pass on any clothing from her first daughter, Kate, as she was so much bigger. Jan also observed developmental issues with Jennifer, saying she was noticeably "clumsy" due to her weight. Jennifer's weight had also affected her socially amongst peers; she had few friends and experienced bullying at school.

While Jan had observed Jennifer suffering weight-related consequences, she always assumed Jennifer it was just a phase and her daughter would eventually outgrow her

weight. When asked if she was ever concerned about Jennifer's weight, she said she had just assumed it was Jennifer's natural body size and, though she was always a little sceptical, she felt Jennifer's weight was not severe enough to ask for medical advice:

I thought perhaps she was a little bit more solid, but I didn't actually go and ask somebody because I didn't want someone to say to me "you're being really silly", or, "you're overreacting". Um, I sort of didn't feel that I was comfortable asking because I thought I would get a really bad comment back if I was making a call on something that was really just a borderline case. So, I didn't really go further with asking any further advice. We did see a doctor and specialist for tonsillitis at grade six, but they didn't say anything about her weight.

This excerpt demonstrates how Jan felt insecure about her concerns regarding Jennifer's weight. She was afraid of receiving a negative reaction from a health professional and did not want to be chastised for "being silly". She mentions her daughter had had interactions with health professionals but aside from the nurse at the two-and-a-half-year check, none of the health professionals ever mentioned anything to her about Jennifer's weight.

While Jennifer's weight did not arise as a medical issue, over time the mental health impacts of bullying appeared to worsen. Despite being socially ostracised, Jan mentioned Jennifer was always a good and quiet student who stayed out of trouble. However, at one point the bullying was impacting on Jennifer's mental health and Jan felt she had to do something to protect her daughter:

Like I said, she didn't really have very many friends. She'd invite a few for birthdays but there weren't many party invites coming back. You'd say, 'who's coming over to play?' She couldn't think of anybody to come over and play. It was just body language from a child and you just know they aren't really gelling into a group. And there were a few that were not particularly nice students and I thought, well, about 40% went to the school here and 40% went to the school down the road where my other two went. And I thought 'well, that's not going to work because if something's going on that she won't tell me about, she's just going to suffer in the same environment'. So, I thought, 'well, even though I don't know, I don't think it's good, so we'll move her out'.

Here we see how Jan's concern for her daughter's mental health motivated Jan to change schools in hopes the bullying would lessen. While Jan felt relatively out of control in her ability to improve her daughter's weight, she was able to change the environment in which Jennifer was experiencing bullying. The above quote shows how Jan felt that the bullying was so bad, moving schools was worth the risk of the "unknown."

According to Jan, moving school had a significantly positive impact on Jennifer's attitude and well-being:

When she changed schools, the change in her was noticeably positive. So much so that my own mother, who had been cross with me initially for making Jennifer change schools, actually commented how much happier Jennifer appeared towards the end of her first year at the new school. So, I mean, from all my observations she did seem happier and health did seem better.

Despite having experienced success in changing her daughter's social environment and improving Jennifer's mental health, Jan feels guilty about not doing more to get her daughter properly assessed by a health professional. While she was able to minimise the social effects of bullying, the long-term physical impacts of Jennifer's weight are more apparent now as an adult:

I know she has seen certain physio people because she's got problems with her knees which is obviously not helped by her weight. She has seen quite a few specialists about her knees, and she doesn't sleep very well so she's been seeing specialists for her sleep. And, as I told you, I saw her testing things for sleep apnoea. So, she's doing a lot of testing herself for different things now which I think are quite likely to have been impacted by the weight she's carrying. Unfortunately, at her age now, she's at an age that I really cannot control anymore. So, it's difficult.

Jan believes the issues Jennifer is now experiencing with her health are a result of her excess weight. The consequences of the weight as an adult are severe and require several specialists. Jan realises now she has little control over Jennifer's health and habits. She struggles with the thought that she could have done more when Jennifer was a child, especially around providing healthy foods:

I feel a bit disappointed that I should've done something because if that has been a result of not taking more care when she was younger. I sometimes think we could've done it better. So maybe with the food, perhaps I could've also done better. But then nobody really mentioned it to me. But I could obviously see that she was bigger, but it was just, where does bigger become too big for health? And unfortunately, even to this day, I don't know — I mean I would know on a BMI scale, but when you look and someone and they all have different size, shape and build I still don't' know where do you really go, 'ok, the large into the overweight is the time to do something', and I still don't know that we have enough educational understanding to know when to say 'now's the time to get some professional assistance'. We, perhaps, should be looking at whether it's a diet issue or whether it's a hormonal issue that we can actually assist with, or is it something we can't do anything about. But then at least you've looked. So really, it's the knowing where and when do you go, 'we should do something'.

The guilt felt by Jan is strong and she reflects on why she never did anything about Jennifer's weight. She feels as if she should have known because Jennifer had been obviously bigger than other children, but how big was too big? She feels if she'd had the knowledge of where she could get help and when it was appropriate to seek help, *something* could have been done.

Jan avoids using the word "obese" for the entirety of the interview. She goes between describing Jennifer's fluctuations in weight through her life as either "normal weight", "overweight" and "even bigger".

Jan has noticed Jennifer is frequenting the gym and has been keeping a close eye on what she is eating. Even though Jennifer appears to be taking some initiative for her trying to manage her weight, Jan doesn't think it is working and that she is still putting on weight:

> *I think she's still putting on a bit of weight even though she weighs herself every morning and I told you she has those fancy scales that do body fat and fluid and goodness knows, what else. Every morning she checks that.*

Jan reports a strained relationship with Jennifer. Jan is much closer with her other two daughters — *"they will tell me anything"* — whereas Jennifer: *"you could ask her 20*

questions and at the end of it you would still know nothing about her". Jan says Jennifer has always communicated poorly with her, so while Jan observes Jennifer's weight struggles and attempts to address it, they have never spoken about it. While Jennifer has never explicitly stated she is unhappy with her body, Jan observes, in the following extract, certain traits that she believes may be a sign Jennifer lacks confidence with her appearance:

Jan: *She is very, very, conscious of dressing nicely, wearing makeup out all the time. She won't go anywhere without the makeup-even the swimming pool.*

Interviewer: *She goes swimming wearing makeup?*

Jan: *Well, she's a swimming instructor so she doesn't literally have to get her head wet. So, she goes to the swimming pool with make up on, yes. You don't go out unless you're perfect and I think that perhaps still a bit of sign that she hasn't got as much self-confidence as I would like because otherwise she would be going 'I'm fine the way I am, I don't have to have my perfect makeup on and my beautiful clothes to make me feel happy about what you're going to think of me. So, I think there's issues there that either subconsciously or consciously she's doing that. She can't be happy just to be herself without all the cover-up.*

While Jan believes Jennifer suffers body image and social acceptance issues, her main preoccupation is Jennifer's health. Heart disease runs in the family and her husband suffers from Type 2 diabetes. *"I just wouldn't wish any of that onto her,"* Jan says with concern.

6.4 Chapter summary and discussion: Interpreting parents' perceptions and experiences with childhood obesity management

Chronic conditions have shaped interventions with a focus on the patient; the concept of the "expert patient" is central to creating management strategies that meet patients' interpretations of their health condition (Tattersall, 2002). In the case of childhood obesity, parents are recognised as the main influencers of children's health behaviours; and, therefore, key players in the management of their child's health (H. R. Clark, Goyder, Bissell, Blank, & Peters, 2007; Golan, 2006; Haugstvedt et al., 2011; Lindsay, Sussner, Kim, & Gortmaker, 2006; K. Rhee, 2008; Savage, Fisher, & Birch, 2007). Understanding how parents make sense of their child's obesity; and their experiences in

managing it is crucial for creating effective interventions and facilitating communication in a clinical setting (Crawford, Timperio, Telford, & Salmon, 2006; Haugstvedt et al., 2011; Hughes, Sherman, & Whitaker, 2010; Newson et al., 2013). While much of the literature around parents' perceptions of childhood obesity assesses parents' recognition of their child's obesity (L. A. Baur, 2005; Carnell, Edwards, Croker, Boniface, & Wardle, 2005; Goodell et al., 2008; Jeffery, Voss, Metcalf, Alba, & Wilkin, 2004; Lampard et al., 2008; Newson et al., 2013; Syrad et al., 2015); and perceptions around the health impacts of their child's weight (Syrad et al., 2015), parents in this study were aware of their child's weight status and willing to address it as an adverse health issue. Few studies have examined parents' experiences with managing their child's weight from a clinical setting (Haugstvedt et al., 2011). The value added by the interviews with parents provides an insight into the experiences of these Australian parents and highlights some of the challenges and enablers of parenting in the context of childhood obesity. This section will contextualise the perceptions raised by parents in interviews in the broader literature and discuss the relevance of considering parents' perceptions in the clinical context of paediatric weight management.

6.4.1 Implications of diagnosis and referral: the importance of early interventions

All four parents were aware their children's weight and size were above those of their peers. and appeared very willing to address their child's obesity out of fear for both the short and long-term consequences of obesity; some which their children had already experienced. All four parents in Study 2 exhibited motivation for making changes to their children's diets (Carnell, Cooke, Cheng, Robbins, & Wardle, 2011; Goodell et al., 2008). This was demonstrated by their in-depth descriptions of the ways in which they went out of their way to attend their children's weight management appointments (i.e. taking time off work, driving an hour to appointments); and the ways they described their willingness to facilitate healthy dietary and physical activity habits for their children (i.e. offers to drive their children to sport or gym) (Branch et al., 2017). Study 2 parents suggested they were motivated by their desire for their children to be healthy and happy (Akhtar-Danesh, Dehghan, Morrison, & Fonseka, 2011; Carnell et al., 2011; Goodell et al., 2008; Styles, Meier, Sutherland, & Campbell, 2007; Syrad et al., 2015). Parental concern for their children's health is positively correlated with motivation to

monitor and regulate children's diet and physical activity behaviours in paediatric weight management (Lampard, Byrne, Zubrick, & Davis, 2008; L. Moore et al., 2012).

Parents' inability to recognise their child's obesity has been found to be a barrier to their engagement with weight management services (Barratt, Levickis, Naughton, Gerner, & Gibbons, 2013; Hansen, Duncan, Tarasenko, Yan, & Zhang, 2014). Awareness of their child's weight issue is an important prerequisite for parents' willingness to address their child's weight issue (Davidson & Vidgen, 2017).

Despite being aware and willing to take action to address their children's weight , Rachel, Melinda and Jan expressed confusion around how to access help for their children's weight. Jan (Case Study 4) described uncertainty and fear of raising the issue of Jennifer's weight with the GP for fear of being perceived as "silly." These concerns align with findings from other studies that reported parents were confused and worried about raising their concern for their child's weight with health professionals out of fear of being blamed for their child's weight; or for wasting the health professional's time (Turner et al., 2012). Confusion around who is the appropriate practitioner to discuss their child's weight with suggests parents are unaware of available services and/or how to receive referrals for such services (K. Hardy, Hooker, Ridgway, & Edvardsson, 2019; Turner et al., 2012). Most literature around parent awareness and engagement with childhood obesity interventions focuses on parental denial and resistance; however, the finding from my study suggests knowledge around how and where to seek help and fears around how health professionals will react were barriers to the parents in my study seeking earlier treatment.

Studies suggest that obesity that is developed in childhood is more likely to recede with early intervention (Danielsson, Kowalski, Ekblom, & Marcus, 2012; Sabin et al., 2007). Several studies have found age-related correlations between timing of intervention and progeression of obesity into adulthood (Danielsson, Svensson, et al., 2012; Ward et al., 2017). For instance, a simulation of growth trajectories of childhood obesity into adulthood indicated that a majority of children in the United States would be obese at the age of 35 years, with nearly half of projected cases occurring in childhood (Ward et al., 2017).

It is widely accepted that early, intensive multidisciplinary interventions are likely to be the most effective in improving BMI in children who develop obesity; although long-term data on health outcomes later in life are needed for this population (Foster et al., 2015; Emma Mead et al., 2017).

A large percentage of obese children remain clinically undiagnosed (Benson, Kaelber, & Baer, 2009; Cretikos et al., 2008; Nader et al., 2014; Rausch, Hametz, & Rothbaum Perito, 2011). Failures to diagnose children with obesity delay opportunities for early and successful interventions (Baxter, Ware, Batch, & Truby, 2013; Hagman et al., 2018; Kroke et al., 2006; NHMRC, 2013). For the parents in Study 2, diagnosis had profound implications for their engagement with services and their abilities to address their children's weight issue.

For Rachel (Case Study 1), an initial diagnosis of obesity for her daughter at seven years old brought awareness to an ongoing issue that required intervention. Another obesity diagnosis from a different paediatric hospital following an interstate move motivated Rachel to follow this up with treatment for her daughter, Jasmine.

For Melinda, failure to diagnose and address Joel's obesity, likely contributed to his incidence of slipped capital femoral epiphysis, a common consequence of childhood obesity in prepubertal adolescents (Murray & Wilson, 2008; Novais & Millis, 2012; Perry et al., 2017; Perry et al., 2018; V. Sharma & Oddy, 2014; Wabitsch et al., 2012; Wills, 2004). In slipped capital femoral epiphysis, increased sheer force of excess weight exerted over time causes a gradual slip of the growth plate causing deformities in the growth of the hip and pain in the hip, thigh or knee (Perry et al., 2018; V. Sharma & Oddy, 2014; Wabitsch et al., 2012; Wills, 2004). Early diagnosis and intervention of childhood obesity are necessary in order to avoid the development of medical complications, as in Joel's case (Baxter et al., 2013; Farpour-Lambert et al., 2015; Hemmingsson, 2018; McCormick, Sarpong, Jordan, Ray, & Jain, 2010). Vivian's daughter, Danielle (Case Study 3), had been diagnosed with a fatty liver; another common symptom of obesity. Jan's daughter, Jennifer (Case study 4), was being treated for sleep apnoea and knee pain; also very commonly correlated consequences of obesity.

In addition to their children experiencing medical consequences of childhood obesity, both Melinda and Jan reported that their children had experience bullying. The psychosocial consequences of childhood obesity are well documented in the literature (Must & Strauss, 1999; Puder & Munsch, 2010; Schwimmer, Burwinkle, & Varni, 2003; Strauss, 2000; Strauss & Pollack, 2003); particularly the issue of bullying due to stigmatisation (Brixval et al., 2012; Griffiths et al., 2006; Janssen et al., 2004; Pierce & Wardle, 1997). Research has shown parental guilt to emerge as a common emotion experienced by parents who recognise their child as overweight (Persky, McBride, Faith, Wagner, & Ward, 2015; Pescud & Pettigrew, 2014). Interestingly only Jan explicitly expressed guilt around her daughter's weight. The other three parents made comments to suggest their children were somewhat complicit in their weight status; however, Jan commented that if only she had known, perhaps the weight-gain could have been avoided. . Studies have often report a disconnect between parents' perceptions of their child's overweight status and the potential long-term risks associated with it (Alexander et al., 2017; A. R. Jones et al., 2011).

The analysis of the case studies presented in Study 2 suggested that the age of the children impacted on how much control mothers felt they had over their children's diet and physical activity. The parents each described how much control they felt they had over their children's weight, with those of the oldest two children, Case Studies three and four, feeling that they had minimal control due to the fact their children were of an age that they would make their own decisions around food and exercise. While each of the parents felt responsible for facilitating the necessary changes to address their obesity, they also believed their children should take agency in their own intervention. This is in line with other studies which have found some parents believe children bare some responsibility in improving their weight status (Davidson & Vidgen, 2017; Christy Boling Turer et al., 2016; Twiddy, Wilson, Bryant, & Rudolf, 2012).

Best practice guidelines suggest adolescents should take a more active role in their weight management because of their growing autonomy in their life choices and goal-setting (Weihrauch-Blüher et al., 2018), however, interventions which solely target parents have been found to be as effective as those which target parents and children in producing outcomes in prepubescent children (Ek et al., 2019; Ells et al., 2018; Ewald, Kirby, Rees, & Robertson, 2014; Loveman et al., 2015). It is widely understood that

parents play an important role in controlling their child's food and physical activity environment, facilitating child attendance at treatment consultations and implementing changes in the household (Ells et al., 2018). However, the involvement of parent and child in the child's weight management changes with increasing age; where with increasing age the parent's role morphs from being the sole agent of change to a facilitator of change (Azar et al., 2020; Backstrom, 2020). The practical aspects of how these roles change and how this impacts on the parent-child relationship have not been well-explored (Azar et al., 2020; Wiseman, Patel, Dwyer, & Nebeling, 2018).

It was clear from the interviews with the two parents of adolescents and one young adult in my study that they struggled with relinquishing control of their child's weight management. Melinda (Case Study 2) expressed feeling "left out" when the clinician would send her out of the room and speak to her son (aged 14) privately. This feeling of "loss of control" stemmed from her feeling uninformed about the discussions between her son and the clinician which she felt she should be privy to, as a parent. Vivian (Case Study 3) reportedly tried to monitor her daughter's (aged 17) diet and exercise closely but expressed a loss of control because her daughter would go out with friends and make her own food choices. Furthermore, Vivian expressed frustration that her daughter was not engaging in sufficient amounts of physical activity to improve her obesity. Finally, Jan (Case Study 4) expressed defeat in her ability to "control" her daughter's (aged 23) diet and physical activity behaviours because, while she lived at home, she was "at an age" that she was fully autonomous in her decision-making around food and physical activity.

6.4.2 Difficulty engaging other family members (fathers)

The level of engagement of other family members contributed to the level of control parents from Study 2 felt they had over employing healthier habits. For instance Melinda (mother of 14 year old boy, Joel) reported difficulties getting her husband to change his health habits; and although Melinda appeared willing to make the changes herself, Joel's father was the main food preparer in the household. This inability to engage Joel's father in the intervention created several challenges for Melinda and negatively impacted on the family's dietary intake.

On the opposite end, Rachel (mother of 7 year old, girl, Jasmine) reported having few issues implementing healthier habits; and that her ex-husband and other daughter were

on-board and not fussed with the change of food in the households. Rachel spoke about how, because she was separated from Jasmine's father, she often dealt with Jasmine's adverse reactions to being denied sweet foods. However, she also found Jasmine's father was supportive of the changes, so she could rely on him to maintain consistency of these changes when Jasmine was with him.

Children's dietary patterns evolve within the familial context that is intricately layered by parenting styles, family dynamics and external cultural, societal and environmental factors (K. K. Davison & Birch, 2001; Fraser et al., 2011). Studies suggest that family dynamics including family rules, emotional support, encouragement, reinforcement from other family members and family member participation are important determinants of a family's health-behaviour patterns (Gruber & Haldeman, 2009; Sallis & Nader, 1998). Weinman et. al. suggests that the family setting provides the central context for patients experiencing chronic conditions and their management (Weinman, Heijmans, & Figueiras, 2003). Family dynamics can strongly influence health outcomes by either supporting or undermining efforts to address health (Gruber & Haldeman, 2009; Weinman et al., 2003); as can be observed in the polarising narratives between Melinda and Debra. Lack of familial support has been a frequently reported barrier to childhood obesity management in recent literature (Glover et al., 2019). Lack of agreement between care givers has been shown to negatively impact on familys' overall dietary intake (Gevers, van Assema, Sleddens, de Vries, & Kremers, 2015).

The examples of whole-of-family engagement either being a challenge or a facilitator of effective intervention emphasises the need for family-based approaches to childhood obesity (Gruber & Haldeman, 2009). Studies have repeatedly shown family social support to be a key factor for promoting and sustaining modification of health behaviours (Garasky, Stewart, Gundersen, Lohman, & Eisenmann, 2009; K. Rhee, 2008; Sung-Chan et al., 2013).

Changes to family habits have been found to impact on relationships between caregivers, particularly if one parent does not see the need for change (Anti, Laurent, & Tompkins, 2016; Schalkwijk et al., 2015). Parental conflict and disagreement are common barriers to families adopting new diet and activity routines (Kahlor, Mackert, Junker, & Tyler, 2011; Kuhl et al., 2012; Zhang et al., 2018). Mutual support and agreement are positive interpersonal factors that refer to similarities between caregivers

regarding attitudes, rules, decisions and communication (S. Cyril et al., 2016; Zhang et al., 2018). Agreement between caregivers help promote healthy habits at home (Zhang et al., 2018).

There is a lack of research reporting on paternal involvement in childhood obesity management (Cheng, Hawkins, Rifas-Shiman, Gillman, & Taveras, 2016; Kirsten K. Davison et al., 2016; Fraser et al., 2011; Heerman, Taylor, Wallston, & Barkin, 2017; Khandpur, Blaine, Fisher, & Davison, 2014; P. J. Morgan et al., 2017; Panter-Brick et al., 2014). Some research has highlighted the role of fathers in childhood obesity management is virtually non-existent but necessary for interventions to be successful (Anti et al., 2016; K. K. Davison et al., 2018; A. D. Walsh et al., 2014). Research suggests that mothers are overwhelmingly overrepresented in data showing attendance to weight management consultations with their children (Anti et al., 2016; S. L. Williams et al., 2017). In line with Melinda's complaints, other studies have indicated fathers are often resistant to making changes themselves (Anti et al., 2016; A. D. Walsh et al., 2014). These were reported barriers for both Jan and Melinda, whose husbands had their own habits and practices they were unwilling to change, despite their child's weight issue. For Melinda, this was particularly frustrating because she was not the primary food provider; however, she was the parent who took Joel to his weight management appointment.

6.4.3 Impact of implementing intervention on the parent-child relationship

Parent interviews in Study 2 highlighted the importance of the child-parent relationship in childhood obesity management. Strained relationships between the participants in Study 2 and their children were a result of resistance from children in response to new dietary and activity routines imposed by their parents. For example, Vivian mentioned fearing a strained relationship with her daughter as suggestions and pressure to exercise (on the home treadmill) is often met with resistance and an argument; and Jan reported a strained relationship with Jennifer due to poor communication which Jan attributes to Jennifer's defensiveness about her weight.

Parent-child relationships are often strained by changes to food and physical activity within childhood obesity interventions (Twiddy et al., 2012). Child resistance to change is a commonly reported barrier by parents engaged with childhood obesity services (Bhushan et al., 2018; Kahlor et al., 2011; Kuhl et al., 2012; Zhang et al., 2018).

Parenting efficacy, specifically, the ability to control, discipline and set boundaries, is a key element in managing dietary and activity practices in the home environment; and ultimately, in managing reactions to these changes in diet and physical activity (Grossklaus & Marvicsin, 2014; Hubbs-Tait, Kennedy, Page, Topham, & Harrist, 2008; Kuhl et al., 2012; Marvicsin & Danford, 2013; Morawska & West, 2013; K. Rhee, 2008). Parental control is at the heart of parenting efficacy; and impacts on parents' ability to enforce adequate boundaries and rules around children's dietary and activity behaviours (Ek, Sorjonen, Nyman, Marcus, & Nowicka, 2015; Hubbs-Tait et al., 2008; Marvicsin & Danford, 2013; Thompson, 2010). A wide body of literature suggests feeding styles relate to parents' perception of control over their children's dietary behaviours; and represent the power dynamics between the parent and child (Birch, 1991; K. K. Davison & Birch, 2001; Faith et al., 2004; Grossklaus & Marvicsin, 2014; Huilan et al., 2013; Savage et al., 2007).

Research suggests parents and children have differing views on expectations and behaviours for supporting the child's weight management in the context of obesity interventions (Azar et al., 2020; Twiddy et al., 2012; Wiseman et al., 2018). Discussions with parents in Study 2 on how their efforts to manage their children's diet and physical activity habits impacted on their relationships with their children suggest childhood obesity management could benefit from improving communication between parent and child. This suggestion has been supported by Azar and colleagues who explored perspectives of parents and adolescents and found a lack of communication between parent and their adolescents around how efforts to manage the adolescent's weight could be better supported in the household (Azar et al., 2020).

6.4.5 Clinic location and hours not family-friendly

In addition to the internal factors they faced with family dynamics, the parents also indicated childhood obesity clinic locations and hours posed challenges to their ability to access assistance with managing their child's obesity. In Case Study 1, Rachel mentions her daughter's initial referral to a Melbourne clinic presented challenges because it was located in the city while she lived in the outer suburbs. Luckily, she was able to receive a referral to a clinic that was closer to her house and made attendance much easier.

Melinda (Case Study 2) and Vivian (Case Study 1) were less fortunate and described the clinic location and its hours presented time-consuming, costly and, sometimes, time-wasting challenges. Melinda partially attributed her husband's lack of support for making household changes to his inability to attend sessions because he does shift work and the times did not suit his work/ pick up other kids from school schedule. To be able to attend the clinic, Melinda and Joel must sacrifice time and work and school because operating hours are during work and school hours. Vivian reported similar issues with having to take time off work and for her daughter to take time off school. Even further frustrating for Vivian was her account of one appointment in which she had organised the time off school for her daughter on a day that Danielle had an assessment, and was informed after a long wait that the clinician was unable to see them at all that day.Issues with transport, parking and access

Melinda believed her husband's apathy towards making changespartly arose from his lack of engagement with the weight management clinic. Melinda found the clinic hours and location restrictive to having whole-of-family attendance because of her husband's work schedule and the need for him to arrange pickup and care of her other children while she attended the appointment with Joel. Melinda believed her husband's lack of contact with the health professionals managing Joel's condition contributed to his apathy towards making the changes suggested to Melinda during consults with the paediatric weight management team.

These findings support the notion that fathers are a key influence in shaping the family environment that leads to the development of childhood obesity (Anti et al., 2016; Jacqueline Blissett, Meyer, & Haycraft, 2006; Cheng et al., 2016; Fraser et al., 2011; L. Hall et al., 2011; Khandpur et al., 2014; Mallan et al., 2014; R. L. Vollmer et al., 2017; Wake et al., 2007; Zhang et al., 2018).

It is worth noting, that none of the mothers reported having their whole family regularly attend the clinic. While best practice guidelines promote a family-based approach to childhood obesity, the preference for both parents (and family members) to attend appointments is far from the reality of the two-parent working household; and even less in the case of separated parents (L. Gibson et al., 2016).

7 Meta-discussion

7.1 Introduction

The studies presented in this thesis aimed to explore and describe health professionals' and parents' perceptions of childhood obesity management from their experiences within the context of paediatric weight-management. Study 1 explored health professionals' perceptions of childhood obesity management. Study 2 explored parents' perceptions and experiences of childhood obesity management. This chapter will expand upon the main findings around how health professionals and parents in my research perceived childhood obesity management. It will compare these findings between the two groups of participants in the studies presented and draw on the wider literature to interpret implications of these findings for childhood obesity management. The purpose of this chapter is to discuss practice and policy implications and to provide recommendations based on the the findings from both Study 1 and Study which are supported by contemporary literature. Strengths and limitations of the overall thesis are presented.

7.2 Practice Implications

7.2.1 Motivation may improve family-engagement

Motivation is indicative of patient engagement and likelihood of families' likelihood of making prescribed changes to weight-related behaviours (Avis et al., 2013; Eckstein et al., 2006; Jonides et al., 2002; Teixeira et al., 2012). Interventions should seek to enhance families' motivation for treatment and prevent families from getting discouraged (Morinder, Biguet, Mattsson, Marcus, & Larsson, 2011; A. J. Perez et al., 2018; 2010). Literature suggests access to information, economic gain, altruism and expected therapeutic benefit are factors that can motivate family participation (Fry, 2008). Some studies recommend health professionals track family motivation and progress during treatment to gauge family engagement status (Limbers, Turner, & Varni, 2008; Wake et al., 2012a). Motivational interviewing is a recommended tool for health professionals to match service delivery with families' expectations (Barlow, 2007; Borrello, Pietrabissa, Ceccarini, Manzoni, & Castelnuovo, 2015; Carcone, Jacques-Tiura, Brogan Hartlieb, Albrecht, & Martin, 2016; H. R. Cygan et al., 2014;

Döring et al., 2016; Lawn & Schoo, 2010; Limbers et al., 2008; Luque et al., 2019; R. P. Schwartz, 2010; Tang & Verboom, 2014; Tripp, Perry, Romney, & Blood-Siegfried, 2011).

7.2.2 Training is needed to finesse the family-based approach

The importance of family dynamics to the success of childhood obesity management is evident both in my research and the greater literature. Australian and international clinical guidelines suggest health professionals should use a family-based approach to managing childhood obesity; rather than focusing treatment on the child (D. C. W. Lau et al., 2007; Logue et al., 2010; Ministry of Health, 2016; NHMRC, 2013; Styne et al., 2017). Family function should be considered as a target of childhood obesity interventions (Assari & Caldwell, 2017). Families should be taught or shown specific supportive behaviours; particularly around emotional support (Hecker et al., 1986). Treatments should emphasise parental concern and awareness about child weight and educate parents on the health risks associated with childhood obesity (Lampard et al., 2008; L. Moore et al., 2012; Slater et al., 2010).

Parents in my study expressed a desire for health professionals to provide strategies that would improve the likelihood of family members, particularly the children themselves, adhering to the prescribed changes. Family-based approaches should provide these strategies by focusing on mutual caregiver support and agreement, and the parent-child relationship. Family-based treatments with strong psychological components have shown significant and beneficial effects on BMI, self-esteem and symptoms of depression in children with obesity (Bianchini et al., 2013; Bocca et al., 2014; Boisvert & Harrell, 2015; Danielsen, Nordhus, Juliusson, Maehle, & Pallesen, 2013; Nowicka & Flodmark, 2008; Nowicka, Pietrobelli, & Flodmark, 2007; Vignolo et al., 2007; Vos et al., 2012; S. M. Walsh et al., 2014)

Despite the fact that the health professionals in my study indicated they used a family-based approach to their clinical management childhood obesity, most felt they lacked knowledge and training to be able to adequately address the family-based barriers previously discussed. Studies indicate most health professionals have received no training in family-based therapy (Dietz et al., 2015). This may explain why many health professionals, including the ones in my study, feel incompetent managing childhood obesity and often fail to address it (Greener et al., 2010; Jelalian et al., 2003;

Mkhatshwa, Ogunbanjo, & Mabuza, 2016; Redsell et al., 2011). They believed this aspect of management was outside their scope of practice and required the involvement and expertise of psychologists or family counsellors. Other studies have also shown health professionals feel counselling is an essential element of childhood obesity management; and most feel their own counselling skills are inadequate (Findholt et al., 2013; Moyers et al., 2005; Schalkwijk et al., 2016; Turner et al., 2009; Yarborough et al., 2012).

The health professionals in Study 1 believed the best way to tackle the barrier of managing family dynamics was for them to undergo training around how to implement a family-based approach. Health professionals consistently request training around how to manage children with obesity, however, few opportunities for upskilling exist (Bianchini et al., 2013; Boisvert & Harrell, 2015; Dietz et al., 2015; Mazur et al., 2013; Montesi et al., 2016; Story et al., 2002; Tarasenko et al., 2014; S. M. Walsh et al., 2014). Furthermore, family-based treatment for childhood obesity administered by a single practitioner is likely to have limited success compared to a family-based treatment administered by a multidisciplinary team (Mihrshahi et al., 2018). The literature suggests a lack of training in family-based counselling and little experience working in multidisciplinary teams impairs care of children with obesity (Dietz et al., 2015).

This indicates health professionals may continue to avoid addressing childhood obesity due to a lack of resources, resulting in missed opportunities for early intervention and fragmented care for a condition that requires an integrated approach (Louise A. Baur, 2006; Briscoe & Berry, 2009; Findholt et al., 2013; HRSCHA, 2009; Kraschnewski et al., 2013; Oude Luttikhuis et al., 2009; Story et al., 2002). Training of health professionals for the treatment of childhood obesity is not yet widespread, and those that have been documented lack evaluation (Dietz et al., 2015; Royal College of Physicians, 2010).

In Australia, two studies stand out that measured intervention success after training primary care practitioners to assess and counsel for childhood obesity (McCallum et al., 2007; Wake et al., 2009). Both studies indicated these efforts failed to improve child BMI (McCallum et al., 2007; Wake et al., 2009). Results from older international studies suggest similar results to those of the Australian studies, improved quality of

assessment but insignificant changes to BMI (Dennison, Yin, Kibbe, Burns, & Trowbridge, 2008; Jacobson & Gance-Cleveland, 2011). Despite results, these studies may indicate primary care is not a suitable sector for treating childhood obesity, rather than suggest training alone is not useful as findings from Study 1 indicate additional support is needed. Primary care practitioners have reported requiring longer, funded consult times and access to multidisciplinary input (Kyung E. Rhee et al., 2018; Shreve et al., 2017). This would require a shift in Australia's current primary care funding and care models.

Promising results have recently emerged from one study assessing health professionals' attitudes and perceived competence after obesity-specific training showed improved professional skills and attitudes towards managing obesity (Sanchez-Ramirez, Long, Mowat, & Hein, 2018). The implications of these results on patient outcomes have yet to be reported, but improved confidence in health professional competency may improve health professionals' likelihood of addressing obesity when it presents. However, the fact that the study focused on training for adult obesity continues to highlight the paucity of evidence-based data in the context of childhood obesity.

7.3 Policy implications

The health professionals' discussions around barriers to childhood obesity management highlight several implications for policy action for childhood obesity management; importantly that, based on the complex interactions of ecological influences, a systems-based approach should be applied to creating policies to improve treatment outcomes for children with obesity (Egger, Swinburn, & Amirul Islam, 2012; B. Y. Lee et al., 2017; Mihrshahi et al., 2018; Millar et al., 2015; Powell et al., 2017; B. Swinburn & Wood, 2013).

Firstly, there is a need for strong prevention policies that target social determinants of health; particularly those related to the food and built environment (Currie C, 2012). The implications for long-term management of childhood obesity are similar to the implications for prevention of childhood obesity: address environmental influences and social determinants to make the healthy choice the easier choice. The issue with multi-dimensional conditions like childhood obesity is that discussions around behaviour have focused on will-power and knowledge of the individual despite overwhelming evidence

that environmental, socioeconomic and genetic influences have far greater influence on individual behaviour (Butland et al., 2007a). Similarly, management practices focusing primarily on individual behaviour rather than population-based strategies targeting environmental and market-based influences reinforce a perception that an individual (or parent) is mainly responsible for their child's obesity (Butland et al., 2007a; R. M. Puhl & Heuer, 2010).

The current lack of policy towards changing current influences such as fast food advertising, accessibility and availability of discretionary foods exceeding accessibility and availability of healthy foods and the formulation of discretionary foods reinforces biases of personal responsibility and fail to acknowledge the importance of environmental impact (Daraganova et al., 2013; Thornton, Bentley, & Kavanagh, 2011; Thornton, Jeffery, & Crawford, 2012).

Promising results come from a systems-based intervention for childhood obesity prevention intervention program that operated in South Australia over four years (2011-2015), the OPAL (Obesity Prevention and Lifestyle) project. This project aimed to improve eating and physical activity patterns of children in 20 South Australian communities. The project reported prevalence of combined overweight and obesity in the intervention group was 52% lower than control groups; with one of the key outcomes being, the proportion of children in the healthy weight range did not significantly change after the five year intervention period (Bell et al., 2016).

Without strong preventative policies in place, clinical management will continue to fail in creating and maintaining sustainable behaviour change.

Secondly, policies should facilitate and enable individuals to access adequately resourced health services (S. G. Hill et al., 2019; Mihrshahi et al., 2018). Removing access barriers will encourage engagement with weight management services and early intervention. Access barriers include clinic hours and locations. Extending service hours to fit working families (for instance, service hours should include hours outside of school and work hours and weekends) and increasing the amount of services outside of major metropolitan regions should increase the reach of treatments. Furthermore, research has found the rate of obesity in Australia's major metropolitan areas are far less than rates of obesity in outer suburbs and rurally.

Thirdly, policies should strive to remove social stigmas that interfere with people's desire and confidence in engaging with health services for weight issues. Public health campaigns can achieve this through releasing messages based on improving family health rather than focusing on weight. They should avoid messages that place blame on individuals and seek to use positive language that encourages and empowers individuals to engage in healthy behaviours.

7.4 Strengths and limitations

Strengths of the study include the range of health professionals involved in the study, particularly, in regard to their geographic location, practice setting and expertise and the use of case studies that report the childhood obesity management efforts of four parents and their children. The application of an IPA approach to interpreting the experiences of participants in each study can enrich our understanding and bring to light prominent matters within childhood obesity management in an Australian context. Importantly these findings have the potential to contribute to evidence-based practices that shape better clinical practice and patient-centred care.

Limitations include the select volunteer nature of participating health professionals and parents. The small sample size of parents was also a limitation of the study; however, this was due to difficulties with prolonged ethics processes. Further, the fact that only mothers agreed to/were available to participate in this study means we are missing views from fathers that could be important to a family-based response to childhood obesity management. Results may not be generalisable, but they provide an evidence-base for future research, which previously has not existed. Finally, the nature of IPA research is interpretative and based on the perceptions and interpretative processes of the researcher, however, the researcher drew upon the hermeneutic, idiographic and contextual foundations of the data to understand and report the participants' experiences with the phenomenon of childhood obesity management.

7.5 Recommendations

Overall the findings emphasise several barriers to the implementation of effective strategies to clinically manage childhood obesity in Australia for a sample of health professionals and parents. The points raised during the interviews with health

professionals have profound implications for the success of childhood obesity treatment in Australia.

Literature suggests reasons for the gaps that exist between health professionals' beliefs about appropriate treatments and the treatment they actually provide relate to their clinical competence and structural barriers within the health system (i.e. funding, referral pathways, awareness, cost and availability of referral services) and a lack of confidence patients will respond to treatment (Barlow & Dietz, 2002; Franc et al., 2009; Nelson et al., 2015; Turner et al., 2009; Wigton & McGaghie, 2001) and lack of service capacity to manage the patient (insufficient time for consultations; insufficient staff) (Cretikos et al., 2008; Greener et al., 2010; Isma et al., 2012; Jelalian et al., 2003; Nelson et al., 2015; Steele et al., 2011; Story et al., 2002; Turner et al., 2009).

These interviews would suggest clinical management of childhood obesity in Australian is suboptimal and poorly supported by the current health infrastructure and lived environment.

Based on the study findings, a number of recommendations to enhance the breadth, scope and reach of clinical management of childhood obesity in the Australian context. The recommendations relate to implications for clinical practice, policy and prevention efforts. Suggestions for further research are also provided.

7.5.1 Clinical practice

- Health professionals require better understandings of referral pathways and greater awareness of multidisciplinary clinics that specialise in childhood obesity treatment to refer children with obesity.
- Health professionals need to take a family-based approach to management and focus on the health behaviours of the whole family rather than focusing on the weight of the child with obesity.
- There is a need to enhance involvement of psychological support and counselling in childhood obesity management to address issues around family function and parenting.
- Children with obesity and their families need to be supported and encouraged to raise concerns of weight with primary care practitioners to address fears around raising the issue of a sensitive topic.

- Any management approach of overweight children and their families needs to be based on respect, sensitivity and non-judgment to strengthen the health professional-family relationship and encourage treatment engagement.
- Health professionals and health policy makers need to emphasise the psychosocial issues associated with childhood obesity; particularly in relation to stigma and peer bullying.
- Health professionals and health policy-makers need to address the stigma surrounding obesity to facilitate better mental health and motivation for parents of children with obesity to engage with paediatric weight services.
- Health professionals need to be able to assess and address weight stigma experienced by children with obesity and target emotional eating for successful long-term weight loss maintenance (Hübner et al., 2016)
- Health professionals need to primarily engage with parents of overweight children to discuss altering family-health habits; although adolescents should be actively involved in treatment to facilitate better self-management of their condition.
- Accurate assessment on a case-to-case basis of childhood obesity is crucial to determining the needs of families and develop appropriate and feasible treatment plans. Assessments should include screening for co-morbidities and medical risks, anthropometric measures, family dynamics and health behaviours childhood obesity is crucial to developing appropriate and feasible treatment plans for families with childhood obesity.
- Health professionals need to be aware of the impact of guilt felt by parents of children with obesity on engaging with paediatric weight services and be careful not to place blame of the child's weight on the parent.
- There is a need to provide ongoing support for families with childhood obesity or who have participated in childhood obesity interventions to increase long-term maintenance of health-related behaviours.
- In response to the sensitivity around the topic of weight, health professional should approach childhood obesity treatment as an opportunity for the whole family to get healthy rather than focusing on weight.
- Health professionals should assess parents' acceptance of the diagnosis and their motivation to make changes.

- Services offering childhood obesity management should be wary of parents' ability to attend consultations during work hours and strive to offer family-friendly consultation times that will allow for better likelihood of getting the whole family to attend.
- Services that offer childhood obesity management should do more to promote their service to primary care practitioners and the public to increase awareness and reach; particularly those who struggle with getting referrals.
- Health professionals need to assess and report a broader range of outcome data from their interventions with families undergoing paediatric weight management.

7.5.2 Education and training of health professionals

- Education of contemporary research around effective childhood obesity treatments and how to implement them into practice.
- training Educational program that provided upskilling of health professionals how to apply a family-based approach and enhance engagement of all family members, particularly all caregivers.
- Health professionals require training around how to counsel families living with childhood obesity.
- Training around motivational interviewing to facilitate better communication and a more positive approach to making lifestyle changes.
- Health professionals require more specific guidance on their profession-specific role in childhood obesity management (i.e. are dietitians the only ones that can address food choices and diet queries?).
- More clear guidelines outlining the function and roles of each person within a multidisciplinary team are required for services that are able to provide a multidisciplinary approach.

7.5.3 Public health policy

- Public health policy should reduce causes of obesity through legislation or regulation that creates environmental conditions that sustain good health, including access to healthy food and opportunities to be physically active.
- Policy should ensure that individuals have access to adequate health services.

- Policy should ensure health professionals are sufficiently resourced and trained to implement national clinical guidelines into practice.
- Policy should support the maintenance of childhood obesity interventions by improving food and built environments.

7.5.4 Suggested areas for further research

- More research on how different health professionals conceptualise childhood obesity may help us understand why some fail to address it and treatment approaches used by those who do.
- Further research is required to understand the expectations, needs and barriers of families in childhood obesity management to better inform how to provide better patient-centred care.

8 Conclusions

The current study conceptualised the perceptions and experiences of Australian health professionals and parents of children in childhood obesity management. These findings have implications for the current practice of childhood obesity management.

The research revealed that the health professionals in my study conceptualised childhood obesity through four main points:

(i) They believed that childhood obesity is a body size which is characterised by excessive weight that impacts on the health of children.
(ii) Whether or not it is a "disease" appears of particular relevance to health professionals.
(iii) The health professionals acknowledged childhood obesity caused by a range of factors that are often resultant of life events or social circumstances.
(iv) The health professionals believed childhood obesity requires intervention.

The health professionals believed they had a role in managing childhood obesity. They discussed their perceptions of what these roles involved and shared their experiences of carrying out these roles. Parent-participants also commented on various aspects of these elements in management while sharing their own perceptions and experiences with management.

The main responsibilities the health professionals believed they were required to fulfil were described as being:

1. Diagnosis — identifying and raising the issue with parents that there is a problem with child weight.

Some of the main issues the health professionals identified around diagnosis were that some parents refused to acknowledge their child had a weight issue or did not believe their child's weight was a risk to their health. This is a common issue experienced by health professionals in the greater literature.

Other health professionals found even after a child had been diagnosed and referred for obesity, some parents were unaware of their child's diagnosis. Therefore, health

professionals found themselves awkwardly raising awareness even after a formal diagnosis had been made.

While the health professionals in this study strongly believed diagnosis was within their range of clinical responsibilities, all perceived general practitioners as not fulfilling this role and, therefore, missing out on opportunities for early intervention. The results of delayed diagnosis and intervention can result in significant health consequences. Case Study 1 exemplified how these delays can result in significant health consequences, such as the slipped femoral epiphysis experienced by Joel. The literature states that many children's first encounter with weight management services only occurrs after they have already suffered a weight-related issue. In Case Study 4, Jan's twenty-three year-old daughter, Jennifer, was suffering more severe consequences of persistent obesity including sleep apnoea and mobility issues. Jan believed such impacts may have been avoided with early intervention. The research indicates that both health professionals and parents who participated were concerned about childhood obesity and viewed early diagnosis as crucial to avoiding the long-term consequences associated with obesity.

2. Referrals: Most health professionals in Study 1 received referrals; however, those who did not have the capacity believed they should refer-on children with obesity to a service that was better equipped to manage it.

Those who wished to refer-on to either a specialist service or dietitian believed there was a general lack of services and funding to assist families with accessing these services. Some health professionals working in smaller specialist clinics reported receiving a lack of referrals, while the health professionals from bigger, more well-known services had waiting lists of up to six months. A review of paediatric weight management clinics suggests there is an inadequate number of services in Australia, however, the paucity of referrals reported in smaller clinics suggests promotion of services is necessary to increase awareness of eligible services.

Similar to the broader literature, health professionals in Study 1 indicated that self-referrals by parents acted as a facilitator because it meant parents were motivated to address their child's weight. According to the health professionals from Study 1, the main reason parents self-referred was due to peer bullying or sneaking food or binge

eating. Case Study 2 demonstrated how some parents' concern for their child's weight facilitated GPs with making a referral. Vivian, sought assistance from her GP when she became concerned about her 17-year-old daughter's weight. Referrals were welcomed by the other parents; however, one aspect that made attending weight management services challenging was location and time of consultations. The biggest challenge to three of the parents in Study 2 was attending consultations because they took place within normal working and school hours which meant working parents and children had to take time off from their respective obligations. This confirms perceptions and studies indicating service accessibility is a major barrier for parents of children with obesity in Australia.

3. Assessment: The health professionals believed accurate assessment was necessary because they needed to treat the actual reason for the child's weight. This included assessing if there are medical indications, genetic indications or behavioural issues contributing to the child's obesity.

These discussions around the process of assessment are consistent with evidence indicating childhood obesity is a complex condition whose causal factors vary case-by-case. The health professionals felt confident in their ability to assess childhood obesity; however, their assessments were often limited by the time allocated to consultations. Time is a common barrier to childhood obesity management reported by health professionals. Time is an element of service capacity that is influenced by funding. Health professionals believed that current funding models did not match the complexity of childhood obesity. Some clinicians attributed the inadequacy of funding to the fact that the Australian healthcare system had not classified childhood obesity as a chronic disease even though the resources necessary to treat it are similar to those of other chronic diseases. Resource restraints such as time and funding pushed health professionals to treat childhood obesity in an acute model of care that was perceived to be ineffective, this was especially clear in the accounts of health professionals practicing in a hospital setting.

Assessments were not a topic that parents addressed in their interviews. Instead they spent more time discussing treatment.

4. Treatment: Treatment was viewed by the health professionals as a response to assessment and referred to the suggestions that health professionals made to families (usually health-related behaviour changes) as well as the process of helping families implement these changes.

The main issues health professionals encountered with families in trying to treat childhood obesity involved engagement barriers. These included attrition, adherence and maintenance. Health professionals regularly encountered parents who were resistant to change or who found difficulties getting other family members to change. They suggested getting families to make changes (adherence) required more than providing education around nutrition and physical activity information.

My studies indicated that health professionals and parents for the most part shared similar perceptions of the barriers that families face in childhood obesity treatment. Parents from Study 2 discussed the impact of family dynamics, including partner support, and of competing family schedules on the ability to implement health-related changes in the household. Furthermore, all four parents commented on how introducing and maintaining these changes strained their relationships with their children.

The health professionals in Study 1 were aware of these difficulties yet they viewed parents' abilities to implement changes as an indication of parenting. Parenting contributed to family dynamics, particularly in relation to distribution of power. The distribution of power amongst family members in the household was an important factor for successful implementation of health-related changes. These findings and the greater literature indicate that health professionals should work with families to develop solutions to improve the health of the entire household, but my study and others indicate that health professionals are poorly prepared for family-based management. The health professionals in Study 1 lacked the training and resources necessary to be able to effectively treat childhood obesity through family-based approaches.

Clinical guidelines acknowledge applying a multidisciplinary approach to management is ideal, but access to multidisciplinary services is limited. The health professionals in my study indicated multidisciplinary teams are not just ideal but necessary to effective childhood obesity management. The issues health professionals and parents

encountered around family dynamics demand the expertise and skills of mental health professionals.

Additionally, health professionals indicated a lack of support from within the health infrastructure hindered their ability to provide an adequate quality of care. This included lacking access to training, appropriate referrals and resources, especially funding. Funding is a resource that influences the capacity of a service to provide treatment and that is sorely lacking in Australian paediatric weight management. Health professionals and the greater literature recognise this lack of support disincentivises practitioners from addressing childhood obesity and lead to perceptions of futility and indifference amongst health practitioners. The result of these disincentives can be delayed diagnosis and delayed interventions, which ultimately indicates that without some change to the current health infrastructure or environment, little is likely to change.

Finally, health professionals (Study 1) but not parents (Study 2) recognised the impact of societal and environmental barriers to childhood obesity management. Stigma was the main social barrier discussed by every health professional. They were aware of the sensitivities of the issues around weight and how parents could be easily offended. The greater literature confirms resistance, anger and taking offense are usual reactions from parents when presented with a diagnosis. The health professionals were also mindful that such reactions could be associated with feelings of parental guilt. Interestingly, while none of the parents mentioned feeling stigmatised themselves, Jan (Case Study 4) indicated she now felt guilty for not having addressed her daughter's weight earlier, and that watching her daughter suffer health consequences, related to her weight, saddened her.

For the health professionals, environmental influences were largely to blame both for the cause of childhood obesity and the inability of families to maintain health-related behaviour changes. They were largely empathetic to the fact that family life could be chaotic and parents generally prioritised aspects of their lives that they viewed as most important. The accessibility, affordability and availability of calorie-dense, palatable foods were difficult for parents to resist when they themselves were overwhelmed with the work-life balance. While parents (Study 2) did not explicitly mention the environment as a barrier, the parents of adolescents did mention how they were unable

to control what the children ate when they were out of their care and left to their own devices. This indicates these foods are so accessible that parents feel that they can only act as a barrier to the impact of the environment by managing and monitoring food and activity practices within their own homes.

In conclusion, these findings, when contextualised in contemporary literature, reinforce the need for a systems approach to childhood obesity management. This includes having a health infrastructure that supports the practices of health professionals so that optimal management, outlined in clinical guidelines, can be achieved. Ultimately, the policies required to support sustainable behaviour change initiated by clinical management are the same as those required to prevent childhood obesity from occurring. These studies suggest the messages from the management setting are not different to those from preventative health, if anything, they emphasise the risk of inaction on the health outcomes of Australia's children.

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Appendix 1: Research Brochure

Who are we?

Researchers from VictoriaUniversity who are seeking parent volunteers to participate in interviews regarding child health.

Why?

We want to help policy makers and health professionals provide more effective and informed services for children with weight issues in the community and Australia-wide. To do this we want to know what YOU, as a parent of a child in a service, thinks about child weight and the management of child weight.

How you can help

Participate in an **audio-recorded private and confidential interview** with one of our supportive and friendly researchers.

Where?

In-clinic or on the phone. Choose a time and place best for you!

When? Whenever!

Our researchers are flexible so pick a date and time that suits you.

How will you benefit?

You can contribute your **experience and knowledge** as a parent to help us understand some **key issues** you would like addressed in your experience with your child's weight management.

We understand your time is valuable. We would like to show our appreciation for participants with a **$10 Coles/Myer voucher** following the interview.

Participating in this research could benefit future approaches to child weight-management.

Who to Contact

If you would like to participate in the following research please contact our office directly either by email or phone.

sally.chislett@live.vu.edu.au

Tel: (04) 3111 1902

Alternatively, you can give consent for us to contact you via your child's healthcare practitioner.

Victoria University

College of Health and Biomedicine
Centre for Chronic Disease Prevention and Management
WCHRE Building
Sunshine Hospital
176 Furlong Road
St. Albans VIC 3021

Phone: 04 3 111 1902
E-mail: sally.chislett@live.vu.edu.au.

Help us understand *your* experience as a parent

Do you currently have a child between the ages of 4-12 who is being seen by a Health Professional for weight issues?

Come have a chat to us!

VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

Appendix 2: Demographic Information on Health Professionals

VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

Perceptions of Health Professionals and Parents of Children Undergoing Weight-Management Therapy

Demographic information of health professionals

What is your health profession?

- GP
- Paediatrician
- Dietician
- Physiotherapist
- Psychologist
- Other (please specify)

How many years have you been a practising in your currentfield?

- Less than 2 years
- 2-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 25+

How many years have you been practising in your current field in Australia?

- less than 2 years
- 3-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26-30 years

4. Where do you practise? Tick all that apply.

- ◯ Hospital
- ◯ Community Health Clinic
- ◯ Private practice
- ◯ Other (please specify)

5. In which suburb(s) do you practise?

6. How many cases of childhood obesity have you managed during your time as a practitioner?

- ◯ 1-5
- ◯ 6-10
- ◯ 11-20
- ◯ 20+

7. Are you currently managing a child for obesity?

- ◯ Yes
- ◯ No

8. Are you a parent?

- ◯ Yes
- ◯ No

9. What is your gender?

- ◯ Female
- ◯ Male
- ◯ Other (please specify)

Appendix 3: Demographic Information on Caregivers

VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

Perceptions of Health Professionals and Parents of Children Undergoing Weight-Management Therapy

Demographic information of caregivers

1. What is your relation to the child undergoing treatment?

- ◯ Mother
- ◯ Father
- ◯ Grandmother
- ◯ Grandfather
- ◯ Uncle
- ◯ Aunt
- ◯ Legal Guardian
- ◯ Other (please specify)

2. What is your age?

- ◯ 18 to 24
- ◯ 25 to 34
- ◯ 35 to 44
- ◯ 45 to 54
- ◯ 55 to 64
- ◯ 65 to 74
- ◯ 75 or older

3. Approximately how long have you lived in Australia?

- ◯ Less than 1 year
- ◯ 1-5 years
- ◯ 6-10 years
- ◯ More than 10 years

4. In which postcode do you currently reside?

- [ ] 3020
- [ ] 3021
- [ ] 3022
- [ ] 3036
- [ ] 3038

Other (please specify)

5. In which country were you born?

- ◯ Australia
- ◯ Other (please specify)

6. In which country was the child undergoing treatment born?

- ◯ Australia
- ◯ Other (please specify)

7. Which would you identify as your first language?

- ◯ English
- ◯
- Vietnamese
- ◯ Maltese
- ◯ Hindi
- ◯ Mandarin
- ◯ Greek
- ◯ Other (please specify)

Appendix 4: Perceptions Interview Schedule

Interview Code Number:	HP or P
Interviewer:	Wai-Kwan Chislett
Location:	
Date/time:	
Length of Interview (min):	

Interview Protocol: Perceptions of childhood overweight and obesity —health professionals

Check list of documents:

- Interview Protocol sheet
- Consent Form
- Demographic Questionnaire
- BIPQ
- Gift Voucher
- Business card

Check list of tools:

- Livescribe Pen
- Recording Device

	Objective	Script and example questions
1.	Explanation of project/ interview schedule/ consent	Hello, my name is_____. I am from Victoria University and am trying to understand perceptions of child weight issues/obesity. Thank you for agreeing to participate in this interview. We are very interested to hear what you as a HP/ parent have to say about your experiences and thoughts around childhood obesity/weight issues. This interview is a way for you to share what you find to be key issues in childhood obesity so people working in public health policy and in the service sector can be informed about experiences from the ground level - and then can make decisions on how to address the issues. This interview is anonymous, which means your identity will be kept confidential. The information that you provide will not be linked directly to you. The interview will last for approximately one hour and will be recorded with an audio device. If you wish to continue past the time frame (60 minutes), I am happy to stay later. If you have any questions during the interview, please do not hesitate to ask. If you do not feel comfortable answering a question, you may choose not to answer it. You can stop the interview at any time for any reason. Finally, if you would like to withdraw any information you've provided after the interview, you can contact me directly and I will withdraw it from the collected data.
2.	Allow participant to ask questions/raise concerns	Do you have any questions about the interview or our intentions?
3.	Collect consent and demographic information	So, after the explanation of what we are going to talk about today are you happy to continue with the interview? • Are you happy for me to begin recording? • Interviewer to read consent form and ask participant to sign. • Interviewer to give demographic survey to be completed after consent form.
4.	Gather background information/context	I'm interested in your experiences with child weight issues; and am hoping to get an understanding of your thoughts about child weight issues; but first I'd like to know a bit about you. • Can you tell me a bit about yourself?
5.	Ideas about child health	• As a health professional, in your opinion, what do you think to be the main indicators/ signs of child health/ healthy child? • When would you notice that a child's health becomes a concern? • Why do those things concern you? What concerns you most? • Does your child's weight concern you as a parent?

6.	Ideas about weight (in relation to health)	• How would you define childhood obesity or child weight issues? • What do you think are the main causes/consequences/challenges to managing this condition? • What do you think can be done to better assist you in managing this condition? (i.e. services, environment, policy)
7.	Conclude and thank participant	• Is there anything you would like to add that you didn't have a chance to speak about? • Are there any questions you have for me before I let you go? • Would you be interested in participating in another interview in the future on this topic? • Thank you again for your time and knowledge. Here's a small token of appreciation from the research team (give gift card). Please feel free to contact me at any time if you have any further questions (give business card).

Appendix 5: Parents' Case Study Interview Protocol

Parents-Interview Prompt: Case-specific Perceptions of childhood overweight and obesity

Check list of documents:

- Interview Protocol sheet
- Consent Form
- Demographic Questionnaire
- BIPQ
- Gift Voucher
- Business card

Check list of tools:

- Livescribe Pen
- Recording Device

	Objective	Script and example questions
1.	Explanation of project/interview schedule/ consent	Hello, my name is_____. I am from Victoria University and am trying to understand your personal experience of child weight issues/obesity. Thank you for agreeing to participate in this interview. We are very interested to hear what you as a parent have to say about your experiences and thoughts around your child's health. This interview is a way for you to share what you find to be key issues you experience with Child X's weight so people working in public health policy and in the service sector can be informed about experiences from the ground level- and then can make decisions on how to address the issues. This interview is anonymous which means your identity will be kept confidential. The information that you provide will not be linked directly to you. The interview will last for approximately one hour and will be recorded with an audio device. If you wish to continue past the 60 minute timeframe I am happy to stay later. If you have any questions during the interview, please do not hesitate to ask. If you do not feel comfortable answering a question you may choose not to answer it. You can stop the interview at any time for any reason. Finally, if you would like to withdraw any information you've provided after the interview you can contact me directly and I will withdraw it from the collected data.
2.	Allow participant to ask questions/raise concerns	Do you have any questions about the interview or our intentions?
3.	Collect consent and demographic information	So after the explanation of what we are going to talk about today are you happy to continue with the interview? • Are you happy for me to begin recording? Interviewer to read consent form and ask participant to sign. Interviewer to give demographic survey to be completed after consent form.

4.	Gather background information/context	I'm interested in your experiences as a parent and am hoping to get an understanding of your thoughts about issues you think are important with regard to Child X's health; but first I'd like to know a bit about you. • Can you tell me a bit about yourself and Child X?
5.	Ideas about child health	• How did you end up coming to the clinic for child x's weight? • When did child x's weight become a concern to you? • Why do those things concern you?
8.	Ideas about Prevention/ Management/ Treatment	• What do you think would have made you realise earlier that Child X was at risk? • What do you find to be the most difficult aspect of dealing with Child X's weight? • Do you think the current treatment is helping? What advice were you given?
9.	Conclude and thank participant	Thank you for talking to me about this very important issue. I really appreciate your opinion and honesty. • Is there anything you would like to add that you didn't have a chance to speak about? • Are there any questions you have for me before I let you go? • Would you be interested in participating in another interview in the future on this topic? • Thank you again for your time and knowledge. Please feel free to contact me at any time if you have any further questions (give business card).

Appendix 6: Thank You Letter to Health Professionals

19th January, 2017

Dear health professional,

Thank you for your participation in the PhD project: Perceptions of health professionals and parents of children in weight management therapy: prevention, intervention and policy implications.

As a small token of appreciation, I have included a $10 Myer/Coles gift voucher.

Your contribution is essential and valuable to assisting address the growing health concern of childhood obesity in Australia.

Kind Regards,

Wai-Kwan Chislett

Appendix 7: Thank You Letter to Parents

27th June, 2017

Dear parent,

Thank you for your participation in the PhD project: Perceptions of health professionals and parents of children in weight management therapy: prevention, intervention and policy implications.

As a small token of appreciation, I have included a $10 Myer/Coles gift voucher.

Your contribution is essential and valuable in assisting to better the management of child health in Australia.

Kind Regards,

Sally Chislett

Appendix 8: Project Information Sheet

Perceptions of health professionals and parents of children undergoing weight-management therapy: Treatment, intervention and policy implications

Who is conducting the project:

The project is being conducted through the College of Health and Biomedicine (Centre for Chronic Disease Prevention and Management) at Victoria University

Principal investigator: Professor Maximilian de Courten (maximilian.decourten@vu.edu.au)

Co- investigator: Associate Professor Craig Fry (craig.fry@vu.edu.au)

PhD Candidate: Miss Wai-Kwan Chislett (sally.chislett@live.vu.edu.au)

The project:

Little if any qualitative research exists that shows Australian health professional and parental perceptions of childhood obesity from the treatment setting. The majority of research exploring perceptions in childhood obesity relies on quantitative methods of data collection and analysis. How health professionals and parents of children in treatment are managing this growing health concern, barriers to treatment and the overall ability of the current health system to combat the rise of childhood obesity is an unexplored area. This qualitative PhD project will allow health professionals (HPs) and parents to share their perceptions about childhood obesity through the use of **60-90minute, audio-recorded, semi-structured interviews** from a setting that has yet to be explored in Australia. The advantage of the semi-structured interview approach is that is allows participants to bring up issues they identify to be important to the topic that have yet to be found in the literature. This project provides a platform for key stakeholders to share their views on how they perceive the current landscape of childhood obesity prevalence, prevention and treatment. The findings will contribute to filling this gap in the literature; and have the potential to inform future services and policy to address the needs of both caregivers (parents) and healthcare professionals in the treatment setting.

Who we would like to speak to:

-**Health professionals and researchers** from **hospital, private practice and community settings** who have been involved in the treatment of a child/ children (4-12 years old) for overweight or obesity. A health professional includes an **Australian qualified** dietitian, paediatrician, GP, endocrinologist, physiotherapist, or other allied health professional.

-**Parents** of children who are undergoing or who have undergone weight-management therapy.

Where will interviews be conducted?

Interviews will be conducted at a location that is convenient for the participant- most likely for health professionals, at their offices. Interviews for parents can be organised to be conducted at a location that has been agreed upon by both the interviewer and the parent.

Contact:

If you are interested in participating in this research you can contact Wai-Kwan Chislett via email at sally.chislett@live.vu.edu.au or mobile 0431111902; or a member of the research team will be happy to contact you via phone and/or email to discuss any questions you have about the project; and organise a suitable time to run an interview.