ETHICAL CONSIDERATIONS IN THE PREVENTION OF CHILDHOOD OBESITY

Yoshna Ishwarlal Kooverjee

Thesis presented in partial fulfilment of the requirements for the degree of Master of Philosophy (Applied Ethics) at Stellenbosch University.

Supervisor: Dr L.M. Horn

Date: December 2018

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

December 2018

ABSTRACT

Childhood obesity is a global pandemic, the prevention of which is a public health priority. The aim of this thesis is to explore the ethical issues that arise when designing, implementing and assessing public health interventions to prevent childhood obesity. As childhood obesity is a social justice issue, ethical analysis of such interventions must utilise frameworks with a social justice orientation.

Public health ethics differs from ethics at the individual level therefore moral theories used in individual medicine are unsuitable for application in public health. The well-being theory of social justice recognises that there are multiple causes of systematic disadvantage, not just in health, but in social, economic and political aspects of life and requires that we address these social and economic determinants which compound insufficiencies in wellbeing. This is particularly relevant in interventions targeting childhood obesity, as evidence has shown the impact of socio-economic and environmental factors as a major contributor to the problem.

Where moral theory may not be able to provide enough concrete guidance, the use of ethical frameworks is of practical assistance. Ethical frameworks compatible with different moral theories and incorporating an analytic tool would be particularly useful in the South African public health context. Three such ethical frameworks are those of Nancy Kass, Nuffield Council on Bioethics, and Andrew Tannahill. These are compared for ease of use, applicability to different stages of interventions and specific relevance to childhood obesity.

An ethical problem in childhood obesity interventions is the issue of who is responsible for childhood obesity. The personal responsibility paradigm is problematic, as it ignores social determinants of health leading to childhood obesity and results in victim-blaming. The role of the parents and the extent to which the state should intervene when childhood obesity is regarded as medical neglect are considered.

Obesity prevention as a societal responsibility has ethical implications for government, schools, industry and society in addressing the obesogenic environment. The ethics of food advertising and marketing to children in South Africa in particular exploits the vulnerability of children and is aggravated by ineffective regulation and insufficient legislation.

Stigma associated with childhood obesity has become a well-documented phenomenon and is another major ethical concern. A good understanding of stigma is provided by Link and Phelan's conceptualisation, all the components of which occur in childhood obesity. Stigmatisation of obese youth is pervasive, occurring across multiple domains and from

various sources, and results in adverse psycho-social, academic and physical consequences.

Two aspects of stigma from a public health perspective are considered. The first is the perpetuation of stigma through the preference of certain health identities. The second is its adverse effects on public health efforts, resulting in increased morbidity and mortality. Evidence shows that stigma is harmful on the individual and the public health level and is neither useful nor ethical as a motivator for weight loss. Stigma reduction is recommended in the planning and assessment of childhood obesity interventions.

I conclude that the prevention of childhood obesity in South Africa is a matter of social justice and that interventions be assessed by the Nuffield Council on Bioethics' Stewardship framework.

OPSOMMING

Kinderobesiteit is ’n wêreldwye pandemie en die voorkoming daarvan is ’n openbaregesondheidsprioriteit. Die oogmerk met hierdie tesis is om die etiese kwessies te ondersoek wat ontstaan wanneer openbaregesondheidsintervensies vir die voorkoming van kinderobesiteit ontwerp, geïmplementeer en beoordeel word. Aangesien kinderobesiteit ‘n sosiale geregtigheids kwessie is, moet etiese analise van sulke intervensies raamwerke gebruik met ’n sosiale geregtigheidsoriëntering.

Openbaregesondheidsetiek verskil van etiek op die individuele vlak en daarom is morele teorieë wat in individuele geneeskunde gebruik word nie geskik vir toepassing in openbare gesondheid nie. Die teorie van maatskaplike geregtigheid erken dat daar meervoudige oorsake vir sistematiese benadeling is, nie net in gesondheid nie, maar ook in die maatskaplike, ekonomiese en politieke aspekte van die lewe, en dit vereis dat ons hierdie maatskaplike en ekonomiese determinante aanspreek wat ontoereikendhede in welsyn vergroot. Dit is veral ter sake by intervensies wat op kinderobesiteit gemik is, aangesien daar bewys is dat die impak van sosio-ekonomiese en omgewingsfaktore aansienlik tot die probleem bydra.

Waar die morele teorie dalk nie genoeg konkrete leiding verskaf nie, is die gebruik van etiese raamwerke van praktiese hulp. Etiese raamwerke wat met verskillende morele teorieë versoenbaar is en waarby ’n ontledingsinstrument geïnkorporeer kan word, sal veral in die Suid-Afrikaanse openbaregesondheidskonteks nuttig wees. Drie van hierdie etiese raamwerke is dié van Nancy Kass, die Nuffield Raad op Bio-etiek, en Andrew Tannahill. Die raamwerke word vergelyk op grond van gebruiksgerief, geskiktheid vir verskillende intervensiestadiums en spesifieke relevansie vir kinderobesiteit.

’n Etiese probleem by kinderobesiteitintervensies is die kwessie van wie vir kinderobesiteit verantwoordelik is. Die paradigma van persoonlike verantwoordelikheid is problematies aangesien dit die maatskaplike determinante van gesondheid wat kinderobesiteit veroorsaak, ignoreer en tot slagofferblamering lei. Die rol van die ouers, en die mate waartoe die staat behoort in te gryp wanneer kinderobesiteit as mediese verwaarlosing beskou word, word oorweeg.

Die voorkoming van obesiteit as ’n samelewingsverantwoordelikheid het etiese implikasies vir die regering, skole, industrie en die samelewing wat betref die aanpak van die obesogeniese omgewing (die skadelik vetsugtige omgewing). Die etiek van voedseladvertering en -bemarking aan kinders veral in Suid-Afrika buit die kwetsbaarheid van kinders uit en word deur oneffektiewe regulering en onvoldoende wetgewing vererger.

Die stigma wat met kinderobesiteit geassosieer word, het ’n goed gedokumenteerde fenomeen geword en is ’n belangrike bykomende etiese kwessie. ’n Goeie insig in stigma word voorsien via Link en Phelan se konseptualisering, waarvan al die komponente by kinderobesiteit voorkom. Die stigmatisering van vetsugtige kinders is diepgaande, dit ontstaan oor verskeie domeine en uit verskeie bronne, en dit het nadelige psigomaatskaplike, akademiese en fisieke gevolge.

Twee aspekte van stigma word vanuit ’n openbaregesondheidsperspektief oorweeg. Die eerste is die voortbestaan van stigma deur voorkeur aan bepaalde gesondheidsidentiteite. Die tweede is die nadelige gevolge vir openbaregesondheidspogings, wat tot verhoogde morbiditeit en mortaliteit lei. Daar is aanduidings dat stigma skadelik op die vlak van individuele en openbare gesondheid is, en as motiveerder vir gewigsverlies is dit nóg nuttig nóg eties. Stigmavermindering word aanbeveel wanneer kinderobesiteitintervensies beplan en beoordeel word.

Ek kom tot die gevolgtrekking dat die voorkoming van kinderobesiteit in Suid-Afrika ’n kwessie van maatskaplike geregtigheid is en dat intervensies volgens die Nuffield Raad op Bio-etiek se Rentmeestersraamwerk beoordeel moet word.

DEDICATION

To Nilesh, Divya and Nikhil

Thank you for your unwavering support and patience.

And to my parents

Thank you for your practical assistance and encouragement.

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to my supervisor Dr Lyn Horn for seeing this thesis through to completion with me. Thank you for the gentle guidance with which you challenged me to refine my thinking.

TABLE OF CONTENTS

List of Figures

List of Tables

CHAPTER 1: Introduction

In June 2008 Time magazine published a special health issue titled “Our Super-Sized Kids”. [Time, 2008] The cover image depicted a young boy, ice-cream cone in hand, standing on a skateboard – a fairly typical childhood image, one would assume…except that the skateboard was sagging in the middle, straining under the weight of the obese child clutching his double-scoop ice-cream cone. Once the shock value of the image has worn off, it is easy to dismiss that issue’s headline, “an in-depth look at how our lifestyle is creating a juvenile obesity epidemic” as an American problem, with little relevance in a country known for its high HIV burden. Yet, two years before Time published that issue, South Africans read the sensational news headline “SA becoming a nation of unhealthy fatties” with the dramatic opening line, “Shocking medical statistics should put all parents on high alert about how they are raising their children.” [Farber, 2006]

Historically considered an exclusively first-world problem, recent decades have seen increasing awareness that this is no longer the case, prompting the creation of a new word, “globesity”, to describe this worldwide epidemic. Defined as “obesity seen as a worldwide social problem” [Collins English Dictionary, 2016], the word globesity arose out of a landmark World Health Organisation report seeking to address this complex disease. [World Health Organisation, 2000] Three key points emerged from the WHO report: Firstly, obesity is a global problem, affecting developed and developing countries. In developing countries it is an indicator of social, economic and cultural problems on a large scale. Secondly, obesity affects children as well as adults. Effective prevention and management of childhood obesity is needed if the problem is to be averted in adulthood. Thirdly, obesity is a problem to be tackled at the population-health level, as it is not just a disease of individuals. A coordinated effort from all sectors of society will be required to address this problem effectively.

Why the emphasis on prevention, instead of medical and surgical management? Childhood obesity treatment consists predominantly of dietary and behavioural modification [Barlow, 2007] and is mostly ineffective. [Van der Merwe, 2012] Pharmacotherapy in children is restricted to just one relatively safe medication (Orlistat), which is only approved for use in extremely obese children over the age of 12 years (i.e. adolescents), in whom lifestyle interventions have failed. [Rogovik, 2011] Bariatric surgery, in which the stomach is surgically bypassed, is not routinely performed on children and is associated with serious risks and complications and unknown long-term safety and efficacy. [Han, 2010] Furthermore, bariatric surgery in children raises many moral concerns, which require better evidence to justify potentially harmful procedures in this vulnerable group. [Hofmann, 2013] It

is apparent then that prevention remains our best option to manage this global problem, but the solution is not as straightforward as it appears at first glance.

At its most basic level, obesity is caused by an excess energy intake relative to energy expenditure – or as the NHS patient information website puts it, “eating too much and exercising too little”. [NHS, 2016] However, multiple external factors influence how and why we eat too much and move too little. These include the availability and affordability of foods, access to exercise opportunities, government regulations and many other influences on choices and lifestyle. It is these factors, termed the obesogenic environment, that public health targets in its efforts to overcome obesity.

The South African Department of Health recognises obesity as part of the quadruple burden of disease threatening population health in this country. [National Department of Health, 2015] First identified in 2009, the quadruple burden consists of HIV/AIDS, injury and violence, communicable diseases other than HIV, and non-communicable diseases. [Mayosi, 2009] Health minister Dr Aaron Motsoaledi plans to reduce obesity by 10% by the year 2020, as outlined in the Strategy for the Prevention and Control of Obesity in South Africa. [National Department of Health, 2015] The strategic plan recommends intervention at a population level, based on “policy, context and environmental change”. One of its six goals is to “support the prevention of obesity in early childhood”, with early childhood defined as the ages in-utero to 12 years. The report states that childhood obesity is specifically targeted due to the potentially greater beneficial outcomes from interventions focused on this group. Among the most cost-effective interventions it identifies are school-based interventions, mass media campaigns, taxes on certain unhealthy foods and regulation of food advertising.

The ethical implications of these sorts of public health interventions can range from neutral to controversial. Media campaigns to educate children about healthy eating can be ethically benign, for example; but if those campaigns are prejudiced or stigmatizing against overweight children, then they become ethically problematic. Certain ethical concerns are almost synonymous with public health, as illustrated by the media and public reaction to the so-called “sugar tax” arising from the afore-mentioned strategic plan. Despite being an appropriate and effective public health intervention, a proposed 20% tax on sugar-sweetened beverages was met by concerns that South Africa would become a “nanny state” [Makholwa, 2014] - a phrase frequently heard in public health ethics as an argument against paternalism.

The aim of this thesis is to explore the ethical issues that should be considered when public health interventions intended to prevent childhood obesity are designed and implemented. I will argue that childhood obesity is a social justice issue and therefore, public health

interventions which address childhood obesity prevention must be analysed by ethical frameworks oriented towards social justice. I will begin by discussing the extent of the problem of childhood obesity, with emphasis on the South African context. The consequences of childhood obesity will be clarified, showing why it requires intervention and how it can be prevented through a public health approach, addressing the obesogenic environment.

Public health differs from individual-level medicine in its focus and methods; it is thus not surprising that traditional moral theories applied in other fields of medicine may not be readily applicable for an ethical evaluation of public health programs. In Chapter 3 I explore why public health requires a theory which has a social justice orientation. Autonomy is considered *primus inter pares* in medical ethics. In contrast the key dilemmas in public health ethics arise from conflicts between autonomy, beneficence and justice. Three ethical domains have traditionally contributed to public health ethics: an outcomes-based approach (Utilitarian), a human-rights perspective (Liberalist), and an approach which prioritises community or societal interests (Communitarian). [Roberts, 2002] A fourth approach is a well-being theory of social justice which has been developed particularly for public health and takes into consideration the negative impact of social and economic inequalities on dimensions of well-being such as health. [Powers and Faden, 2006] This is particularly relevant to childhood obesity, as I will demonstrate in subsequent chapters. Furthermore, I discuss when paternalism can be justified in public health, as it pertains to obesity prevention. Other values engaged in public health ethics which are relevant to childhood obesity prevention are considered, namely justice and parental obligations to children.

The next chapter, Chapter 4, begins with a discussion on normative frameworks in public health ethics. How to go about assessing interventions from an ethical perspective can be challenging for health care practitioners with limited training in philosophy. In this instance, frameworks can be of great practical assistance in ethical analysis. I have chosen to focus on three frameworks for public health ethics: Nancy Kass's model, as explicated in her article "An Ethics for Public health" [Kass, 2001]; The Nuffield council's Stewardship model [Nuffield council, 2007]; and Andrew Tannahill's model, as outlined in "Beyond evidence – to ethics." [Tannahill, 2008] Each of these frameworks incorporates an analytic tool that can be applied to assess ethical aspects of interventions. I conclude the chapter with a brief comparison of the three frameworks, assessing their suitability for application to obesity prevention programs and identifying the Stewardship model as the preferred model for application to childhood obesity prevention interventions.

Having covered the “Why” and “How” of ethical considerations in childhood obesity prevention, I now focus on the “What”: Two specific ethical concerns regarding interventions to prevent obesity in children will be discussed, which illustrate my argument that childhood obesity is a matter of social justice. First, children are not considered fully autonomous, but they are not without rights either. Chapter 5 covers the issue of who is responsible for children’s health (or lack thereof). The concept of personal responsibility for health is discussed, where I show that childhood obesity is not solely a result of poor lifestyle choices. This is followed by clarification of the moral status and the rights of children. The role of parents, the state and industry in childhood obesity prevention is considered, with a focus on the role of the obesogenic environment as a social justice issue influencing childhood obesity. Particular attention is given to the ethics of advertising and marketing of foods to children, as a contributor to childhood obesity over which children and parents have little control.

Second, interventions aimed at promoting public health can have unintended negative consequences in the form of stigma. Stigma associated with obesity is a well-documented problem, but it is not merely a problem at the individual level. In Chapter 6 I discuss stigma in childhood obesity and its consequences at an individual and a public health level, showing how stigma arising from childhood obesity extends into disadvantage in social, educational and socio-economic domains in later life. Furthermore, the use of stigma as a public health tool is discussed and rejected as being contrary to the fundamental goals of public health. This is followed by recommendations for the evaluation and reduction of stigma in obesity prevention efforts which, unlike stigma reduction strategies in global HIV public health efforts, has been largely ignored in public health responses to obesity.

Finally I discuss my conclusions about the ethical issues raised in the prevention of childhood obesity in Chapter 7, with the recommendation that the prevention of childhood obesity in South Africa is considered a matter of social justice and that interventions are assessed using the Stewardship model and Intervention ladder developed by the Nuffield Council on Bioethics.

CHAPTER 2: Background

2.1: Childhood Obesity in context

Obesity, once considered a problem of affluent developed countries, is now a global pandemic impacting on some of the poorest nations in the world. [Prentice, 2006] Of particular concern is the rising prevalence of childhood obesity worldwide. In 2010, the worldwide prevalence of early childhood obesity was 6.7% compared to 4.2% ten years earlier; this figure is projected to increase to 9.1% by 2020. [De Onis, 2010] While this has been widely accepted as a serious public health problem, agreeing on a common definition of obesity in childhood presents an unexpected challenge.

The World Health Organisation defines overweight and obesity as “abnormal or excessive fat accumulation that presents a risk to health.” Body Mass index (weight divided by height squared) is a simple index widely used to measure overweight and obesity in adults, where a cut-off of 30kg/m^2 equates to obesity and 25kg/m^2 for overweight. The difficulty in children is that BMI fluctuates substantially during normal growth, resulting in different definitions of overweight and obesity, expressed as a percentage of ideal weight for height or BMI- for-age at various percentiles. [Lobstein et al. 2010] Furthermore it is difficult to identify a precise point at which the health risk related to excess adiposity becomes significant for children. In response, the International Obesity Task Force proposed cut-off points related to age and BMI of 30kg/m^2. [Cole, 2000] Since this definition is based on internationally pooled reference data and a set cut-off, it enables comparison of worldwide child obesity and overweight prevalence trends. Although there are differences in rates and patterns of excess body weight in children of developed and developing countries, both show a definite increase overall.

In July 2014, the WHO-led Commission on Ending Childhood Obesity met for the first time to work on a comprehensive response to this global problem. It warned that the most rapid rise in prevalence occurred in low- and middle-income countries, notably in Africa and Asia. South Africa as a country in economic transition has been particularly affected. [Kruger et al, 2005] Shifts towards urbanisation result in increased overweight and obesity, accompanied by the worrying phenomenon of the “double-burden” of disease, in which countries now faced with obesity have not yet overcome historical problems of malnutrition. First described by Popkin in 2001, the double-burden sometimes presents as the disturbing picture of overweight mothers and underweight children in the same household. [Popkin, 2001]

It is not surprising that eradication of undernutrition has been a main focus of public health programs in South Africa, as this problem still persists among children, especially those in

rural areas. [Kruger, 2005] However, the alarming increases in childhood obesity in South Africa pose an especial challenge for public health, demanding solutions to the burdens of these two polar extremes of nutrition. Nationwide nutritional surveys show that the childhood prevalence of underweight (20%) and stunted growth/short stature (10%) has remained constant between the years 1994 and 2005. [Iversen, 2011] In contrast, overweight and obesity in children has increased at an alarming rate between 1994 (overweight 1.2% and obesity 0.2%) and 2004 (13% and 3.3%). [Armstrong, 2011] Paradoxically, stunting has been shown to be a risk factor for later overweight and obesity, [Popkin, 1996] adding another layer of complexity to this public health threat.

So what is the extent of the problem at present? The latest national nutritional survey, SANHANES-1, [Shisana, 2013] paints a worrying picture: South African schoolchildren (ages 6 – 14 years) have a combined overweight and obesity prevalence of 13.5%, compared to the global prevalence of 10%. While all ethnic groups, ages and socio-economic groups are affected, [Pienaar, 2012] marked differences in overweight and obesity patterns are noted between ethnic groups, ages and socioeconomic groups [Rossouw, 2012] as well as between genders. SANHANES-1 confirms that South African girls are more affected by overweight and obesity than boys, across all age groups: the combined overweight and obesity prevalence for girls was found to be 23.6%, compared to 15.5% for boys. One possible reason for this gender difference in obesity prevalence is low levels of physical activity amongst girls. [Mokobane, 2014]

Obesity and overweight is highest in urban informal areas (girls 30.1% and boys 25.2%), followed by urban formal areas (girls 18.3% and boys 17.2%), with the lowest prevalence rates found in rural areas (girls 17% and boys 11.5%). This may be attributed in part to the nutrition transition seen in developing countries: In urban populations, traditional diets rich in grains and low in animal fats and sugar have been abandoned for Western diets, high in fats and sugar. [Iversen, 2011] Urbanisation is also linked to lower levels of physical activity in children. [Kruger, 2006] In contrast, children in the rural areas continue to experience undernutrition as a significant health challenge, mainly affecting young children. [Iversen, 2011]

Generally, mean BMI was found to increase with age. However, it was previously reported that while this pattern was typical for black girls (with an increase in combined overweight and obesity from 11.9% at age 6, to 21.8% at age 13 years), white girls showed a decrease in overweight and obesity with age (25.4% at age 6, to 14.5% at age 13 years), which could be attributed to cultural beliefs. [Armstrong, 2006] Amongst white girls the Western ideal of beauty prevails, according to which thinness is desirable. [Clark, 1999] Different studies

have reported on cultural perceptions that impact on overweight and obesity trends in black South African communities: Amongst black girls, being overweight is culturally desirable, as it is seen as an indication of happiness and prosperity. [Mvo, 1999] Of particular significance in Sub-Saharan Africa (against the background of high HIV prevalence) is that thinness is associated with HIV, whereas overweight and obesity are interpreted as a sign of being free of HIV. [Clark, 1999] Similarly, in certain rural communities babies are overfed, as fat infants are perceived to be healthy. [Mamabolo, 2005]

2.2 Consequences of childhood obesity

Amongst health professionals too (as recently as just over a decade ago) childhood obesity was widely thought to be mainly a cosmetic problem or otherwise of importance only because of health consequences in adulthood. [Reilly, 2003] Must and Strauss classified the health consequences of childhood obesity into immediate, intermediate and long-term categories. [Must, 1999] While many obese children may not experience complications until much later in life, it affects most organ systems in childhood, with immediate consequences to health. [Must, 1999] These include pulmonary problems (asthma and sleep apnoea), musculo-skeletal problems (slipped capital femoral epiphysis and Blount's disease), gastroenterological problems (gallstones and fatty liver), neurological problems (pseudotumour cerebri) and endocrine diseases (insulin resistance, non-insulin-dependent diabetes and hyperandrogenaemia.)

Psycho-social problems due to stigma and bullying may be more destructive initially than medical effects of obesity. [Van der Merwe, 2012] Low self-esteem, negative self-perception and depression are documented effects of the problem. [Rossouw, 2012] Obese children are also unable to fully take part in educational and recreational activities. [WHO, 2015] Weight problems are further compounded by withdrawal from physical activities due to discrimination and social rejection. [Doak, 2006]

Medium-term health effects of childhood obesity include increased risks of developing cardiovascular disease (hypertension and hyperlipidaemia) and persistence of obesity into adulthood [Must, 1999]. A key predictor for adult obesity is its presence during childhood, especially during adolescence [Deckelbaum, 2001] with these children having double the risk of adult obesity compared to children with a healthy weight. [Serdula, 1993]

This leads to the development of long-term consequences in adulthood, namely cardio-metabolic morbidity, in the form of diabetes, hypertension, ischaemic heart disease and stroke; increased risk of disability pension; and premature mortality. [Reilly, 2011]

It is thus evident that childhood obesity is not merely a problem of aesthetics, but has very real consequences for health in childhood, adolescence and beyond. In June 2013 the American Medical Association recognised obesity (traditionally regarded as a risk factor for disease) as a disease state in its own right, requiring interventions to advance not just its treatment, but also its prevention. [AMA, 2013]

2.3 Childhood obesity as a Public Health issue

While not everyone is in agreement that obesity is a disease, there is consensus that its consequences are severe enough to warrant intervention. Evidence shows that treatment of established obesity is difficult and seldom effective. [Van Der Merwe, 2012] Instead, obesity is a condition well-suited to a public health approach, where a focus on prevention is indeed better than cure. Prevention interventions target different settings. Particularly in children, prevention is recognised as the management plan of choice across multiple settings, including clinical, school and family bases. [Pienaar, 2012] Part of what makes the condition difficult to manage is its complex nature – contrary to the supposition that simple overeating is the sole cause of obesity, multiple causative factors require consideration, including genetic, environmental and social components. [Mchiza, 2013]

The two root causes, increased energy intake and reduced physical activity, are promoted by what has been termed the “obesogenic environment.” [Caballero, 2007] This refers to a built environment characterised by reduced opportunities to engage in physical activity, from limitations in safe walking, cycling and recreational areas, to increased need for long commutes and car use. In addition, the obesogenic environment provides ample opportunity for the consumption of low-cost energy-dense foods, such as fast foods and sugary drinks, as well as creating an increased dependency on foods prepared and consumed outside the home. [Caballero, 2007]

In South Africa industrialisation and urbanisation are typically linked to adverse changes in diet, not just from increased consumption of the “wrong” foods, as described above, but also reduced availability and access to affordable healthy foods. [Kruger, 2005] For children the obesogenic environment creates a downward spiral towards ill health: crime and overcrowding lead to less outdoor physical activity for recreation; urbanisation and safety fears result in fewer children walking to school; these are associated with increased sedentary activities, typically increased TV watching, which is associated with increased snacking on energy-dense foods and drinks. [Mchiza, 2013] Of particular concern is TV advertising targeted at children, with a clear link evident between prominent marketing of foods of poor nutritional value and children’s food choices. [Cairns, 2009]

Developing obesity prevention strategies necessitates clearly defining the current health status of South African children, which has been achieved in the form of the Healthy Active Kids South Africa (HAKSA) report card. [HAKSA, 2014] Based on peer-reviewed research findings, the 2014 report card has highlighted some alarming trends. Regarding physical activity, more than half of children aged 6-18 years do not have access to play equipment or recreation facilities and children spend three or more hours a day watching television. Screen-time in general is high, with cell phone use being the leisure activity of choice. With regard to eating habits, children often buy food from informal vendors or school tuckshops, where healthy choices are seldom on offer, and fast food is consumed more than three times a week by 70% of adolescents. HAKSA points out the worrying fact that these tuckshop sales are a source of income for many schools; subsequently, choice of foods on offer is based on popularity instead of nutritional content. [Mokabane, 2014]

Successful obesity prevention programs would have to address these multiple causative and contributing factors. Childhood is considered an optimal stage to focus on development of healthy lifestyle habits. [Kruger, 2005] This fits in with the life-course approach to obesity prevention [Uauy, 2010], a modern approach in which interventions are targeted at age-specific behaviours, from foetal life to infancy and childhood, adolescence and adult life. The life-course approach also considers different settings in which obesity prevention strategies can be implemented.

Some of HAKSA's recommendations include annual weight and height measurement of primary school children, including annual fitness assessments; national guidelines for school tuckshops; and teacher-training for physical education at schools. Although physical education was re-introduced as a school subject in 2010, after being phased out in 1994, serious challenges to its successful implementation still exist in many South African schools. [Du Toit, 2007] The school system is considered an ideal setting to implement obesity prevention initiatives, as it is where most children can be reached, but parental involvement (the home setting) is also regarded as a crucial component. [Pienaar, 2012] These school, home and neighbourhood -based interventions can be considered "downstream" measures. [Lobstein, 2010]

Additionally, the provision of healthier environments for children is recommended, rather than an emphasis on individual responsibility for obesity prevention. [Danielsdottir, 2015] This comprises "upstream" measures, such as addressing the obesogenic environment to create environments more conducive to healthy lifestyles, and policies regulating commercial marketing of food to children and food production in general. Evans et al propose Social Marketing as a strategy for the prevention of childhood obesity that could influence health

policy. [Evans, 2010] Their conceptual framework uses commercial marketing principles to influence health behaviours at multiple levels, including at a policy level. Citing how change in the social acceptability of smoking resulted in legislative and policy changes, they demonstrate how social marketing can be applied to obesity prevention at this level.

In addition to tailoring prevention strategies to life stages and settings, the US Institutes of Medicine advocates three different levels of prevention: Universal, targeting populations in general; Selective, aimed at high-risk groups; and Targeted prevention, focused on those identified as overweight, with the aim of preventing further weight gain. [Kruger et al, 2005] This approach ensures that the message reaches those for whom it was intended, ensuring maximal outcomes from prevention interventions.

Kruger et al also report on different modes of delivery of intervention programs, ranging from clinical programs provided by healthcare professionals, to non-clinical programs provided by trained individuals and commercial franchises and lastly self-help type programs. All three levels have some value in different settings and focus levels.

From the discussion above, it is clear that there are multiple possible interventions across a range of settings, life-stages and levels for the prevention of childhood obesity. Kumanyika et al point out that it will not be possible to implement these interventions rapidly, and that achieving the desired outcomes will only happen over a long period of time. Furthermore, some interventions may have limited success in socially disadvantaged individuals, further widening the gap between them and the socially advantaged. [Kumanyika et al, 2002] One of the challenges of public health is that interventions often have undesirable consequences of this sort. This is where public health ethics, as a distinct branch of bioethics, comes into action.

CHAPTER 3: Public health ethics: Why obesity prevention raises ethical dilemmas

To understand public health ethics, it is necessary to have a clear idea of what public health entails. Perhaps the best-known definition of public health is that of the Institutes of Medicine: “What we as a society do collectively to assure the conditions in which people can be healthy.” [IOM, 1998] Somewhat more specific is the Royal Colleges of the United Kingdom concept of public health as “the science and art of preventing disease and promoting health through the organised efforts of society.” [Nuffield council on Bioethics, 2007]

Given that public health encompasses a multitude of interventions and settings, it is unsurprising that many definitions of public health exist, ranging from general to specific. Four key features differentiate public health from clinical medicine: Public health focuses on community instead of individuals; it aims to prevent disease and promote health, compared to treatment and cure of existing disease; it involves collective effort from diverse groups of practitioners, often including government involvement; and it is oriented towards social justice, thus it is inherently focused on outcomes. [Faden, 2015; Lee, 2012]

Public health has long realised the significant impact of societal factors on health. A point of contention in the literature is whether, and to what extent, social determinants of health should affect the boundaries and goals of public health. Insofar as poverty, crime rates and war impact negatively on health, should public health aim to tackle these social issues? Put simply, what is the scope of public health? It depends upon whether these social determinants are regarded as part of the mission of public health, or better left to the domain of social and political sciences.

Mann’s conclusion is that public health and human rights are inextricably linked, with public health practitioners having a dual role: not just the protection and promotion of public health, but also of human rights. [Mann, 1997] This approach has been the subject of serious discussion amongst influential thinkers in the field, including Gostin and Gruskin. [Callahan, 2002]

Gostin and Powers take a different approach, arguing that “identifying and ameliorating patterns of systematic disadvantage that undermine wellbeing” is a core feature of public health practice. [Gostin and Powers, 2006] As such, they assert that public health has an obligation to stray into spheres beyond its exclusive expertise, in order to address root causes of ill-health.

While those who believe that health is a personal responsibility would not easily accept certain public health interventions, by its nature public health requires intervention by the state in order to accomplish its goals. This is the second major dilemma in public health: what should be the extent of state involvement in public health? While there is no consensus on the role of the state in public health issues such as childhood obesity, there is general acceptance that governments do have some responsibility for public health, and furthermore, that they need to take into consideration the consequences (both beneficent and detrimental) of their policies that impact public health. [Voight, 2014]

It is this focus on community and population interests that leads to the third and core conflict in public health ethics, namely, the tension between the rights of the individual and the interests of the community. [Mastroianni, 2014] Autonomy is considered *primus inter pares* in medical ethics. In contrast, the key dilemmas in public health ethics arise from conflict between the principles of autonomy and beneficence. Interventions that aim to prevent obesity by imposing lifestyle changes upon the population, such as reduced consumption of high-energy foods, illustrate this conflict.

Consider the controversial “giant-soda” ban proposed in New York a few years ago. [Fairchild A, 2013] In an effort to combat obesity, the New York City Board of Health, in September 2012, approved a proposal to ban the sale of sugar-sweetened drinks larger than 473ml (16 fluid ounces) per serving size. Why should this intervention, aimed at promoting good health, be ethically problematic? Whether the ban is viewed as beneficent or an unacceptable infringement on autonomy, that is to say, paternalistic, depends on the grounding philosophy from which it is regarded.

Paternalism is defined as “interference with a person’s liberty of action justified by reasons referring exclusively to the welfare, good, happiness, needs, interests or values of the person being coerced.” [Dworkin, 1999] It must be noted that the concept of personhood applies to competent adults. It would not be unreasonable to question why paternalism should be an area of concern in childhood interventions; regarding childhood obesity particularly, it is clearly not in children’s best interests to allow them complete autonomy in matters of food preferences. Yet few parents would be willing to relinquish to the State decision-making authority on something as fundamental as what food their children may eat. While children have limited autonomy in accordance with their limited competence, as long as parents protect the rights of their children, parents have the right to raise their children according to their own judgement. [Brennan, 1997] The role of children’s rights and parental rights in childhood obesity is a complex topic, which I will address further later in this chapter and subsequent chapters. My point at this stage is that paternalism is not eliminated from

ethical consideration on the sole basis that the public health interventions under scrutiny are aimed at children.

Much discussion in public health ethics centres on the justification of paternalistic interventions. [Buchanan, 2008] Historically, public health ethics has at its foundations three philosophies: an outcomes-based approach (Utilitarianism), a rights-based approach (Liberalism) and an approach based on prioritising the needs of society and community above the individual (Communitarianism). [Roberts, 2002] A fourth approach, with Aristotelean roots, is a social justice theory which has been developed specifically for public health. [Powers and Faden, 2006]

Utilitarianism, based on the works of Jeremy Bentham, considers the right choice to be the one that produces “the greatest happiness of the greatest number.” [Bentham, 1955] Since public health interventions are focused on producing the maximal health benefit, there is a natural affinity to Utilitarianism, with its consequential, maximizing approach, which would make a reasonable defence of paternalism.

In direct opposition to this view, the rights-based approach prioritises individual autonomy and rights. [Petrini, 2016] This perspective arose out of the work of Immanuel Kant, who argued that people deserve respect due to the fact that they are rational and autonomous agents, able to make their own decisions based on reason. [Johnsen, 2016]

Arising from the rights-based approach, there are two schools of thought: Libertarians and Liberals. Libertarians value individual liberty above all else, and consider the role of the state to be solely to protect individual choice. Attempts to promote health by regulating food sales, for example, would be considered an unacceptable infringement on personal freedom of choice. A significant modification delineates the Liberal position, in which individuals have a right to choice, but also to a right to equal opportunity, without which the right to choice would be worthless. The role of the state is to ensure that a minimum level of health care is available to all, as health is a special need, prerequisite to choice. [Daniels, 2008]

Part of this duty to promote health is to protect citizens from making harmful choices, which could justify certain paternalistic interventions. Especially when those harmful choices are thought to arise from defective decision-making, whether due to lack of knowledge or irrational reasoning, paternalism could be considered justifiable. Dworkin illustrates numerous situations in which rational men would agree to restrictions on liberty imposed by the state, although he cautions that such restrictions should be kept to a minimum. [Dworkin, 1999]

The best known argument against paternalism in public health ethics comes from John Stuart Mill. Now known as the “Harm principle”, Mill asserts that “the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number, is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinion of others, to do so would be wise, or even right.” [Mill, 2006]

However, it is significant that Mill distinguishes three different kinds of liberty interests, not all of which demand absolute protection from state interference. [Powers, 2012] Powers, Faden and Saghai argue that not all liberties are equal in the formulation of public policies, and that a Millian framework can support state interventions in public health ethics.

The third foundation for public health ethics is based on the idea that health is part of a common good, made up of shared virtues, values and ideals that constitute a good society. This communitarian approach seeks to promote health as a good in itself, irrespective of the fact that public health interventions may promote good outcomes or defend human rights. Children’s health is of great significance, because unless children are raised to become “healthy, engaged and responsible adults”, the implication is that society has failed. [Voight, 2014] In this way childhood obesity forces us to reconsider how we function as a society.

A problem faced by public health communitarians is that values considered universal may disregard local cultural norms. [Roberts, 2002] Particularly in parts of South Africa where child mortality is still a real threat, childhood obesity may be locally regarded as a desirable state. In this instance, health is still regarded as a common good, but conceptualised differently.

Interventions to prevent obesity, even paternalistic ones, may thus be more or less successfully defended on an outcomes-based, rights-based or communitarian approach. In practice, paternalism is much more difficult to defend, as demonstrated by the outcome of the “Giant-soda” case mentioned earlier. The New York City Board of Health was taken to court by the American Beverage Association, the National Restaurant Association and other businesses. The ban was subsequently struck down by the New York State Supreme Court in March 2013, and finally laid to rest at the Appeals court in June 2014.

At face value, this decision represents a victory for autonomy against paternalism. What this case illustrates upon deeper consideration, is that public health interventions do not occur in a vacuum. A variety of complex background factors, from commercial interests to historical

factors and governmental regulations, all exert an influence to shape society and consequently public health. [Holm, 2007] Any ethical evaluation of public health interventions to combat obesity is incomplete without consideration of the significant impact of these societal factors in causing and perpetuating the problem, and the necessity of making them part of the solution. Beauchamp points out that the prevailing market-justice ethic, which "emphasizes individual responsibility, minimal collective action and freedom from collective obligations," acts as a barrier to public health protections. [Beauchamp, 1976] He asserts that a public health ethic is in fact a "counter-ethic to market justice", as he identifies a fundamental aim of public health to be "breaking the ethical and political barriers to minimizing death and disability." This is where the fourth philosophical cornerstone of public health ethics, Powers and Faden's social justice approach, demonstrates it strength. [Powers and Faden, 2006]

Their social justice theory recognises that there are multiple causes of systematic disadvantage, not just in health, but in almost every aspect of life, whether social, political or economic. The aims of public health ("twin moral impulses") are "to advance human well-being by improving health and to do so in particular by focusing on the needs of those who are most disadvantaged." Their theory emphasises the fair distribution of common advantages and the sharing of common burdens, in line with Rawls' justice as fairness. [Rawls, 1971] Arising from Aristotelian essentialism, as defended by Martha Nussbaum, and Amartya Sen's Capabilities theory, Powers and Faden's social justice theory is based on the idea that there are universal, objective elements to optimal well-being.

Powers and Faden identify six irreducible dimensions of well-being, of which health is one dimension. The other five are reasoning, self-determination, attachment, personal security and respect. They assert that disadvantage in one dimension can impact on several or even all dimensions of well-being in an exponential manner. Thus justice requires "permanent vigilance and attention to social and economic determinants that compound and reinforce insufficiencies in a number of dimensions of well-being."

Health inequalities affecting children are especially troubling, because children have no control over the social structure and actions of others that govern their health. [Powers and Faden, 2006] Furthermore, public health should ensure that childhood health is adequate, subsequently allowing wellbeing in adulthood, including the cognitive development required to fulfil their roles as adults capable of reason and self-determination. This is in line with Daniels' assertion that health is of special moral importance because protecting normal functioning protects opportunity. [Daniels, 2001] Also based on Rawls' theory of justice as

fairness [Rawls, 1971], Daniels shows how fair equality of opportunity can be extended to healthcare, including early-childhood interventions.

Holm identifies an additional ethical value of relevance in public health, which has particular application in the debate on childhood obesity prevention, namely the duties of parents towards their children. [Holm, 2007]

In interventions concerning children, the issues discussed above are further muddied by questions regarding parental obligations and the rights of children. Children's right to protection from unhealthy influences is identified by Ten Have as one of the background themes to childhood obesity interventions. [Ten Have, 2010] Since the ratification of the UN Convention on the Rights of the Child in 1989, there has been global recognition that children have specific rights that require parents and governments to act in the best interests of the child, to protect their rights, but also to allow families to guide their children's development. [United Nations, 1989] Although children possess these rights, they do not always have the power to exercise them. [Kumanyika, 2011]

Specifically in relation to childhood obesity, children's vulnerability stems from their dependence on adults for food and their own limitations in making good choices. [Kersh, 2011] When it comes to prevention, there is no consensus on whose responsibility it is to ensure that children do not become obese. Is it the job of the one who is to blame for the problem? Ten Have points out the multifactorial causes of childhood obesity, beyond just the parents and the state, which includes the food industry, media, designers of the built environment and others. [Ten Have, 2011] Taking this environmental view implies that responsibility lies beyond the individual (in this case, the parents), raising the question of when, and to what extent, parental autonomy can be over-ridden.

It is thus evident that there are three dimensions to consider: Firstly, children have rights which they may not be able to assert without assistance. Second, parents have the right to raise their children in accordance with their own judgement, within the confines of the law. Third, parents have an obligation to ensure their children's wellbeing, which can be enforced by the state if parental duties are not adequately fulfilled. This conflict is not exclusive to childhood obesity – childhood vaccination is one issue that comes to mind that illustrates conflicts between parental autonomy and state authority in public health. However, specific to childhood obesity is the fact that food is necessary for life and as such, what we eat and how we eat is a fundamental part of who we are as individuals and society. Whether this tips the balance of favour towards parents or the authorities is debatable. I will discuss the issue of responsibility for childhood obesity in greater depth at a later stage.

From the preceding discussion it is clear that ethical dilemmas are inherent in public health policy formulation and application. Childhood obesity prevention carries its own specific ethical aspects, some of which have been introduced here and will be considered in greater depth later. For health professionals to fully engage in public health, a working knowledge of the various ethical dimensions of public health is as important as knowing the methodologies of public health itself. [Roberts, 2002] Roberts and Reich recognise the need for health professionals involved in this field to have “enhanced skills in applied philosophy.” This is where the use of frameworks is helpful, as I will outline in the following chapter.

CHAPTER 4: Frameworks for ethics in public health: How obesity prevention interventions can be assessed

Regardless of whether it is defined in terms of outcomes, rights, virtues and social order, or social justice, public health ethics includes discussion not just of moral theory, but of values, and policy and practice as well. [Dawson, 2008] How can public health ethics exert an influence on policy? As early as 1975, the tasks of public ethics were elucidated by Jonsen and Butler, concluding that public ethics is a process, developing as policy develops, and that compromise, in the form of ranking of conflicting ethical principles is essential in ethical policy-making. [Jonsen, 1975] In essence, this is the definition of a framework. Frameworks can provide concrete moral guidance where general moral concepts cannot, by placing theory in the context of policies and actions. [Childress, 2002]

A criticism of frameworks is that they are used by those "little inclined to engage with the finer points of moral theory." [Upshur, 2012] However, in defence of their use, I would point out that Dawson's taxonomy describes the primary role of theories as justification of actions, whereas frameworks assist in deliberation. [Dawson, 2009] Frameworks are generally pragmatic, he notes, helping us act upon the world. Just as a multitude of definitions reflects the diversity of public health practice, public health ethics comprises a spectrum of frameworks. However, none of these has been identified as the public health framework of choice.

In an effort to find where these frameworks converge towards a unified public health ethics model, Lisa Lee analysed 13 well-known public health ethics frameworks used in the last 15 years. [Lee, 2012] The choice of inclusion in her review was guided by three factors: the prominence of the framework in the field, the impact it created on further development of theories and the extent to which it takes a new approach to the problem. Lee divided the theories into two groups: those that are practice-based, which appear to have arisen from the needs of practitioners, with minimal or mixed philosophical foundations; and those that are theory-based, which attempt to apply the theory to public-health practice.

The theory-based models have differing philosophical foundations, including human rights (Mann, 1996), ethics-of-care (Roberts and Reich, 2002) and political liberalism (Nuffield Council on Bioethics, 2007). In contrast, the practice-based models tend to have their roots in principle-based bioethics, without providing a comprehensive moral theory to guide thinking. Some examples of these are models by Kass (2001), Childress (2002) and Upshur (2002), all of which have empirical foundations, that is, foundations based on experience rather than pure theory.

Lee's review showed that whether these frameworks are theory-based (applied from a specific philosophy) or practice-based (incorporating a mix of theories), they share three structural characteristics: They have a specific theoretical (philosophical) underpinning; from which foundational values are established; leading to the development of operating principles to guide decision-making. [Lee, 2012] None of these converge into a unified framework of choice, as theoretical underpinnings vary widely and may be non-compatible; nonetheless, similar values and operating principles emerge from multiple theories.

Some common foundational values identified by Lee include autonomy, non-interference, individual liberty, respect for persons and rights; these are balanced against the values of obligation, producing benefit, preventing harm, protecting trust, justice, equality, disparity and so forth. Lee further points out that there is conceptual similarity in different terms used in many frameworks: "social justice" as described by Kass, is comparable to Childress's "distributing burdens and benefits" and Upshur's "non-discrimination."

When it comes to the analysis of operating principles offered by the various frameworks, Lee finds that the similarities in foundational values noted in practice-based models translates into similarities in operating principles. These tend to be concrete, in contrast to theory-based frameworks, whose operating principles are less well-defined, making it more difficult for practitioners to apply the frameworks in making practical decisions.

While debate and work continues on a single overarching theory for public health ethics, Lee identifies the Nuffield Council model as one that is currently best-able to combine elements of various theories to produce values and operating principles that are functional and consistent.

Where does this leave us in attempting an ethical evaluation of childhood obesity interventions? Leading thinkers in the field, including Childress, Faden, Gostin and Kass, agree that public health ethics involves deliberation on "general moral considerations in the context of particular policies, practices and actions, in order to provide concrete moral guidance." [Childress, et al, 2002] It is this practical application of ethical thinking that is crucial for the planning and implementation of childhood obesity interventions.

Ten Have et al enumerated six characteristics that determine the practical usefulness of frameworks used in the evaluation of programs to prevent overweight. [Ten Have, 2010] The framework should be applicable to concrete programs, practically feasible, facilitate deliberation about ethical aspects of a program, provide criteria for decision-making, map negative as well as positive normative aspects of programs, and lastly, address all ethical issues involved.

Of the six frameworks identified that meet these criteria, three incorporate an analytical tool, which encourages deliberation instead of offering prescriptive guidelines. These three frameworks, by Kass, Tannahill and the Nuffield council, will be elucidated here. As Ten Have points out, public health professionals may not have had much training in ethics and may thus require guidance in addressing the ethical dimensions of preventative interventions. Furthermore public health practitioners may have widely varied moral philosophies, particularly in a multi-cultural society like South Africa. The fact that these analytic tools guide practical application, as well as that these three models are compatible with different moral theories, particularly social justice, make these three theories a good choice for public health practitioners. As will be evident in the discussion that follows, all three frameworks discussed here highlight the need to address health inequalities brought about by social inequalities. This is essential, since I have identified childhood obesity as a social justice issue, thus frameworks applied to the childhood obesity interventions must be able to incorporate this aspect of the problem,

The other three frameworks that Ten Have identifies as being useful in public health obesity prevention programs will not be discussed here, as they were designed for use in a specific geo-political context (USA in the case of the Childress and Public Health Leadership Society frameworks, and European Union in the Europhen framework). Furthermore, even if they were adapted for application to the South African context, Europhen targets policymakers exclusively, while PHLS is aimed primarily at institutions, limiting them somewhat for our purposes.

4.1 Kass: An ethics framework for public health

The first ethics framework for public health was proposed by Nancy Kass in 2001. Kass identified a need for a framework that is able to provide practical guidance in recognising ethical implications of public health programs, as well as highlight the defining values that distinguish public health from clinical and research medicine. [Kass, 2001] In addition to ensuring citizens' rights to non-interference (negative rights), public health ethics is also obliged to improve health and to some extent, reduce social injustice (positive rights). Furthermore, public health ethics must be able to deal with the ethical conflicts raised by the morally pluralistic society in which we exist.

Kass's framework consists of a six-step analytic tool (see Figure 1), which clarifies the goals and evidence for efficacy of the proposed program and enables a balanced consideration of ethical benefits and burdens, taking into consideration the principle of distributive justice. This deliberation results in the choice of an ethically acceptable option which is not

necessarily the politically preferred choice but is “ethically best…for furthering social justice and the public’s health.”

Figure1 Kass: Ethics framework for public health

1. What are the public health goals of the proposed program?
2. How effective is the program in achieving its stated goals?
3. What are the known or potential burdens of the program?
4. Can burdens be minimized? Are there alternative approaches?
5. Is the program implemented fairly?
6. How can the benefits and burdens of a program be fairly balanced?

Regarding the goals of an intervention, Kass points out that ultimately, decreased morbidity and mortality is the fundamental goal of public health. Any social or other benefits that may result are considered as incidental or intermediate, rather than primary outcomes, thus distinguishing public health programs from social ones. Ethical concerns raised at this step would include restrictions to liberty (paternalism).

The second step introduces an evidence-based approach to justify public health interventions. A lack of evidence would make a program unethical, but evidence of efficacy requires further justification in the form of the next steps.

Steps 3 and 4 require the consideration of burdens that may arise from programs. Categorising public health activities into six types, Kass identifies specific burdens likely to be associated with each type of activity. These burdens fall into three broad groups: risks to privacy and confidentiality; risks to liberty and self-determination; and risks to justice. The ethical choice is that intervention which has the least burden whilst retaining maximal efficacy.

Step 5, the fair implementation of programs, addresses distributive justice as a core value of public health. Once again, strong evidence is a key component in justifying unequal distributions in program implementation. Kass argues that reduction of social inequalities is a

positive responsibility (if not obligation) of public health, even if it is viewed solely in terms of effect on morbidity and mortality.

The final step involves balancing of the benefits and burdens identified, such that the benefits justify the burdens – greater expected benefits are required in order to justify great or uneven burdens imposed.

Kass asserts that it is the responsibility of public health professionals to advocate for programs that are ethical and block those that are not, regardless of whether the ethical infringement is in the form of lack of evidence base, infringement on liberty, or discrimination. Ethical analysis in public health is ultimately "a process that must be integrated, constant and ongoing."

One of the strengths of Kass's framework is that that the steps allow for carefully thought out planning that any participant or observer can follow. Being a general method, it is not restricted to specific public health situations, but can be applied to various issues in public health. Further, the process clearly requires the demonstration of evidence for efficacy – instead of being based on a particular set of moral beliefs, interventions are chosen on the basis of factual evidence, both for efficacy and for burdens imposed.

The framework also takes into consideration differing values and interests of different communities, allowing these to shape policies instead of imposing policies upon communities. Kass's method allows for the development of interventions despite differences in moral beliefs held by practitioners.

A particular strength of Kass's framework is that it addresses the role of social justice in public health. While she explicitly states that public health programs are not primarily social programs, an intrinsic feature of her model is to lessen social inequalities as a means of improving public health. Kass argues that as class is a powerful predictor of health, the reduction of poverty, poor housing and poor education are "appropriate, if not obligatory" tasks for public health. This is vital, as the effects of social inequalities on the obesogenic environment in South Africa (discussed in an earlier chapter) has been demonstrated to be a significant factor in childhood obesity and cannot be ignored in ethical analysis of childhood obesity prevention.

Critics assert that Kass's framework is too restrictive for public health, particularly with regard to what constitutes evidence and what defines health. [Turcotte-Tremblay & Ridde, 2016] The first criticism regards Kass's requirement for evidence-based interventions: Data or evidence is considered a labile concept by those authors, who note that there is no

consensus in the scientific community on its definition. Furthermore, while Kass argues that only data-based policies and programs should be implemented, Turcotte-Tremblay and Ridde counter that in some cases, even if scientific evidence is insufficient, the precautionary principle demands public health interventions in order to prevent serious or irreversible harm.

The second criticism is directed towards Kass's definition of the goal of public health as the reduction of morbidity and mortality. Turcotte-Tremblay and Ridde argue that this is not in line with the World Health Organisation's comprehensive definition of health as "a state of complete mental, social and physical well-being, and not merely the absence of disease."

Despite these criticisms, Kass's framework remains a pragmatic tool that can be applied to a range of public health situations, incorporating the best evidence available, to formulate policies that address the health and justice goals of public health.

4.2 Nuffield council on Bioethics: Stewardship model

The Nuffield Council of Bioethics, in their landmark report Public health: Ethical issues, proposed the Stewardship model as an ethical framework to enable "scrutiny of public health policies." [Nuffield council, 2007] Stewardship refers to the obligation of the liberal state to ensure that people can lead healthy lives, which includes the reduction of health inequalities as a central principle of public health. The Nuffield council framework incorporates two analytical tools: the Stewardship model, which elucidates the positive goals and negative constraints of public health programmes; and the Intervention ladder, to guide deliberation on the acceptability and justification of policy initiatives.

As the principles of the stewardship model are not ordered in hierarchy, conflicts may occur; however, the report suggests that resolution ought to be possible by implementing those policies that are able to minimise infringements on individual liberty, in pursuit of the desired social outcomes. The core characteristics of the stewardship model are listed in Figure 2.

Figure 2 Nuffield Council on Bioethics: The Stewardship model

7 goals of public health programmes

- Reduce the risks of ill health that people impose on each other
- Reduce causes of ill health by ensuring environmental conditions conducive to good health
- Emphasis on the health of children and vulnerable people
- Health promotion beyond education and advice, to assist in overcoming addictions and unhealthy behaviours
- Ensure conditions that make it easy to live a healthy life
- Ensure appropriate access to medical services
- Reduce unfair health inequalities

3 constraints on public health programmes

- Do not coerce adults to lead healthy lives
- Minimise interventions implemented without consent or mandate through procedural justice arrangements
- Minimise interventions that are unduly intrusive or conflict with important personal values

Furthermore the report also considers the roles and obligations of third parties (such as businesses, charities, institutions etc.) in public health. While publicly funded institutions have an obvious duty regarding implementation of public health policies, non-publicly funded organisations are not exempt from ethical obligations.

The intervention ladder is a tool that enables comparative analysis of intrusiveness and acceptability of different interventions. The lowest rung represents the least intrusive intervention, with each step becoming progressively more intrusive until the highest rung, which represents a move away from individual liberty to state control. The steps of the intervention ladder are represented in Figure 3.

Figure 3 Nuffield Council on Bioethics: The Intervention Ladder

- Eliminate choice
- Restrict choice
- Guide choice through disincentives
- Guide choices through incentives
- Guide choices through changing the default policy
- Enable choice
- Provide information
- Do nothing or simply monitor the current situation.

Not surprisingly, stronger justifications are needed for interventions higher up on the ladder. Loss of liberty is weighed against the probability of achieving desired health and societal outcomes, with some consideration given to economic losses and gains expected. The report also takes care to note that “doing nothing” is also a value judgement that is not exempt from justification.

The Nuffield council report includes a case study on obesity, which illustrates the practical application of the framework in the ethical consideration of several relevant policy issues, including some pertaining to the reduction of childhood obesity.

The main criticisms of the Nuffield council framework pertain to the theory upon which it is based. Dawson argues that the nature of public health is such that we need to move away from the centrality of non-interference (values of liberty and autonomy) and the “liberal” approach that characterises medical ethics. [Dawson, 2011] He asserts that applying this approach would result in many aspects of routine public health practice being deemed unethical, as it is too narrow to take into account the aims and considerations of public health. While liberty and autonomy are important values, public health encompasses a range of other values of equal status.

Dawson classifies the Nuffield model as a modified “liberal” view, which does not have a detailed theoretical foundation. It tries to avoid both paternalism and libertarianism, but is unable to “move beyond the Millian paradigm it is critical of.” He argues that because of the central role given to liberty by the intervention ladder, it is unable to produce new answers on policy issues. Furthermore, Dawson asserts that the Stewardship model confuses substantive and procedural values, which results in inability to resolve conflicts regarding the weighting of substantive and procedural concerns.

John Coggan adds that stewardship as put forward by the Nuffield Council is a flawed concept, merely having rhetorical appeal; he refers to it as a "repackaging of ideas that may otherwise be labelled 'nanny statist' or imply undue paternalism." [Coggon, 2011]

It is worth noting that these criticisms are aimed at the theory, not the framework itself. In a case-study aimed at evaluating the application of the Nuffield Council stewardship model to a public health policy proposal, Walton and Mengwasser found it to be effective in bringing ethical values into the interpretation of evidence and into the policy process. [Walton and Mengwasser, 2012]

Strengths of the framework included the framing of clear questions according to the principles, according to which evidence can be sought and evaluated, and the use of the intervention ladder to address issues such as effectiveness, proportionality and coercion. These disprove the nanny-state accusation, they assert.

Furthermore the framework considers many values of relevance to public health in various contexts. John Krebs, who chaired the working party that developed the framework, points out that it can also be applied at a global level. [Krebs, 2008]

In its defence, the stewardship model goes beyond merely protecting people from harm, by listing the core characteristics of public health programmes, which include actively providing conditions under which people can be healthy, ensuring that it is easy for people to lead a healthy life and the reduction of health inequalities. It also goes a step further in recognising that third-parties, as part of the "complex web of responsibility for public health," have a role to play in the delivery of public health.

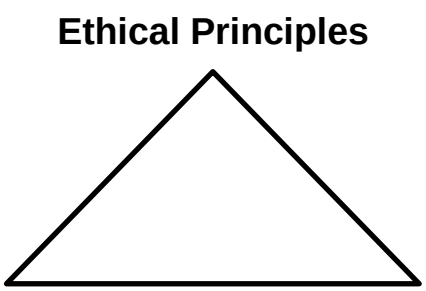
It is evident that the Stewardship model has a strong social justice orientation which is advantageous in analysis of ethical issues related to childhood obesity. This not just attributable to its goal to reduce unfair health inequalities, but also because its other aims can be applied to specifically address the obesogenic environment, including food, exercise opportunities, healthy behaviours, external (corporate) influences and the importance of focussing on children's health.

4.3 Tannahill: Beyond evidence- to ethics

The aim of Tannahill's framework is to provide a tool for decision-making in public health that links evidence and theory to ethics. [Tannahill, 2008] He outlines a number of reasons why, in contrast to research and clinical medicine, evidence-based decision-making is insufficient in the field of health promotion; a shift towards evidence-informed decisions is advocated.

Furthermore he explores the relative weights of evidence, theory and ethics in making public health decisions. Ethical principles take priority in this framework, as illustrated by the analytic tool: a decision-making triangle (Figure 4), which has ethical principles at the apex and evidence and theory at the base.

Figure 4 Tannahill: The Decision-making Triangle



Evidence **Theory**

The first step in decision-making is to evaluate the proposed policy or intervention according to a pre-determined set of ethical principles. A set of ten ethical principles is provided for illustration (Figure 5), but Tannahill recommends that organisations agree on their own principles. The weight of these will be influenced by cultural or political views, as well as by the type of intervention proposed.

Once ethical principles are satisfied, the policy can be analysed in terms of evidence for effectiveness and risks, as well as for other health issues and determinants.

Since gaps in evidence are possible (even probable) in public health, the third step is implemented: plausible theory can be used to augment the judgement, to reach an evidence-informed decision.

The triangle can be used to evaluate proposed interventions individually, as well as to compare multiple possible interventions. The process is meant to be an explicit one, with documentation ensuring the opportunity for others to understand (and possibly challenge) the decisions taken.

Figure 5 Tannahill: 10 possible ethical principles

- Do good
- Do not harm
- Equity
- Respect
- Empowerment
- Sustainability
- Social responsibility
- Participation
- Openness
- Accountability

Tannahill concludes by proposing his framework as an “Ethical imperative” for public health, “to make decisions based on the explicit application of ethical principles, using available evidence and theory appropriately to inform judgements.”

Tannahill’s framework has a number of strengths: It is applicable to a broad range of public health areas and action levels, including wider health determinants and cultural influences.

The role of evidence in public health is clearly outlined, addressing not only evidence for effectiveness and risk of harm, but also evidence for what health issues and determinants of health should be tackled. Evidence is not given primacy in this model – decisions should be evidence-informed, but the decision-making triangle gives priority to pre-identified ethical principles. Tannahill’s set of principles encompass principles beyond just beneficence and non-maleficence, to include a richer set of values such as equity, social responsibility and sustainability. Again, the inclusion of social responsibility in this framework acknowledges the importance of addressing health inequalities to improve population health, which is crucial when applied to problems in childhood obesity prevention.

Furthermore, there is a place for theory, to be applied when evidence is insufficient, as Tannahill asserts that it is preferable to act on plausible theory rather than allowing lack of evidence to lead to inaction. This will also result in building up of the evidence-base and then development of new theories, which will ultimately strengthen public health ethics.

As the process is an explicit one it is possible to follow the reasoning behind decisions that were taken and to review or challenge them.

A criticism of Tannahill's framework is that organisations have to choose their own set of ethical principles before making any decisions – reaching consensus on these principles could be challenging in the morally pluralistic society we live in.

Furthermore political influences could bring undue pressure to bear in the selection of the ethical principles. Tannahill's guiding principles are given as illustrative rather than definitive, which could result in decision-makers choosing to discard certain core values for public health, such as equity and fairness, in favour of other values they consider more pertinent.

Although Tannahill acknowledges that ethical principles will not be given the same weight in all programs, there is no guidance on how to weight the chosen principles when they come into conflict. It could be assumed that the ordering is hierarchical, but this is not clarified in the paper. As this is a fundamental challenge in most public health interventions, the ideal framework is one that would be able to address conflict in a pragmatic manner.

4.4 A brief comparison of the chosen frameworks

While much has been said about the limitations of frameworks in general, the aim of this discussion is to clarify analytic approaches that are practically useful for the prevention of childhood obesity. One of the useful features of frameworks is that they focus attention on what is ethically relevant in a particular area of practice. [Upshur, 2012] As discussed above, all three of the chosen frameworks are designed to assist in practical ethical decision-making in public health. The following table (Table 1), which I have based on Ten Have's criticisms of the six frameworks she identified and expanded upon, enables a brief comparison of the three frameworks described and discussed above, with reference to issues relevant to childhood obesity.

As shown in the table, all three frameworks are easy to apply practically, as they use a decision-making tool to assist in deliberation. Both the Nuffield Council framework and Kass's six-step questionnaire are more directed and follow a more systematic approach than Tannahill's decision-making triangle. Furthermore, Tannahill's model does not give criteria for weighing ethical principles, whereas the other two frameworks offer clear guidance and utilise the same method for weighing principles, namely that burdens must be in proportion to benefits and that the harm principle applies. Conflict resolution is dealt with by means of democratic hearings in Kass's framework and by going back to the decision-making triangle in Tannahill's framework. Whilst the Nuffield Council framework does not offer an explicit procedure for conflict resolution, it advocates choosing the policy with minimal infringement on individual liberty. None of the frameworks explicitly recommend that the ideal time to

apply the framework would be during the policy formulation stage, but all three are applicable both during policy formulation and in evaluation of existing programs.

When it comes to factors specifically related to childhood obesity, all three models advocate for social responsibility. Specific consideration of healthy environments and behaviour are given in the Tannahill and Nuffield Council frameworks. However, none of the three frameworks make specific reference to the social and cultural value of eating and how it may relate to obesity. Kass and the Nuffield Council caution against the stigmatising effects that could arise from interventions. For practitioners with limited experience in ethics, these three frameworks are capable of providing the guidance required, whilst still being broad enough to avoid a checklist-type approach, which would be contrary to the deliberative process desired in ethical analysis.

Table 1 Comparison of three Public Health Ethics frameworks

	Kass	**Tannahill**	**Nuffield Council**
Ease of practical application	Yes *Step-by-step Questionnaire*	Yes *Decision-making Triangle*	Yes *Stewardship Model & Intervention Ladder*
Criteria for weighing ethical principles	Yes *Burden in proportion to benefits Harm principle*	No *Depends on cultural and political perspectives*	Yes *Burden in proportion to benefits Harm principle*
Procedures for dealing with conflict	Yes *Democratic hearing*	Yes *Use triangle*	No *But choose policy with minimal infringement on individual liberty*
Specify when framework should be applied and by whom	No	No	No
CONSIDERATION OF			
Healthy environment and behaviour	No	Yes	Yes
Psychosocial consequences (Stigmatization)	Yes	No	Yes
Social and cultural value of eating	No	No	No
Social responsibility	Yes	Yes	Yes

Govea identifies the ethical aspect as the “most understudied and important aspect” of childhood obesity prevention. [Govea, 2011] Regardless of which model of ethical analysis is preferred, what is important is that policy recommendations are examined and debated from an ethical viewpoint.

Nonetheless, based on the above comparison, the Stewardship model is better suited overall to the ethical evaluation of childhood obesity prevention programs. Factors favouring the Stewardship model are its ease of application by means of its analytic tools, its guidelines for weighing up ethical principles and the explicit role of social responsibility in analysis. However, the main advantage of the Stewardship model in the analysis of childhood obesity prevention interventions is that it gives serious consideration to the social justice aspects of childhood obesity. These include the aims of creating healthy environments, encouraging healthy behaviours, providing opportunities to lead healthy lives and placing special emphasis on children's health. The effect of the obesogenic environment, with reduced opportunities for exercise and play, reduced availability and access to affordable healthy food and manipulation of children's vulnerability through marketing and advertising of unhealthy food products were identified in Chapter 2 as key reasons for identifying childhood obesity as a social justice issue. Thus the Stewardship model is able to effectively evaluate these aspects of childhood obesity and is well-suited for ethical analysis of childhood obesity prevention efforts.

Having covered the "Why" and "How" of ethical considerations in childhood obesity prevention, I now focus on the "What": In the next two chapters, two specific ethical concerns regarding interventions to prevent obesity in children will be discussed, which illustrate my argument that childhood obesity is a matter of social justice.

CHAPTER 5: Childhood obesity interventions: Whose responsibility?

There is now a general acceptance that childhood obesity is a problem that needs to be addressed and that its prevention is a top priority for global health. The South African Department of Health recognises obesity as part of the quadruple burden of disease threatening population health in this country. [National Department of Health, 2015] First identified in 2009, the quadruple burden consists of HIV/AIDS, injury and violence, communicable diseases other than HIV, and non-communicable diseases. [Mayosi, 2009] Health minister Dr Aaron Motsoaledi plans to reduce obesity by 10% by the year 2020, as outlined in the Strategy for the Prevention and Control of Obesity in South Africa. [National Department of Health, 2015] The strategic plan recommends intervention at a population level, based on "policy, context and environmental change". One of its six goals is to "support the prevention of obesity in early childhood", with early childhood defined as the ages in-utero to 12 years. The report states that childhood obesity is specifically targeted due to the potentially greater beneficial outcomes from interventions focused on this group.

While few would contest that the problem needs to be solved, there is much disagreement on whose responsibility it is. As obesity is categorised as a life-style disease, the implication is that it is a problem related to personal choice and therefore a matter of personal responsibility. In this section I will begin by defining the concept of personal responsibility for health and identifying problems with this approach. Since much decision-making for children is the responsibility of their parents, the moral status and rights of children will be clarified. With this in mind, the role of parents, the state, industry and other non-persons in preventing childhood obesity will be examined.

At first glance, most would agree that children's health is the responsibility of their parents. Obesity prevention, like other "lifestyle" diseases, has historically been considered a personal responsibility. The very phrase "disease of lifestyle" (referring to non-communicable diseases) suggests a voluntariness, which in turn implies a personal acceptance of the risks and burdens that arise from that choice. As children obviously have limited control over their lifestyles, responsibility for its prevention falls to their parents. In truth, the matter is far more complex than that.

To begin with, we need to clarify what we mean by the concept of responsibility.

5.1 What is meant by personal responsibility for health?

Not everyone means the same thing when they speak of personal responsibility for health. It is important to clarify what is meant by the term personal responsibility, because not only do people use the term in different senses, but they also base policies regarding the benefits and burdens which accrue to the individual on these definitions. Wikler differentiates those who use the phrase personal responsibility to denote active control over one's health (as opposed to "passive reliance on professional healers") from those who use it in a moral sense. [Wikler, 1987] According to the moral view, individuals have an obligation to themselves as well as others to remain healthy, and failure to do so justifies the penalties that the individual may have to bear, be it loss of certain liberties or loss of aid.

Wikler refers to Dworkin's categorisation of the different senses of responsibility and how they relate to moral and political arguments for formulating policies that hold individuals accountable for taking risks with their health. These categories include role-responsibility, causal-responsibility and liability-responsibility. First, individuals are "role-responsible", since it is their body as a biological organism which is defined in the social role of a risk-taker or a health consumer.

Second, individuals can be "causally-responsible" for their health status, as it is their actions which result in a particular health outcome.

Third, "liability-responsibility" occurs when the individual is held liable for costs and consequences of illness.

These definitions are used variously in arguments supporting policies that depend on the concept of personal responsibility. Wikler identifies four rationales for policy interventions, namely paternalism, general utility, communitarian rationales and fairness. Of the four rationales Wikler identifies to justify health interventions, the fairness argument is the only one which relies on liability-responsibility.

The fairness argument holds that it is unfair to burden others with costs arising from avoidable actions, which are the fault of the individual. Paternalism, general utility and communitarian arguments do not depend upon the notion of blame, but instead they emphasise causal responsibility and possibly role-responsibility as well.

It is evident that the implications of assigning personal responsibility for diseases that arise out of personal choice are serious: arguments could be made for removing choice (for example, regarding diet and physical activity) for obese and overweight people; assigning lower priority for addressing health-related needs of obese people; and charging obese

people higher premiums on health insurance and other targeted taxes, such as taxes on certain foods.

Wikler cautions that while the concept of personal responsibility may have intuitive appeal, the debate is a complex one and should not be an excuse to ignore the role of industry and government in the causation of illness and the provision (or lack) of care. In a different article, Wikler points out that assigning personal responsibility for health focuses on past actions of individuals that determine whether they deserve assistance, which is at odds with public health ethics' orientation to the future and its focus on "positive outcomes of interventions that promise to relieve suffering." [Wikler, 2002]

Although there are many senses in which the phrase responsibility is used, it is this differentiation between looking back and looking to the future that Voight et al focus on. They note that there are two core features of the term, namely obligation to do something in the present and future, and taking blame or credit for having caused something in the past. [Voight et al, 2014] The authors refer to Williams's categorisation of responsibility as prospective, referring to obligation, and retrospective, referring to blame. It is important to note that the two may be connected: retrospective responsibility arises from a failure in prospective responsibility.

Regarding childhood obesity, they argue that being part of the cause does not necessarily result in moral responsibility, unless there is a duty to prevent childhood obesity and a reasonable opportunity to do so. This is a key point in the discussion on who is responsible to prevent childhood obesity: Who has a duty to prevent childhood obesity? Is it solely parents, or do schools, corporations (the food industry in particular), governments, society at large have an obligation as well? Furthermore, is there a reasonable opportunity for all these players to act upon this duty and what should happen if they fail to do so?

Voight et al also point out that discussion of responsibilities is not only about burdens associated with retrospective responsibilities and constraints associated with prospective responsibilities – there are positive aspects relating to "opportunities, rewards and cooperation that are possible when responsibilities are fairly distributed and actually fulfilled". This brings us to some of the weaknesses associated with taking a personal responsibility approach to health.

5.2 Weaknesses of the personal responsibility for health approach

There are many criticisms of assigning personal responsibility for health, the foremost being that of victim-blaming. By ignoring other actors influencing an individual's health-related

choices, blame is placed solely on the individual, completely disregarding the role of environment, culture and social class, all of which have been shown to have enormous influence in individual choices. Minkler shows that while poverty is now well- known as a leading risk-factor for ill-health, there is a multi-factorial link between personal responsibility and socio-economic status. [Minkler, 1999]

One of these factors is the “notion of control”: compared to people of lower socio-economic status, people of higher socio-economic status have a greater degree of control in their daily life-choices, leading to a sense of greater control over their fate, which in turn impacts positively on their health behaviours. Similarly, she shows that racial and ethnic aspects of social context influence health-related behaviour as a risk factor. Evidence shows that racial and ethnic minorities receive lower quality of care than non-minorities. [Egede, 2006] Discrimination is one contributing factor to this, but it is uncertain whether effects attributed to race and ethnicity are fundamentally due to socio-economic circumstance.

It is well known that race affects socio-economic circumstances, resulting in inequalities in various areas such as education, housing and income. Minkler argues that racial influences on health extend beyond the effects of poverty: there are also environmental aspects to racial inequities, such as the finding that in America “people of colour have incinerators placed in their neighbourhoods at a rate of 89% above the national average” and that “African-Americans are exposed to more occupational hazards and carcinogens than whites.” [Minkler, 1999]

This raises the question of how voluntary individual choices really are. Wikler points out that particularly in the case of lifestyle-related choices, many so-called voluntary actions are actually deep-seated habits acquired over time, or learned behaviours from principal role-models. [Wikler, 2002] This is particularly important in childhood obesity, as illustrated by earlier discussion on the role of the obesogenic environment in which children are raised.

Apart from blaming the individual and absolving other actors (especially government) from fulfilling their obligations, Minkler identifies a number of shortcomings of the personal responsibility approach, which I will briefly discuss here. Following on from blaming the victim, personal responsibility results in the adverse effect of stigmatization of those who are unhealthy or ill. Furthermore, not only does ill-health due to obesity become associated with guilt, but also immorality, since lifestyle-related diseases are linked with sins such as gluttony and sloth. [Wikler, 2002]

Related to this are the concepts of “healthism” or “tyranny of health”, which accords personal health a primary role in morality, to the detriment of other goals. The healthy are considered

virtuous and being overweight or obese is seen as a vice, rather than simply a physical state of being. Advising moderation in food consumption takes on a moral aspect, portraying the human body as “a greedy beast” to be tamed by the rational faculties of will and cognition. [Mol, 2010] This has resulted in the creation of a “moral panic” in which obesity is portrayed in a stereotypical manner by the media and judged by those in authority to be a threat to the values and interests of society. [Gillman, 2008]

Another adverse effect of personal responsibility is a reduction in sympathy and care for the disabled or ill. [Wikler, 2002] Assigning personal responsibility for obesity is akin to saying “this is your problem to deal with because you brought it upon yourself.” Particularly amongst those we rely on to care (doctors, nurses, caregivers) but also in society in general, this is not an effect that should be lightly dismissed. As Wikler states, “a health need is a health need, equally deserving of concern and attention.”

Finally, Minkler makes some arguments based on disease patterns and evidence for efficacy, noting that individual behaviour changes do not have a significant impact on prevalence of illness for a number of reasons, whereas macro-level interventions have been shown to be more successful. Brownell et al reinforce this position from a different viewpoint: They assessed whether “personal failing” is the reason behind the increase in obesity. [Brownell et al, 2010] Various health-related behaviours over a period between 1991 and 2007 were evaluated, with the conclusion that people are not becoming more irresponsible – in fact, risky behaviour over that period had stabilised or improved. [Brownell et al, 2010] This led the authors to conclude that environmental conditions are important in “undermining personal responsibility, narrowing choices and eroding personal freedoms.”

The personal responsibility for health paradigm will no doubt continue to be promoted by politicians, policy-makers and corporations. However, public health practitioners will not be able to argue for anything other than shared responsibility for addressing health promotion and burdens of health alike. Guidance on this dilemma can be found in the Nuffield Council on Bioethics’ report discussed in Chapter 4. [Nuffield council, 2007] The Nuffield Council on Bioethics Stewardship model places the obligation on the state, as steward, to provide conditions in which people can be healthy. Although it states that individuals must be enabled to make responsible choices for themselves, in line with respect for autonomy, the report cautions that there are many factors which complicate the concepts of choice and autonomy. They recognise four broad categories in which choice is not truly autonomous, including unavailability of actual choice, habitual choices, predetermination of choices by industry and suboptimal choice due to overabundance of options. Multiple examples of these

categories can be recognised in the preceding discussion on weaknesses of the personal responsibility approach.

All the preceding arguments against personal responsibility have relevance in the debate on the prevention of childhood obesity, as the following discussions will show. Before we discuss the responsibilities of various role-players in preventing childhood obesity, it is worth pausing to consider the moral status and rights of children.

5.3 The Moral Status and Rights of Children

Parents have obligations towards their children – this is incontrovertible. There has however been debate about the basis, nature and extent of the obligations in the parent-child relationship, which naturally leads one to the consideration of the moral status of children. Brennan and Noggle present a rights-based theory of the moral status of children, grounded upon the conception of parents-as-stewards. [Brennan and Noggle, 1997]

Their theory arises from what they refer to as “three common-sense claims” about children’s moral status. The first of these is “The Equal Consideration Thesis”, which holds that, due to the fact that children are persons, they are entitled to the same moral consideration as adults. The emphasis is on the word *consideration*: children do not have the same moral duties and rights as adults, but their status as moral patients cannot be disregarded.

Second, “The Unequal Treatment Thesis” allows that there are certain things which, if we prevented adults from doing would be considered illegitimate, but when children are prevented from doing those things it is legitimate. Examples provided include driving cars or drinking alcohol. This theory is widely accepted due to its intuitive appeal, but also its support from public policy as well as “retroactive consent” that adults would give for restrictions placed on them in their childhoods.

Brennan and Noggle argue that these two theses are compatible: “Children can have a total package of rights and duties that differs from that of an adult; yet this is compatible with children having the same moral status, and thus the same basic rights, as any other persons.” Granting equal moral consideration does still allow for different treatment for children and adults. This is because while moral status derives largely from personhood, there are other factors that add to status as a person (such as roles, property or need) resulting in different moral claims which that person can make.

Unequal treatment is defended on the basis that there are two different kinds of rights: Basic (human) rights arising from personhood, and additional rights arising from other factors relating to relationships, commitments and societal factors. These additional rights are often

role-dependant; as children do not possess the necessary qualities to fulfil these roles, they cannot have the rights attached to them. Thus denying children role-dependent rights does not deny them basic human rights, nor does it deny equal moral consideration.

The third common-sense claim that contributes to Brennan and Noggle's theory is the "Limited Parental Rights Thesis", which posits the following: although parents are legitimately allowed significant discretion in raising their children, there are limits to which they can exercise their discretion. Parental rights have thresholds that allow them to be overridden in three instances, the first two of which are straight-forward: in the case of conflict with stronger rights, such as the right of the child not to be harmed; and in cases where the child's needs are not adequately met, such as protecting the child from severe harm or neglect. In this way we can allow for equal consideration of children, as well as taking into account parents' rights. A third threshold is in the case where overriding the parent's rights will not benefit the parents or child, but will have a significant benefit for others. This condition does not readily appear relevant to childhood obesity prevention and will not be considered further.

These three theses together form the foundation for their theory on the moral status of children. Parents are considered stewards, as opposed to owners of their children. Two important factors in the parent-as-steward model are the rights of the child and the needs of the child – the parent's role is to meet the child's needs and help the child develop capabilities for satisfying their own needs in the future. This role carries three duties: the duty not to violate the rights of the child; the duty to prevent others from violating the rights of the child; and the duty to promote the interests of the child.

The strength of this model is that it allows parents to raise their children without undue interference from the state, whilst balancing parental rights against the basic rights of the child. This is particularly useful when applied to questions about childhood obesity interventions.

Brighouse and Swift assert that, in addition to a fiduciary role in raising their children, parents also have a non-fiduciary interest that is inherent to the nature of the parent-child relationship. [Brighouse and Swift, 2006] The special interest that parents have in their children relates to the goods to be gained from parenting well, including developing and flourishing as a person, and deriving satisfactions that result from this particular relationship that are not to be found in any other types of relationship. According to this parent-centred view, it is wrong for governments to intervene in the parent-child relationship on the basis of acting in the child's best interest, without also taking into account the interests of the parents. This argument is taken a step further by requiring the government to support the parent-child

relationship by addressing barriers to parent-child interests, such as environments that impede good parenting. The obesogenic environment is a prime example of such a barrier. Even if one disagrees with this parent-centred approach, there is still a good argument to be made for supporting parents in their efforts to prevent childhood obesity by tackling the environment in which children are raised. More will be said about this later.

At this point it is useful to consider a more explicit account of the rights of the child. The 1989 UN Convention on the Rights of the Child, a legally-binding agreement to which South Africa is a signatory, covers a comprehensive range of children's rights. [The United Nations, 1989] Of these rights, four are very important to this discussion. These are article 3 (Best Interests of the Child), article 4 (Protection of Rights), article 5 (Parental Guidance) and article 24 (Health and Health Services).

According to article 3, all adults should act in the best interests of the child and consider how their decisions will affect children. Note that it does not refer exclusively to parents, but all adults.

Article 4 requires the government to respect, protect and fulfil the rights of the child. Furthermore it requires the government to create an environment in which children can grow and reach their potential.

Article 5 relates to the rights and responsibilities of families to raise their children. The government must respect and support those rights and ultimately enable children to learn to use their rights as they grow.

Article 24 provides children with the right to the best health care possible, including safe drinking water, nutritious food, an environment which is safe and clean, and information on how to stay healthy.

All of these rights are pertinent in assessing interventions to prevent childhood obesity and should be borne in mind when considering the role of various actors in this task. Let us now focus on the role of parents.

5.4 The role of parents in the prevention of childhood obesity

Traditionally parents have been the primary target for interventions to tackle childhood obesity. This is logical, as parents are the ones mainly responsible for choices regarding the child's diet, their activity levels and their knowledge about healthy living. Thus interventions such as limiting what children may pack in their school lunchbox assign obesity prevention as primarily a parental responsibility. This is not a problem per se, as parents have a vested

interest in ensuring that their children are healthy and have the potential to develop into healthy adults. Problems arise firstly, when we have to demarcate the extent of power that these interventions can have over parental choices and secondly, when we have to decide what should happen when those parental choices are not in line with policies that restrict parental liberties. Finally, we have to consider the types of challenges parents face which make it difficult for them to ensure that their children do not become obese.

The first problem, as with most paternalistic interventions, is the scope of interventions that can justifiably infringe on parental liberties. There is no consensus on whether parents ought to provide optimal nutrition, or if "good enough" nutrition is acceptable instead. [Holm, 2007] Can schools prevent parents from packing culturally acceptable lunchbox meals like curry and rice for example, or the slice of birthday cake from Dad's birthday celebration, or a portion of dried fruit that is naturally energy-dense? Furthermore, should these restrictions apply to all children or only those that are overweight or obese?

Merry points out that in dealing with the challenge of balancing paternalism and parental privileges, we do not know precisely what protection children are entitled to, nor do we know the extent to which the state is obliged to provide that protection. [Merry, 2012] It is not always clear what the best interests of the child are in the case of obesity, as once basic needs are met, how we define well-being will differ depending on the context in which the child lives. Obesity is made more complex by societal attitudes towards those affected by it, with the added complication that identifying certain children as the target of interventions can further compound an already stigmatised condition. This will be discussed in detail in the next chapter.

In addition, Merry notes that when we define risk of harm from obesity, we cannot disregard risks caused by other equivalent behavioural choices that impact on children's wellbeing, such as parental smoking in the home, or divorce, or television viewing, and innumerable other actions. All of these choices have a risk of documented negative effects on children's well-being. Yet few of these attract intervention by the state to the extent that obesity does. Merry sums it up very neatly: "Free and plural societies must permit a wide range of lifestyle choices, even when some of these are probably not desirable in any objective sense given the known risk factors." Unless we are planning to regulate all activities that impact on the best interests of the child, we have to tolerate some level of risk. Otherwise the very concept of family is called into question, as the only way to prioritise every interest of the child will necessarily come at the expense of the other members of the family. Merry cautions that the state is not necessarily the best alternative to parents when it comes to decision-making for

children, since states are far from ideal and not necessarily benevolent, nor are they stable and incorruptible.

This leads us then to the second problem: to what extent should states intervene when parents cannot or do not prevent childhood obesity? In 2014 a Daily Mail headline in the UK stated “More than 70 morbidly obese children taken into care due to concerns over their health.” [Doyle, 2014] Despite the fact that the first reported case of an obese child removed from parental custody in the UK occurred in 2007, headlines like these continue to cause controversy nearly a decade later.

The question is whether childhood obesity can be considered to be child abuse or neglect, justifying the removal of the child from the care of parents? According to the Children’s Act 38 of 2005, in South Africa child abuse is defined as “any form of harm or ill-treatment deliberately inflicted on a child” and neglect is defined as “a failure in the exercise of parental responsibilities to provide for the child’s basic physical, intellectual, emotional and social needs.”[South Africa, 2005] While it would be unlikely that parents deliberately cause childhood obesity, it is possible to make a case for state intervention on the basis of childhood obesity as a result of parental neglect.

Lotz argues that childhood obesity is a type of parental neglect, as it arises from unintentional but foreseeable harm caused by parents. [Lotz, 2004] Whether they allow it to happen or fail to prevent it, parents are the cause, albeit indirectly for childhood obesity. This leads Lotz to conclude that states can intervene in family life in order to prevent obesity, “as an extension of existing practices, such as compulsory education and socially coercive immunisation programs”, which are generally not interpreted as a threat to family intimacy. Furthermore, the basis for this type of intervention in childhood obesity can include the charge of neglect.

While a literature search failed to provide any documented cases of obese children removed from parental care in South Africa, it is a topic that has generated discussion. Lyla McLachlan makes a case for treating childhood obesity as neglect in South Africa and delineates the legal position for addressing it as such. [McLachlan, 2015] McLachlan points out that identifying the child as being in need of protection does not automatically require that the child be removed from the home. She elucidates the range of legal options available.

In terms of Section 46 of the Children’s Act, a children’s court is empowered to make orders for implementation in the case of an obese child, which include placing the child in alternative care, placing the child or parents under supervision (of a social worker or other

designated person), or ordering the child or parents to attend early intervention services or family preservation programs. Furthermore, courts can issue a child protection order, which could order many possible interventions, including giving consent for children to undergo medical treatment or surgery.

McLachlan concludes that while current laws in South Africa empower the judiciary to make such rulings, it is extremely unlikely that courts will determine that children's obesity is due to abuse or neglect. Furthermore, until there is greater clarity in the interpretation and application of the law to include childhood obesity, it is unlikely that social workers or other state institutions will be willing to intervene in such cases. While McLachlan views this as unfortunate, it is important to bear in mind the reality of what alternative care options and probable outcomes are presently available in this country.

Voight cautions that in situations where obese children are removed from their parents' care on the basis of neglect, we must realistically consider the alternative arrangements they are likely to encounter – the probable outcome is unlikely to be the ideal standard of care to which parents are held. [Voight, 2012] A report on violence against children in South Africa warns that "residential (or out-of-home) care is considered a last resort for children, once all other efforts…have been exhausted." [DSD, DWCPD and UNICEF, 2012] They refer to a 2010 audit of child and youth care centres in South Africa to highlight challenges faced by these centres [Community Agency for Social Enquiry, 2010]. These include limited resources, such as lack of indoor and outdoor recreational facilities and even lack of separate sleeping areas for girls and boys, late payment of government subsidies, and inadequate care worker to child ratios. All of these factors may result in the inability to provide programs and services of an adequate standard, which would make the removal of the obese child from the home a case of jumping out of the frying pan and into the fire. How then should we judge if the situation warrants removing the obese child from the relative safety of the parental home?

A useful framework for determining when childhood obesity should be reported as medical neglect has been proposed by Varness et al. [Varness et al, 2009] According to this framework childhood obesity can be labelled medical neglect when all three of the following conditions are met: There must be "a high likelihood of serious and imminent harm; a reasonable likelihood that an available intervention will result in effective treatment; and the absence of alternative options for addressing the problem." The authors emphasise that obesity alone, no matter how severe, is not a predictor of serious and imminent harm, until there is the presence of serious comorbid conditions (at any severity of obesity). Even then,

they recommend a high threshold for state intervention, which should not necessarily result in the child's removal from the home, but rather begin with less-invasive alternatives.

This is in line with the Stewardship model goal of minimising interventions which may be excessively intrusive and which conflict with important personal values. The Nuffield council report notes that it should be possible to achieve the desired social goals (in this case, reduction of childhood obesity) without impinging significantly on individual freedoms.

It is significant that just about every author cited above who discusses the issue of childhood obesity prevention, whether in favour of parental autonomy or in support of state intervention, makes special mention of the fact that childhood obesity is the result of multiple societal factors that impact on parental choices. This brings us to the third and very important problem of challenges faced by parents in attempting to prevent childhood obesity.

Schwartz and Puhl point out that unlike physical child safety issues, addressing childhood obesity is not given enough societal support. [Schwartz and Puhl, 2003] In the case of products sold for use by children, be it toys or car seats or airbags, it is not just the parents who are responsible for ensuring children's safety. A collective effort is made by manufacturers, the legal system, educational or informational systems and parents, with a singular goal in mind: that of protecting the child. Yet with regards to childhood obesity, the onus is exclusively on parents to feed children healthy foods and limit weight gain in an environment which promotes exactly the opposite.

The authors distinguish important societal aspects of the childhood obesity problem. Firstly, societal messages about food are mixed: while there are strong, consistent messages about healthy nutritional choices in the foetal, infancy and toddler stages, this falls away in the school-going ages. Children over the age of two are the target market for non-nutritive food products like sweets, snacks and fast-foods, which become associated with fun, parties, holidays, treats and rewards.

Furthermore, there are mixed messages about the relationship between obesity, dieting and eating disorders. Being overweight in childhood is known to be a risk factor for the development of eating disorders in adulthood. It is important that fear of this small risk does not result in failure to act against childhood obesity, particularly amongst the medical fraternity, who are not exempt from confusion about the relationship between these two extremes of disordered nutrition.

Apart from challenges arising from the obesogenic environment, Schwartz and Puhl review the research on eating behaviour to assess the impact of various biological and parenting

factors acting as barriers to the promotion of healthy nutrition in children. Biological factors include the following: First, children are born with a preference for sweet foods and develop a preference for salty foods over sour or bitter tastes. This poses an obvious challenge in trying to limit unhealthy sweet and salty foods heavily promoted outside the home.

Second, children fear and reject new and unfamiliar foods. This is thought to arise from an evolutionary protective mechanism to keep children from eating inappropriate or dangerous substances.

Third, children have an innate predisposition to choose energy-dense foods, which they are conditioned to associate with satiety. This preference is reinforced by repeated exposures to these types of food and linking these foods with positive social encounters.

Finally, children are able to self-regulate their food consumption to maintain a stable total daily intake of calories over time, when they are exposed to nutritious food. However this self-regulating capacity becomes ineffective when they are repeatedly exposed to fast foods and sugary snacks.

It is thus evident that in the face of a sub-optimal nutritional environment, children are biologically predisposed to obesity. Clearly parents cannot be held responsible for the effects of biological mechanisms. Nonetheless there are parenting factors identified by Schwartz and Puhl, which can be targeted in response to these challenges.

With regard to rejection of new foods, parents need to be made aware that whilst rejection of new foods is a normal developmental phase in childhood, repeated exposures will eventually result in acceptance of new foods (after about 10 exposures) and a learnt preference for these foods.

When it comes to the types of food children choose, parental (and teacher) modelling is very important as it leads to an increased likelihood of children eating healthy foods. Also giving children a choice of nutritious options allows for self-regulation.

Using unhealthy food as a reward however, or rewarding children for “cleaning their plate” instead of eating according to their own levels of satiety, results in decreased self-regulation of eating.

Finally research shows that when children can see foods that they desire but which they are not allowed, the desire for those foods increases. This places parents in a very difficult situation: either they allow children to eat unhealthy foods and risk weight gain in childhood,

or they prohibit it which leads to an increased desire for the unhealthy food, resulting in increased consumption thereof and weight gain at a later stage of life.

From the above evidence, it is clear that preventing childhood obesity is not simply a matter of advising parents to feed their children healthy foods. Biological drives and societal influences need to be taken into consideration, as well as parental behaviours. The Stewardship model identifies several goals for public health programs that are applicable here: reducing the risks of ill health that people impose on each other (risks imposed by parents as well as industry); providing programs that help people overcome unhealthy behaviours; emphasis on health of children. Until it is accepted that the responsibility for childhood obesity is a societal one, we may be unable to address this problem effectively.

5.5 The obesogenic environment and implications for responsibility to prevent childhood obesity

We have seen how the personal responsibility approach to obesity prevention has many shortcomings. Particularly when applied to childhood obesity prevention, this simplistic approach is insufficient to address the complex interaction of multiple external factors which lead to obesity. The concept of the "obesogenic environment", first proposed by Boyd Swinburn in 1999, is defined as "the sum of influences that the surroundings, opportunities or conditions of life have on promoting obesity in individuals or populations." [Swinburn, et al, 1999]

In this landmark article, the authors suggest that instead of approaching obesity solely from a biological or behavioural perspective, it is necessary to take an ecological approach, which incorporates environmental influences as well, as they are drivers of obesity. Similar to smoking reduction and other major public health problems, successful interventions at the population level depend on the identification and modification of these environmental drivers of ill-health.

Three arguments are made for taking an environmental approach to obesity: Firstly, in certain groups of people, such as those with language barriers or lower educational levels, environmental approaches are more likely achieve the desired effect than health education programs, which may struggle to make an impact.

Secondly, because environmental approaches are eventually incorporated into "structures, systems, policies and socio-cultural norms" they are more likely to produce lasting change and be more cost-effective.

Finally, the authors contend that taking an environmental approach is less likely to result in negative effects on body image and eating disorders.

As well as obesogenic factors (factors that lead to the development of obesity) there are factors in the environment that predispose or enable people to maintain a healthy weight through healthy food choices or physical activity. These are termed “leptogenic” factors, which result in the creation of a leptogenic as opposed to obesogenic environment. While the term leptogenic is not as widely recognised as it’s opposite, it is understood that this is the environment that would be preferred.

The ANGELO framework (analysis grid for environments linked to obesity) was developed by Swinburn et al to identify the obesogenic elements of an environment. The framework differentiates the size of environments into micro- and macro- environments. Individuals act upon micro-environments, such as schools, homes, neighbourhoods and food service outlets. These micro-environments are acted upon by larger macro-environments, such as health systems, food manufacturing and distribution, food advertising and marketing, and technology and design effects on environments, over which individuals have very little control.

The size of environments is analysed against the four types of environments, namely the physical, political, economic and socio-cultural environments. The authors simplify an understanding of types of environments by referring to them in terms of availability, rules and regulations, costs, and attitudes and beliefs.

The role of food and activity in this framework is to act as mediators between environmental factors and body fat. Looking at energy intake and expenditure, Swinburn points out that the fat content or energy density of the food consumed is the most significant mediator of energy intake, and physical activity is the main mediator of energy expenditure. This concept of food and exercise as mediators (rather than causes in themselves) is the key to understanding and preventing obesity.

5.6 The obesogenic environment and energy expenditure

To refer back to the simplistic cause of obesity mentioned in a previous chapter, as “eating too much and exercising too little”, we can see how physical activity fits into this framework as a mediator: when a physical environment such as a neighbourhood in South Africa has no pavements or cycle paths, and furthermore, that neighbourhood is located in a township a substantial distance away from the urban area in which the child attends school, then the child has little or no opportunity to ride a bicycle, either recreationally or for transport, as a

means of expending energy. Add to the physical barriers the prevailing societal attitudes in the community, such as fears for the child's safety (be it danger from negligent drivers or from criminals), and it becomes obvious that that particular environment is obesogenic. In such a situation it is pointless to advise parents on the importance of getting their children to exercise more, without also addressing the environmental factors acting as a barrier to such exercise. These are exactly the type of problems which the Stewardship model identifies as goals for interventions: regulation of environmental conditions which improve health and making it easy for people to be healthy, for example by exercising.

Fortunately for public health in South Africa, the National Department of Health (NDOH) recognises the need for an environmental approach in the prevention of childhood obesity. [NDOH, 2015] Its strategic plan for the prevention and control of obesity in South Africa aims to "reform obesogenic environments and enablers, while enhancing opportunities for increased physical activity and healthy food options in every possible setting, including healthcare facilities…schools…and the community at large." It plans to achieve this by setting out four goals relating to food consumption and physical activity, identifying key actions needed to achieve these goals, departments or organisations which should be responsible for implementation, and the expected outcomes of these actions. The timeframe for action and implementation is 2015 – 2020.

Regarding physical activity, goal 3 of the strategic plan addresses ways of increasing physical activity. This includes key actions such as ensuring that people have access to safe areas for recreation and physical activity, and requiring that new developments take into consideration the best ways to optimise physical activity opportunities. It is important to note that responsibility for this is allocated to others besides just the Department of Health, and would include the Department of Transport, South African Local Government Association (SALGA) and Co-operative Governance and Traditional Affairs (COGTA).

Unfortunately, intention is not the same as actual implementation and it remains to be seen whether the strategic plan is realised by 2020. In the 2016 Healthy Active Kids South Africa (HAKSA) report card, a score of C- was obtained for physical activity. [Uys et al, 2016] A score of C is defined as "we are succeeding with about half of children and youth (41 – 60%)" and a D as success in less than half (21 – 40%). [HAKSA 2016] While the 2016 result was an improvement on the previous (2014) report's score of D, much work remains to be done. The main barriers to physical activity in South African children were identified by Uys et al as "lack of facilities, unsuitable sporting facilities or clubs in the areas of residence, insufficient access to facilities and programs, or facilities located too far from their place of

residence." Furthermore it was noted that lack of resources led to the neglect and even abandonment of existing facilities.

Children spend much of their time in school, which makes physical education in schools a focus of many childhood obesity interventions. The Robert Wood Johnson Foundation identified increasing children's physical activity during the school day as one of its six policy priorities to reverse childhood obesity. [Govea, 2011] In South Africa too, physical education in schools has come under scrutiny.

The Minister of Basic Education, Mrs A. Motshekga, stated that the department is committed to addressing obesity and that schools are able to influence behaviour change. [NDOH, 2015] The department's contribution targets both nutrition and activity in the school environment. This is a move in the right direction but again, much more needs to be done. HAKSA 2016 referred to studies that report on the state of physical education in South African schools and allocated a score of D for physical activity in schools.

It was found that insufficient time is devoted to physical activity in South African schools, as Physical Education (PE) as a school subject falls under the subject Life Orientation and thus does not receive as many teaching slots as it did prior to revisions made to the national curriculum in 1997. [Stroebel et al 2016] It was also found that compared to other subjects falling under Life Orientation, less time was spent on PE and teachers' reasons for not teaching PE lessons included heavy workloads and unwillingness to spend time on non-compulsory subjects. [Hill et al, 2015]

The point of this discussion is not to show up the shortcomings of government departments, but to illustrate that challenges to the prevention of childhood obesity exist on multiple levels. Therefore taking an individual approach cannot hope to succeed. It requires action from all spheres to act on all four types of environment: political, economic, socio-cultural and physical.

Especially in South Africa, successful strategies for the prevention of childhood obesity will have to take into consideration the realities of the current obesogenic environment, even whilst working towards the creation of a leptogenic one.

5.7 The obesogenic environment and energy intake

On the energy intake side of the obesity equation, the role of the environment is much more significant than it would appear at face value. The decision to consume energy-dense foods cannot be considered a truly free choice, when the options available predispose consumers towards selection of those types of foods. This limitation to autonomous choice, as pointed

out by the Nuffield council report, has been mentioned earlier in the chapter. Merry asserts that it is not by accident but rather by design that cheap, unhealthy food is widely available. [Merry, 2012] Corn starch is the main ingredient for many types of cheap, unhealthy, processed foods, he points out, yet the farming of corn in America is massively subsidised by the government, on the scale of billions of dollars.

In South Africa, children face multiple environmental drivers of obesity across many different settings. Many supermarkets, and even clothing, stationery and other stores (which sell items unrelated to grocery products) have checkout aisles lined with energy-dense sweets and snack foods. The 2016 Healthy Active Kids South Africa (HAKSA) report points out that items purchased from these aisles are extremely profitable for retailers. [HAKSA, 2016] These retailers rely on impulse buys and the “pester power” of children to get parents to buy these items as this deliberate marketing technique frequently results in success.

Even in the school setting, South African children are vulnerable. HAKSA 2014 reported that tuckshops are used by most children, even amongst families whose resources are limited. A scoping study of school tuckshops in South Africa found that the foods sold in tuckshops were mostly low-nutrient energy-dense foods and sugar-sweetened beverages. [Nortje et al, 2017] Apart from children’s preference for unhealthy foods, barriers to implementing guidelines for healthier food options were identified. These were the cost of healthy foods and the lack of proper facilities (including facilities for keeping perishable healthier foods).

The study also reported that although not all schools have formal tuckshops, informal vendors sell food either in tuckshops on the school grounds or just outside. According to HAKSA 2014, a typical low-cost high-satiety meal sold by informal vendors is the “kota”. This popular tuckshop item is made up of “a quarter loaf of white bread, chips, fried eggs, cheese and either polony or sausage.” At just over R16 (in 2014) this energy-dense meal is hugely appealing and accessible for children of limited financial means.

Recognising the vulnerability of children to marketing strategies and environmental drivers such as these and prioritising their health is in accordance with the goals of public health identified by the Stewardship model. Although guidelines for creating healthier food environments in South African schools do exist (such as the Integrated School Health Policy), Nortje et al argue that stronger actions are needed to address what they see as not just a policy issue, but (quite rightly) an ethical issue as well. They suggest that not only do schools have a responsibility to protect children from an unhealthy nutritional environment, but go further to state that society at large has a responsibility to protect school-going children as they are a vulnerable community.

This position is supported by the findings of the South African Health and Nutrition Survey (SANHANES-1), which states that “exposure to nutrition information and ensuring that the environments in which children live, work and play support healthy eating habits are protective of children’s health and form a crucial part of societal investment in their productivity.” [Shisana et al, 2013]

Whether one accepts the responsibility to protect children’s health from an outcomes point of view as stated above, or from the ethics of responsibility standpoint as argued by Nortje et al, it is incontestable that children need protection from obesogenic environments. The only reasonable way to protect children’s health in this instance is to convert all those factors that are part of the cause into factors that are part of the solution. This requires that all role-players stop shifting the blame to individuals in order to minimise their own contributions to obesogenic environments.

A prime example of this type of blame-shifting is seen in the sugar-sweetened beverages (SSB) or soda industry. The case of the New York “giant-soda” ban discussed in Chapter 3 is just one example of how public health interventions can be overcome by industries under the guise of concern for other ethical issues, in this case liberty rights. [Fairchild, 2013] This type of response from industry to public health measures is currently being played out in South Africa in the “sugar tax” debate.

The consumption of SSB has been identified as an area of concern in South African children and youth. The consumption of SSB was found to be more detrimental to health than other energy-dense foods. [Malik, 2010] HAKSA 2014 reported that 2 out of 3 children buy SSB at least twice a week and that by 2012 South Africans were consuming three times the global average of Coca-Cola per year. A study of dietary habits of youth in Soweto found that adolescent females consumed SSB 8 times a week, and adolescent males 10 times a week. [Feeley et al, 2014]

One of the recommendations from the National Department of Health’s Strategy for the Prevention and Control of Obesity is the implementation of fiscal measures, such as taxes on SSB. This has been identified by the NDOH as the most cost-effective intervention in obesity prevention and has been found to be successful in other countries in which it has been implemented. The decision to introduce a 20% tax on SSB in South Africa, to come into effect 1 April 2017, was announced by the Minister of Finance in the February 2016 Budget. [National Treasury, 2016]

The Treasury’s Taxation of Sugar Sweetened Beverages policy paper cited research findings in support of reducing sugar consumption, including the alarming finding that one of

the most-consumed food/drink items amongst young children in South Africa is carbonated drinks, which is consumed even more than milk. [National Treasury, 2016]

The Treasury also pointed out that until 2012 taxes had been levied on soft drinks in South Africa, although previously it had been for reasons of revenue rather than public health. Industry lobbying resulted in the tax being repealed at that time.

As can be expected, the “sugar tax”, as it has come to be known, has met with opposition from the industry, which includes Beverage Association of South Africa (BevSA), SA Fruit Growers and SA Sugar Association. [Kretzmann, 2017] Their main argument against the tax is the expected loss of jobs resulting from decline in revenues from the sale of SSB. This has drawn strong political allies into the debate, such as South Africa’s largest trade union, COSATU, whose influence is not to be underestimated. In a press statement COSATU stated that they “agree with government that overconsumption of sugar is a national health crisis.” [COSATU, 2017] Furthermore, “while COSATU agrees with government that we need to promote healthy lifestyles, this should not be at the expense of badly needed jobs.”

This statement is a clear example of how industry shifts blame, by aligning itself with desirable health goals whilst portraying the problem of obesity as one of “overconsumption” and “lifestyle” – that is to say, a personal responsibility which has nothing to do with workers in the sugar industry.

Apart from this strategy, BevSA also relies on other arguments: it casts doubt on the scientific evidence, stating that the tax will “hurt the SA economy in return for small and highly uncertain benefits”, as well as the fairness of the tax which they say is “discriminatory” as it singles out SSB from other calorie-containing products. [Beverage Association of South Africa, 2016]

Unfortunately this kind of pressure does impact on government’s efforts to promote public health. In the February 2017 Budget Review, Treasury had reduced the tax by almost half, to 11%. [Cullinan, 2017]

BevSA went further to suggest that partnership between government and industry is “a better way” with the goal to “encourage innovation to reduce calorie intake.” Not only does this shift responsibility to the consumer to reduce the intake of unhealthy products, but portrays the industry in a positive light as engaging in health promotion activities.

This type of partnership falls under the activities designated “corporate social responsibility” (CSR), which is defined as “an evolving concept that has come to include companies’

economic, legal, ethical and philanthropic responsibilities in society, in addition to the companies' fiduciary responsibility to shareholders." [Dorfman et al, 2012]

In an analysis on how soda companies implement corporate social responsibility, the authors reported that "when facing crises over health concerns, many industries attempt to thwart regulations and gain popular support." This included "distorting science, wielding political influence…and influencing legal and regulatory actions". This is a perfect summary of the industry's response to the sugar tax in South Africa, as discussed above. Dorfman et al caution public health advocates that partnering with industry results in soda companies being able to portray their products in a more positive socially- acceptable light (just as was done by tobacco companies), rather than identifying them as contributors to social ills.

One way in which SSB companies attempt to improve their public image is through sponsorships and other marketing exercises targeting children. This is part of a broader concern about marketing and advertising of food products (including beverages) to children. This is a topic that has generated much discussion abroad and in South Africa and deserves closer scrutiny.

5.8 A focus on the marketing and advertising of foods to children as a key contributor to the obesogenic environment

Every significant report related to childhood obesity in South Africa, including SANHANES-1, HAKSA and the National Department of Health's Strategy for the Prevention and Control of Obesity in South Africa, identifies marketing and advertising of food products to children as a serious problem. The Institute of Medicine (IOM) asserts that "Creating an environment in which children and youth can grow up healthy should be a very high priority for the nation. Yet the prevailing pattern of food and beverage marketing to children in America represents at best a missed opportunity and at worst a direct threat to the health of the next generation." [McGinnis et al, 2006]

In South Africa although primary school children are educated about nutrition as part of their curriculum, aggressive advertising ensures that schools are not the only source of nutritional information reaching children. [Shisana et al, 2013] A closer examination of this contentious issue follows, with an ethical assessment of how foods are marketed and advertised to children, what effect it has and how it is regulated.

5.8.1 How food products are marketed to children

Advertising is defined as the use of messages, usually paid for by those who send them, in order to inform or influence those who receive them. [Bullmore, 2016] Advertising makes up

just one part of a bigger set of activities known as marketing, which is defined as “the process through which goods and services move from concept to customer” and which “develops a demand for the product and fulfils the customer’s needs.” [BusinessDictionary.com, 2017] Marketing is now ubiquitous in our daily encounters [McGinnis, 2006] and children are a significant target partly because, compared to previous generations, there has been an exponential increase in their buying power. [Calvert, 2009]

In 2009 a literature review of 205 articles regarding food promotion to children was published by the World Health Organisation. [Cairns et al, 2009] Some of the findings on how food products are marketed to children were as follows: The main medium through which marketing reaches children is TV advertisements, but with the advent of the internet, this is becoming a new area for advertisements and promotions. The main products advertised on TV during children’s viewing hours comprise the “Big Five” of sugary cereals, soft drinks, confectionary, savoury snacks and fast-food. Marketers use creative strategies such as focussing on fun, fantasy, novelty and taste to appeal to children. A multifaceted approach is employed, such as combining advertisements with merchandising tie-ins and point of sale positioning.

In developing and middle-income countries the marketing strategies employed include the use international techniques, but products and services are adapted to local markets. In addition to TV advertisements, strategies include the use of on-pack promotions, popular children’s characters, interactive websites and sponsorships of school activities and sports. Sports stars and celebrities are used to endorse food products. Brand loyalty is built through the use of cartoon characters, club memberships and collectible toy sets.

The amount of time children spend viewing TV adverts is a well-documented topic. Termini et al contend that knowing “how the media bombards children with food advertisements” is crucial, as children are not able to avoid the exposure or influence thereof. [Termini et al, 2011] They found that in 2004, children were exposed to 40 000 advertisements per year on TV alone, the majority of which were for junk food items.

While TV advertisements are the main medium through which food products are marketed to children, marketing activity takes places in other significant arenas as well. These include in-school marketing, the internet, and branding of toys and other merchandise. [Story et al, 2004] In-school advertising includes advertisements on school buses, school facilities and school publications. In addition indirect advertising strategies are used at schools, by means of sponsorship of educational materials and sporting equipment.

The internet is an especially worrisome medium for marketing to children, as it is less regulated than other environments and is expanding the arena in which children can be targeted. Most major food companies use their websites to create “branded environments” with content designed to appeal to children, such as animated and interactive games, music, screensavers, as well as infomercials. [Story et al, 2004] These website addresses are also found on the product packaging, as part of the cross-promotion of products by means of packaging, TV advertisements, cartoon characters and websites.

The picture in South Africa is no less disturbing. In an analysis of food advertising on TV in South Africa, it was found that nearly half of all food advertisements appeared during family viewing time (between 3 and 9pm) and that adverts for sweets, desserts, fast foods, starchy foods and SSB were the most frequent. [Mchiza et al, 2013] In contrast, only 1% of advertisements were for fruit, vegetables and other healthy foods.

TV is not the only medium through which advertisers target children in South Africa. A study of schools in the Western Cape found that more than 60% of schools in that area had their name displayed on a branded food or beverage advertisement. [De Villiers et al, 2012] Furthermore, the schools received no money or sponsorships in exchange.

In the first study of its kind in South Africa, Moodley et al found that in Soweto, billboard advertisements for SSB and vendors are strategically placed near primary and high schools. [Moodley et al, 2013] Each square kilometre containing a primary or high school was found to contain four advertisements for SSB and five vendors, three of which sold SSB. In this way children are specifically targeted in their daily environments.

Packaging of food products also targets children specifically, through the use of different persuasive techniques. In a study on the use of branding and cartoon characters as a marketing strategy to children in South Africa, Delport found that breakfast cereal packaging included the use of cartoon characters, games, collectibles and competitions. [Delport, 2015] Other marketing strategies included placement of breakfast cereals on lower shelves in supermarkets and with cartoon characters looking downwards, in order to make eye contact with children.

Apart from cartoon characters, celebrities and sports stars are also used to advertise food products to children in South Africa, such as Lays® chips which used Francois Pienaar (former Springbok rugby captain) and AB de Villiers (Proteas cricket captain) to endorse their product. [Delport, 2015]

South African children are also exposed to sponsorship of sporting activities by fast-food companies, under the banner of corporate social responsibility. Examples of these include KFC mini-cricket, which KFC promotes together with Cricket South Africa, and McDonald's U14 School League, in which McDonald's has joined forces with the South African Football Association. Both these sports codes now display the sponsor's logo on websites, kit and promotions. [KFC mini-cricket website, 2017][McDonald's U14 school league website, 2017]

It is evident then that South African children are exposed to the full range of marketing strategies employed by food companies. The reason for this should come as no surprise: The IOM report on food marketing to children begins with the statement "Marketing works." [McGinnis et al, 2006] It is important to look at how marketing achieves its goal of creating desire for a product which requires increased consumption of that product in order to satisfy the desire.

5.8.2 The effects of marketing of food products on children

The food industry spends large sums of money annually on the marketing of their products: more than $1.6 billion was spent on marketing food products to youth in the US in 2006. [Harris et al, 2011] In South Africa in 2007, R1.4 billion was spent on beverage advertisements alone. [Cassim, 2010] If expenditure is any indication, we can conclude that these marketing efforts must be successful. Fortunately we do not have to rely solely on this deduction, as research is able to provide evidence of the effects of advertising on children.

Both major systematic reviews, that of the WHO [Cairns et al, 2009] and the IOM [McGinnis et al, 2006] confirm that marketing of food products has an effect on children's food-related behaviours. Cairns et al found that children's recall of food advertisements is extensive and that these comprise some of their favourite advertisements. Their preference for specific food products is influenced by food promotion and this is carried forward into their purchase requests for those specific items and their consumption thereof.

McGinnis et al also confirmed that "TV advertising influences children to prefer and request high-calorie and low-nutrient food and beverages" particularly in children aged between 2 and 11 years. They also confirmed a strong link between exposure to TV advertisements and adiposity in children between the ages of 2 and 18. Advertising influences not only their preferences and purchases, but also their beliefs about food. One example of this influence on belief is the finding that pre-schoolers believed that food tasted better when the packaging displayed favourite TV or cartoon characters. [Roberto et al, 2010]

The cumulative effect of these advertisements on children is an increase in consumption of obesogenic foods. A mathematical simulation model aimed at estimating how limiting TV food advertising would reduce childhood obesity in children aged 6 to 12 years old demonstrated the following findings: reducing TV advertising exposure to zero would result in a 12% decrease in consumption, with a reduction in prevalence of obesity by 6.8% in boys and 6% in girls. [Veerman et al, 2009] The authors conclude that 1 in 7 children would not have been obese if they were not exposed to food advertisements on TV.

The evidence on food marketing to children is neatly summed up by Harris et al as follows: “food marketing to children is (a) massive; (b) expanding in number of venues (product placement, video games, the internet, cell phones etc.); (c) composed almost entirely of messages for nutrient-poor calorie-dense foods; (d) having harmful effects; and (e) increasingly global and hence difficult to regulate by individual countries.” [Harris et al, 2009]

Rather than simply encouraging preference for certain brands (as marketers would have us believe), marketing of food products is thought to have serious implications for children’s long-term nutritional choices and health. [Harris et al, 2011] It is not only the potential harmful effects on children’s health that presents an ethical dilemma in marketing of food products to children; the manner in which marketing exploits the vulnerability of children raises an especial concern.

5.8.3 Ethical concerns about marketing of food products to children

Marketing of food products to children raises very real ethical concerns because it exploits children’s vulnerability in a manner calculated to increase profitability for companies, not just in the short-term, but as lifelong customers through the creation of brand-loyalty. As well as raising the question of whether profits can ever justifiably be prioritised over children’s health, it must be considered how the marketing process itself takes unfair advantage of the fact that they are children.

In a study that investigated how young children understand advertising tactics, Rozendaal et al noted the requirements for “advertising literacy” that allow children “to process advertising in a critical and conscious way”. [Rozendaal et al, 2011] These include the ability to differentiate between advertisements and other programming content, and the understanding that the goal of advertising is to get people to buy the goods advertised. Furthermore, they have to understand that advertisers try to do this by changing how people think and what they know about the product. Lastly, children need to understand the different ways in which advertising tries to appeal to them to buy the product.

The authors identified six tactics that are often used by advertisers to persuade children to buy the advertised product. These are repetition of adverts, demonstration of products, peer popularity, humour, celebrity and cartoon character endorsements and the offer of premiums (free items included with purchases).

Their study concluded that between the ages of 8 and 12, understanding of advertising tactics improves progressively, but that for different tactics, the age at which understanding occurs varies. Harris et al point out that children below the age of 8 years do not possess the necessary cognitive skills to understand that advertising is biased.

These findings are consistent with Piaget's theory of cognitive development, which is not only used by developmental psychologists and researchers, but also by marketers to understand how children think. [Calvert, 2008] At the first stage of cognitive development, usually between ages 2 and 7, children are in the pre-operational thought stage. This is based on their perceptions and so they focus on the appearance of products. They also believe that imaginary events and characters are real. Thus adverts showing images of beloved cartoon characters endorsing food products will appeal at this stage.

The second stage, in which concrete operational thought begins, occurs at roughly age 7 to 11 years. Children think more logically and begin to understand that advertisements are intended to sell products. They understand that objects themselves are not altered by how they may appear in advertisements.

At the third stage, from age 12 upwards, children use formal operational thought and are able to use abstract reasoning. Their understanding of advertisers' intent becomes more like that of an adult.

The study of consumer socialisation, the process by which children acquire the skills to become consumers, also makes use of a model based on Piaget's 3 stages of cognition to understand what appeals to children at different stages. [Calvert, 2008] Developed by Deborah John, the model differentiates the three developmental stages as the perceptual stage (limited consumer skills), the analytical stage (more sophisticated skills) and the reflective stage (mature comprehension). Despite the improved consumer skills gained with each stage, the author points out that is it still possible to influence all children to buy products through advertising tactics.

Calvert asserts that children's interest patterns are carefully analysed by marketers, for example by tracking online games that interest them, in order to develop future marketing strategies, possibly even novel approaches that target specific individuals. With these kind of

approaches children (and even some adults) will not even be aware that they are the target of marketing campaigns.

It is also important to bear in mind that even though children may be at a developmental stage that enables them to understand the influence of advertising, this does not automatically mean that they will be able to act upon that understanding. It is not until the early twenties that the ability to weigh long-term health consequences against short-term rewards is fully developed. [Harris et al, 2011] It is thus unfair to expect children to be able to resist consuming the unhealthy, obesogenic products that are advertised in a way that is designed to be irresistible to them.

Another important way in which marketing is used to manipulate children's attitudes is through sponsorships by companies that sell unhealthy products. Sponsorship of educational materials and sporting equipment and events, as an indirect form of marketing, may not even be recognised as marketing by the consumer.

Examples of sponsorships by fast- food and beverage companies in South Africa have already been mentioned: These include branding by beverage companies in school premises in the Western Cape, and sponsorships for cricket and soccer leagues for children. Referring back to our earlier discussion on corporate social responsibility and sponsorships, it is prudent to bear in mind Nortje et al's statement that "sponsorship per se is not a philanthropic act, but rather a business decision which holds mutual benefits for both parties involved." [Nortje et al, 2017] It would appear that for the recipients in this case, sponsorship is more of a double-edged sword than a benefit.

The ethics of Corporate Social Responsibility (CSR) in general, and also with specific reference to the food and beverage industry's initiatives involving children, has generated much debate in the literature. The foremost criticism of CSR is that it is "mainly a public relations strategy designed to achieve innocence by association." [Dorfman, 2012]

In an analysis of CSR programs of Big Food in Australia, Richards et al identified three ethical considerations raised by these campaigns. [Richards et al, 2015] The first of these is that CSR shifts the focus on responsibility towards customers and away from the unhealthy nature of the product. It brands the company in a positive light, as being caring and responsible towards the environment and the customer. This is then used to defend the company against criticism and negative publicity.

Secondly, CSR by the food industry has been found to target families and children. The goal is to create brand loyalty, which results in children becoming lifelong customers. By

sponsorship of sporting activities, CSR initiatives by food companies achieve a number of goals: the sponsorship is viewed as a favourable effort to sustain sport in communities, which presents a positive brand image. At the same time, parents' guilt about feeding children these unhealthy food products is assuaged, as their spending on the sponsor's product becomes justified. Furthermore, there is the development of what Richards et al describe as "the halo effect": as the brand is associated with other healthful behaviours, there is the perception amongst children and adults that the product itself must also be healthy.

Thirdly, CSR enables food companies to achieve credibility by association with credible organisations. Sponsorships and support of non-profit organisations enhances the image of the company, as well as enabling it to form interest groups that can be mobilised to lobby against taxes, regulations and future legislation that are detrimental to the company's interests. This strategy has been successfully employed by the soda and food industry in the USA, which uses the group "Americans Against Food Taxes" to lobby against taxes and for the promotion of individual responsibility. [Dorfman et al, 2012]

In summary, what food and beverage company sponsorship of children's sport in South Africa achieves whilst appearing to promote health is, to promote its unhealthy obesogenic product indirectly, simultaneously downplaying the role of its product as a contributor to the obesity epidemic. In many ways, this is a form of deception which takes unfair advantage of children in a manner more deplorable than direct advertising.

We can conclude without doubt that children need protection from marketing of food products. As a significant contributor to the obesogenic environment, the argument has already been made that the responsibility for ensuring children's protection from unhealthy influences is a societal one. The only question that remains is how to protect children from the harmful effects of marketing.

5.8.4 Regulations to protect children from the harmful effects of food marketing

The need to protect children from the harmful effects of food marketing is recognised by many stakeholders, not just public health authorities. Multiple potential solutions have been proposed, which range from individual and parental responsibility, to promises by companies and sectors, to self-regulation and co-regulation and finally to local, national and international rules and regulations. [Harris et al, 2009]

As part of its 2008 -2013 Action Plan for the Global Strategy for the Prevention and Control of Non-Communicable diseases, the World Health Organisation recommended that member

states should work with all relevant stakeholders to develop and implement a framework for promoting responsible marketing of foods and beverages to children. [WHO, 2008] This includes working with consumer groups and the private sector to “deal with such issues as sponsorship, promotion and advertising.” [WHO, 2004] Special mention is made of necessity for international co-operation, as many companies operate on a global level.

In South Africa the National Department of Health, in its Strategy for the prevention and control of obesity, states that one of its aims is to “ensure responsible and ethical advertising and marketing of food by the food industry” in order to achieve its objective of creating an enabling and supportive leptogenic environment. [NDoH, 2015] It requires the co-operation of the food industry, which is part of the Consumer Goods Council of South Africa (CGCSA), media, and the Advertising Standards Authority of South Africa (ASASA) to develop, pledge and adhere to a code of conduct which aims to limit the exposure of children to harmful food marketing. This is essentially reliance on industry self-regulation.

Industry self-regulation is defined as “the regulation of an industry by its own members, usually by members of a committee that issues guidance and sets standards that it then enforces.” [Investorwords website, 2017] Typically this would include guidance on ethical, legal or safety standards. Self-regulation allows the food and advertising industries to avoid being monitored by governmental or independent agencies, by making a commitment to improve children’s health, such as through reducing their exposure to marketing of unhealthy food products. It is no surprise that this option is preferred by industry, as it enables the preservation of commercial interests while also promoting a positive public image. [Hebden et al, 2010]

An example of industry self-regulation is the Framework for Responsible Food and Beverage Marketing Communications set out by the International Chamber of Commerce (ICC). [International Chamber of Commerce, 2012] The ICC acknowledges that children are vulnerable to food marketing which leads to obesity, thus it encourages marketers and advertisers to adhere to the guidelines and not to exploit their naivety. The code advises that marketing and advertisements aimed at children must clearly be recognisable as marketing. Advertisements should also support positive behaviour and social values. However the code also states that parents, educators and others have the important task of helping children develop a critical understanding of marketing techniques. This disclaimer is yet another example of industry appearing to take responsibility while shifting blame.

The main criticism of industry self-regulation is that it is ineffective, both in the marketing and food industry spheres. Termini et al described the methods by which ICC guidelines are violated by marketers, including misleading and confusing children with food advertisements,

as there is no fear of reprisal for these infractions. [Termini et al, 2011] While the implication of food industry pledges is that the nutritional quality of food marketed to children will be improved, Kunkel et al found that this was not the case. [Kunkel et al, 2015] The reasons for this included weak standards for defining nutritious foods and lack of full participation within industry.

These findings concur with those of Sharma et al, who identified the factors which contribute to the failure of self-regulation as a public health measure. These are: lack of participation by leading companies; harmful practices as a result of weak standards; failure to apply standards globally; lack of transparency and objective scientific input; and ambiguous interpretation of compliance and impact. [Sharma et al, 2015]

The Advertising Standards Authority of South Africa (ASASA) has also developed a code of advertising practice with special attention to food and beverage advertising to children. [Advertising Standards Authority of South Africa, 2017] These guidelines include avoiding exploitation of children's lack of knowledge or credulity, and not encouraging or condoning excess consumption or unhealthy lifestyles. Specifically with regard to children under the age of 12 years, advertisements may not directly appeal to them to purchase products, nor exploit their imagination. It is interesting to note that celebrities and cartoon characters may not endorse products to children under the age of 12, except in the case of company-owned characters.

Unfortunately ASASA is not responsible for checking the content of advertisements prior to airing them, as it is not a regulatory body. [Mchiza et al, 2013] Therefore it can only react to complaints after advertisements have already been viewed. Furthermore the restrictions in advertising to children under the age of 12 are not enforceable in any practical sense.

One of the major flaws of self-regulation is that while the industry professes to act in children's interests and adhere to codes of practice, there is no effective way to enforce compliance. A prime example is the ASASA guideline that prohibits the advertisement of any products that do not promote a healthy dietary choice or lifestyle, nearby or on the premises of pre-schools and primary schools. Not only has this been shown to be violated by the placement of billboards and signs in and near schools in South Africa [Moodley, 2013; De Villiers, 2012] but also raises questions about fast-food companies' corporate sponsorships of children's sport, which is in a grey area if not in outright violation of the code.

Co-regulation between government regulation and industry self-regulation is recommended by the WHO. [WHO, 2004] The only way to enforce compliance is through statutory regulation that governs food and beverage marketing. The extent of these laws can vary: in

some countries all advertising to children is banned, whereas in others only specific restrictions apply. [Cassim, 2010]

At present, no regulation of food and beverage marketing is implemented in South Africa, though draft legislation for its provision exists. [Igumbor et al, 2012] A draft regulation on labelling and advertising of foodstuffs was published in 2007 by the Department of Health, under the Foodstuffs, Cosmetics and Disinfectants Act, Act 54 of 1972.[South Africa, 2007] This included the prohibition of advertisements of foods not regarded as essential to a healthy lifestyle, which includes fast-foods and sugar-sweetened beverages. The use of gifts, tokens, cartoon characters and animation in advertisements would be prohibited as well. The regulation involving advertising of foodstuffs to children was put on hold, reportedly to wait for the publication of WHO recommendations in 2010. Since then, the regulation which governs food labelling (regulation R146) has been implemented, but no progress has been reported on the food marketing component of the regulations. [South African Food Data System, 2015]

Until such time that effective, enforceable legislation exists to regulate the marketing of food and beverage products to children in South Africa, this contentious practice will present a major stumbling block to public health efforts in this country. Industry self-regulation is, at best, ineffective as a public health measure. The Nuffield council report argues that industries which impact on public health have ethical responsibilities towards society which require more from them than simply meeting legal requirements. According to the Stewardship model, when there is a failure in corporate responsibility to play their role in promoting health and preventing disease, it is the function of the state, as steward, to intervene to reduce the risk to the population. A sugar-tax is one example of such an intervention which can make a significant change in the correcting the obesogenic environment which directly threatens the health of children.

5.9 Conclusion

The prevention of childhood obesity is not a matter of personal responsibility for parents alone to address, as the personal responsibility paradigm has a number of shortcomings, including victim-blaming and disregard for the social determinants of health behaviours. Before discussing the role of parents in the prevention of childhood obesity, the moral status and rights of children has to be taken into consideration. The parent-as-steward model allows parents to raise their children without undue interference from the state, whilst balancing parental rights against the rights of the child.

With regards to the extent that the state should interfere when parents cannot prevent childhood obesity, it is vital to have a high threshold for state intervention and to use the least invasive alternative available before charging parents of obese children with child neglect. It is important to recognise that parents face multiple societal challenges to preventing childhood obesity, as there is insufficient societal support in an extremely obesogenic environment. Instead of approaching childhood obesity from a purely biological or behavioural perspective, it is imperative that the environmental influences which promote children's energy intake and restrict their energy expenditure in South Africa are addressed.

The toxic food advertising and marketing environment, which relentlessly promotes unhealthy food to children in ways which manipulate their vulnerability, is a particularly contentious issue. This is aggravated by the fact that attempts at regulation of food marketing to children are ineffective as insufficient legislation exists to curb the industry.

By recognising and addressing interventions towards all the aspects of the obesogenic environment which are responsible for the epidemic, the National Department of Health has presented a comprehensive strategy to prevent childhood obesity in South Africa. All it needs now is the might of the law behind it to ensure that the strategy is realised.

CHAPTER 6: Stigma, childhood obesity and implications for public health interventions

It is well known that the major challenge of public health interventions is how to address infringements on liberty. Another important concern in public health ethics is the creation of unintended negative consequences arising from public health interventions. Although medical ethics has evolved and been refined over the decades, the centuries-old injunction "Primum non nocere" remains a significant guiding principle in the field. Non-maleficence may not be the "first" principle any longer, but "Do no harm" remains at the forefront of bioethics on both the individual and the public health levels. The reduction of health inequalities is held by the Nuffield council's Stewardship model to be at the core of any public health programs. [Nuffield Council on Bioethics, 2007] They are careful to note however, that public health interventions may inadvertently increase inequalities. An example of this is stigmatisation of disadvantaged groups, as an unintended effect of targeted interventions. A significant harm that could arise from childhood obesity interventions is the creation and perpetuation of stigma.

Stigma associated with obesity has become a well-documented phenomenon and the implications of stigma for obesity prevention interventions warrants closer examination. The first step is to clarify what is meant by the term stigma.

6.1 What is stigma?

The Oxford dictionary defines stigma as "a mark of disgrace associated with a particular circumstance, quality or person." [Oxford dictionary, 2017] Originating from the Greek, the word refers to marks made on the body by a pointed object.

In his landmark book on stigma, Erving Goffman noted that these marks were designed to indicate some negative aspect relating to the moral status of the bearer, signifying "a blemished person, ritually polluted, to be avoided, especially in public places." [Goffman, 1963] Whilst in modern times the term refers to an attribute rather than a bodily mark, it is nonetheless "deeply discrediting" or has the potential to make the possessor discreditable.

Goffman distinguished between three types of stigma: "abominations of the body" (physical deformities), "blemishes of character" (suggested by a history of mental illness, homosexuality or imprisonment, for example) and "tribal stigma of race, nation or religion". At face value, stigma associated with obesity would be categorised as bodily abomination; however obesity is also stigmatised as a character flaw, as will become evident later in this

chapter. In addition to discrediting or discreditable attributes, Goffman's concept of stigma is associated with discrimination, shame and lack of acceptance.

A large body of work on stigma has arisen following the publication of Goffman's book. However, because the concept of stigma can be applied to a multitude of characteristics and across various disciplines, Link and Phelan note that there is much variation in the definition of stigma, with many works referring to an aspect of stigmatisation (such as stereotyping) under the blanket term stigma. [Link & Phelan, 2001] Their response to this criticism is a conceptualisation which explicitly defines the components that result in stigma.

Link and Phelan assert that stigma occurs when the following inter-related components converge: First, human differences are differentiated and labelled. What makes these differences relevant is the fact that society at the time deems them significant and it then becomes accepted that they are relevant. The assertion that labels are socially selected is supported by the argument that differences are created by means of oversimplification, for example classifying race as black and white, when it is evident that racial differences exist across a spectrum. Furthermore, time, place and culture affect what features are considered significant. The authors cite the example that small foreheads and large faces were thought to be ape-like in the 19th Century and thus deemed an indication of criminal nature. Because these differences are socially selected, Link and Phelan prefer the designation "label" rather than "attribute, condition or mark" as those terms "imply that the designation has validity."

Second, labelled persons are linked to undesirable characteristics (negative stereotypes) through dominant cultural beliefs. Link and Phelan point out that stereotyping is a core feature of stigma concepts in the literature since the time of Goffman's publication. It is the linking of the label to a set of negative attributes that creates a stereotype. Examples cited include black people being stereotyped as lazy, and gay people stereotyped as flamboyant.

Third, there is separation of labelled persons into categories that distinguish "us" from "them". Linking labels to negative stereotypes forms the basis of the belief that there is a fundamental difference between the labelled groups ("them") and the rest of society ("us"). Link and Phelan note that taken to the extreme, horrific treatment of the stigmatised group is permitted by those perpetuating the stigma on the basis that "they" are not really human. Ready examples in human history spring to mind, including the treatment of Jews during the Holocaust and slavery in America.

Fourth, status loss and discrimination of labelled persons causes unequal outcomes. Labelling, stereotyping and separation result in people being devalued, rejected and excluded. This devalued status causes disadvantages in life chances generally, including

domains such as housing, income, education, well-being and health. In the standard concept of stigma, discrimination is understood to occur at an individual level: a mentally ill person is refused a job, for example, on the basis of labelling and negative stereotyping. Link and Phelan's conceptualisation contends that discrimination also occurs on a structural level (for example, barriers to access further limit opportunities for disabled persons to work.) Furthermore, status loss itself can be the basis for discrimination, for example when low status makes involvement or inclusion in social or community activities less desirable.

Fifth, there has to exist a situation of power, be it social, economic or political, that allows the labelling, stereotyping, separation and status loss or discrimination to exist. According to this conceptualisation, power is essential to produce stigma. Link and Phelan supply the following scenario in support of their argument: consider the situation in which patients treated for mental illness label clinicians as "pill-pushers", stereotype them as "cold, paternalistic and arrogant" and treat them differently by avoiding or minimizing conversation with them. Whilst the components of stigma are evident, this group of patients does not have social, cultural, economic or political power to effect discrimination and status loss in the group of clinicians. Thus it is evident that stigma depends on the exercise of power.

In summary, Link and Phelan's conceptualisation of stigma comprises the co-occurrence of labelling, stereotyping, separation, status loss and discrimination in a situation where the exercise of power allows stigma to occur.

The strength of their concept results from its ease of application: it provides clarification about how stigma is defined, by the explicit identification of its components, whilst remaining coherent with the understanding currently applied to stigmatised groups. Furthermore, Link and Phelan assert that their concept helps us understand important issues about stigma.

The first of these is that stigma is a matter of degree, with some groups stigmatised more than others. Analysis of the components of stigma could help explain why there is variation in the extent of stigmatisation between groups.

Second, analysis of stigma components could also provide insights as to why certain groups dominate causing significant effects in others. The significance of power differences also has implications for our understanding of stigmatised people as "passive victims" or "active challengers".

Finally, their concept of stigma explains why stigma is a persistent problem, since it takes into account the multitude of mechanisms from which discrimination results, as well as the broad range of life chances which are disadvantaged by stigmatisation.

This concept of stigma also has important implications for future attempts to address the problem. It illustrates that an intervention which targets a specific belief or behaviour will be inadequate, as the multiple mechanisms and levels at which stigma operates must be addressed. Furthermore, unless interventions address the groups with power, elimination of stigma is unlikely to be achieved.

6.2 Stigma in childhood obesity

Whilst the negative medical consequences of childhood obesity are a serious cause for concern, it is equally important to take into account the negative social and emotional effects experienced by overweight and obese children as a result of stigmatisation. Stigma due to childhood obesity is not a new phenomenon – there is now a considerable body of research spanning half a century which covers the topic. Puhl and Latner reviewed the research literature on weight stigma in children and adolescents and categorised their findings according to nature and extent of bias, sources of bias and consequences of bias. [Puhl & Latner, 2007] They also looked at stigma reduction efforts and identified areas for future research into weight stigma amongst youth.

6.2.1 The nature and extent of stigma in childhood obesity

A variety of methods has been used by researchers to assess the different aspects of stigma such as attitudes, stereotypes and behavioural intentions. Puhl and Latner report that as the prevalence of obesity has increased in recent decades, so too has weight stigma worsened. A classic study conducted by Richardson et al in 1961 asked children aged 10-11 years to rank six pictures of children in order of preference that they would like as a friend. [Richardson et al, 1961] Of the six pictures, one depicted an overweight child, four depicted children with various disabilities and one depicted a child of average weight with no disabilities. The study showed that the picture of the overweight child was considered least likeable and ranked last.

Latner and Stunkard replicated the study in 2003, using the same pictures in Grade 5 and 6 children. [Latner and Stunkard, 2003] They found that not only was the picture of the overweight child again ranked lowest and least likeable, but that the amount of prejudice against the overweight child, as judged by the distance between the cards, had significantly increased.

Numerous studies cited by Puhl and Latner show that both genders experience weight stigmatisation, but that girls may experience more negative attitudes than boys. The types of

victimisation may also differ between genders, with obese boys more likely to experience teasing and bullying whilst obese girls report social exclusion and hurtful treatment.

Weight-based stigma occurs across all age groups, surprisingly even amongst pre-school children as young as 3 years old. It worsens in the elementary school years, but tends to level off or lessen towards adulthood.

With regards to ethnicity and cultural differences, it is unclear what effect these have on stigma. Some studies report that compared to Japanese or Mexican children, Caucasian children may have more negative attitudes towards overweight peers. In terms of vulnerability, overweight African American youth experience similar bias as that experienced by overweight Caucasian youth.

Not surprisingly, higher levels of obesity are reported to be associated with worse stigmatisation in terms of frequency and intensity. Furthermore, obese and overweight children tend to internalise stigma and are thus unable to find support or protection from other overweight or obese children, as they come to hold the same negative attitudes towards weight. In this way perpetuation of weight-based stigma occurs.

An important variable in negative attitudes towards obesity is the belief about causation of obesity: greater blame and stigma occurs when children believe that weight is under personal control, rather than secondary to a medical or external cause. Puhl and Latner report that studies suggest a reduction of blame and stigma can be achieved by changing beliefs about causes and responsibility for obesity.

6.2.2 Sources of bias in childhood obesity

Overweight and obese children experience stigma from a multitude of sources, including their peers, teachers and even their parents.

Amongst their peers, children experience stigma as early as the pre-school years, with overweight linked to negative characteristics such as “mean, ugly, stupid, sloppy, lazy and sad”. Similar negative attributes are ascribed to obese children in the elementary school age group, including “ugly, selfish, lazy, lying, stupid, less popular, less happy, worse game partner, poorer leader”. Amongst adolescents, these negative stereotypes grow to include “eating too much, unclean, unable to perform certain physical activities, having no feelings.”

Teachers and school staff members are another source of bias in the school-setting, albeit unintentionally at times. A study of elementary school principals found that more than half of the sample believed that lack of self-control and psychological problems were major

contributors to obesity. [Price et al, 1987] In other studies cited, Physical Education teachers in particular were reported as having more negative attitudes to overweight and obese children. College selection committees were found to be another source of bias, with obese students having significantly lower rates of college acceptance despite equivalent academic results and application rates to peers.

Whilst there are few studies about parental bias in childhood obesity, the unexpected finding that children experience weight stigma from their parents is consistent across these studies. Parents who placed a high importance on their own appearance were more likely to endorse negative stereotypes, as well fathers who had higher income and education levels. Furthermore, even overweight and obese parents were likely to endorse negative stereotypes. [Davison and Birch, 2004]

The way in which parents communicate with their children can also transmit negative stereotypes, even if it is indirectly conveyed. [Adams, et al, 1988] This was demonstrated by providing parents with pictures of an obese child, an average weight child and a handicapped child and instructing them to tell their child a story about each picture. The stories about the obese child portrayed the child as having lower self-esteem and had no positive outcomes. This is in significant contrast to the stories about the handicapped child, which had the greatest number of positive outcomes overall. From this, it can be seen that attitudes of blame and personal responsibility are applied to obesity, even in childhood.

Also surprising was the finding of another study which showed that compared to average weight girls, parents gave overweight girls less financial support for college. [Crandall, 1991] Puhl and Latner suggest that the reason for parents' stigmatising attitudes and behaviours may be the pressure and negative evaluation they face by being held responsible for their children's weight.

Schwartz and Puhl conclude that parents are faced with the difficult task of maintaining a balance between supporting and protecting their children against pervasive weight-stigma, whilst simultaneously assisting them to make healthy food and exercise choices in a non-punitive manner. [Schwartz and Puhl, 2003]

Finally, Puhl and Latner assert that other unstudied sources of stigma in childhood weight-bias need to be addressed. Research which concludes that adults experience weight-stigma from healthcare professionals leads them to question whether similar negative attitudes and behaviours have been experienced by overweight and obese children. Similarly, they identify a range of possible sources of weight stigma that need to be explored.

6.2.3 Negative effects of stigma in childhood obesity

The emotional and social effects of childhood obesity are not given as much attention as the physical consequences thereof. [Washington, 2011] Nonetheless there is a significant body of work addressing the psychosocial consequences of childhood obesity, which indicates that childhood obesity itself results in an increased risk of negative outcomes in these areas. The aim of Puhl and Latner's review was to assess the effects of weight stigma on psychosocial, academic and physical health outcomes in overweight and obese children.

Psychosocial aspects reviewed include self-esteem, depression, body dissatisfaction, peer relationships, suicidal behaviours and socio-economic status. Physical health outcomes reviewed included eating behaviours, physical activity and cardiovascular health.

Their findings were that weight stigma has negative effects in all these areas. In overweight and obese youth, weight stigma and weight-based teasing are linked to lower self-esteem. Teasing by peers and parental criticism both resulted in lower self-concept, and poor self-esteem resulting from weight-based teasing affected both males and females. It is interesting to note that children who believed in personal responsibility for overweight, or who were exposed to weight-loss treatment that implies personal responsibility were found to be at increased risk for low self-esteem.

Regarding the relationship between weight stigma and depression, weight-based teasing causes overweight and obese adolescents to be more vulnerable to depression, in both genders and across ethnic groups. Negative emotional effects are predicted by the teasing itself, rather than the weight.

Victimisation due to weight results in increased risk of body dissatisfaction, regardless of actual body weight. Again ethnicity did not affect body dissatisfaction linked to weight-based teasing. Furthermore, body dissatisfaction resulting from weight-based stigma resulted in other negative effects, mainly an increased risk in unhealthy and disordered eating behaviours.

Interpersonal relationships are negatively affected by weight stigma, with obese youth less likely to be chosen as friends and facing more social rejection by their peers. Weight bias also affects dating relationships adversely, with worse outcomes for overweight girls than boys. Puhl and Latner warn against the "spread of stigmatisation" which results in individuals distancing themselves from social relationships with obese individuals, in order to avoid stigma themselves.

Weight-based teasing and victimisation are associated with increased risk of suicidal ideation and attempts in overweight youth. Eisenberg at al found that adolescents who were teased about their weight were 2 to 3 times more likely to exhibit suicidal ideation than those who were not teased. [Eisenberg et al, 2003] This alarming finding is supported by multiple studies in overweight and obese adolescents and underlines the importance of addressing stigma in this vulnerable population.

Puhl and Latner assert that there are a range of psychosocial outcomes that affect obese youth, thus it is important to consider the totality of negative consequences that affect their quality of life. A study by Schwimmer et al reported the shocking finding that the quality of life of obese children is comparable to that of children with cancer. [Schwimmer et al, 2003]

Obese youth have been found to have lower socio-economic status in later life, which was not due to chronic physical health problems. It is not known how weight-bias affects this outcome, but it is postulated that weight bias could be a contributing factor. [Gortmaker et al, 1993] Puhl and Latner identify this as an avenue for future research.

Obesity has also been linked to lower academic abilities, but findings are mixed, with uncertainty as to which is the causal factor and which is the outcome, in the relationship between obesity and low academic achievement. Whether weight bias impairs academic achievement is identified as another area for investigation.

Disordered eating has been found to be more frequent in youths who have experienced weight-based teasing. This occurs in both genders, as well as in non-overweight youths, which means that the eating disorders are related to the teasing rather than body weight. Teasing was found to be a predictor of binge-eating, unhealthy weight control behaviours and frequent dieting.

Weight-based victimisation leads to lower levels of physical activity in overweight youth, as overweight children try to avoid teasing by their peers, as well as negative comments about their weight and athletic abilities from teachers.

An interesting finding cited by Puhl and Latner is from a study that investigated the effects on ambulatory blood pressure in adolescents who perceived unfair treatment due to their physical appearance. [Matthews et al, 2005] Even after other determinants of blood pressure were controlled for, those who perceived discrimination because of their weight and physical appearance had higher blood pressure. This is an important area for further research, as bias and internalisation of weight stigma appear to have physical effects on cardiovascular health. Internalisation of stigma in obese children is also linked to other physical effects,

such as increased stress, with resultant elevated cortisol levels leading to perpetuation of metabolic abnormalities contributing to obesity.

All of these findings confirm that stigmatisation of overweight and obese youth is pervasive, occurring across multiple domains and from various sources. This makes it difficult, if not impossible to avoid. Furthermore, the evidence shows that the consequences of weight stigma are far from benign. Significant attention is thus required from public health, in order to effectively address this problem.

Puhl and Latner assert that “research efforts should move beyond the documentation of weight stigma” and should focus instead of finding and implementing effective solutions to reduce stigmatisation of obese youths. The role of public health interventions in stigma will be considered next.

6.3 Stigma and public health interventions

Of the two major ethical challenges facing public health, the creation of unintended negative consequences through stigmatisation is given less attention in the literature, compared to infringements on individual liberty. However, historical examples of how stigma impairs public health efforts are plentiful, ranging from responses to cholera amongst Irish Americans in the 19th century, to tuberculosis in African Americans in the 20th century, and more recently, the HIV/AIDS epidemic. [Puhl and Heuer, 2010] Puhl and Heuer sum it up neatly, stating that “in the field of public health, stigma is a known enemy.”

Whilst the development and adoption of strategies to reduce stigma has been a key feature of the global public health response to HIV, the stigma of obesity as a public health concern has largely been ignored. As we have seen from the discussion above, there is evidence aplenty of the negative effects of stigma in overweight and obese children at the individual level. From a public health perspective there are two implications with regard to stigma: The first is the way in which public health interventions may perpetuate stigma. This discussion centres on whether promoting a specific body shape results in the preference of certain health identities to the detriment of others.

The second is the way in which stigma affects public health efforts, with negative consequences leading to an increase in morbidity and mortality. These negative effects have been identified by Puhl and Heuer as disregard of the societal and environmental factors which lead to obesity, impairment of efforts to prevent obesity, increased health disparities and social inequalities. [Puhl and Heuer, 2010]

A key question pertinent to both these dimensions is whether stigma can ever be used as a public health tool. This has been the topic of recent debate and will be explored here.

6.3.1 Stigma as a negative effect of public health interventions

Interventions that aim to prevent obesity must necessarily promote a certain body type as being the ideal standard. The obvious risk of public health interventions which target certain individuals as part of a high-risk group is that those with body types which do not conform to the promoted ideal could face stigmatisation. Furthermore, this concern occurs against a backdrop of existing stigma that is faced by obese individuals in a society which promotes the “thin is good” ideal, for reasons that have nothing to do with health. Far from being a secondary concern, the exacerbation of emotional consequences such as low self-esteem and negative body image by public health actions or policies is regarded as “a serious ethical problem.” [Washington, 2011]

Public health policies and interventions aim to promote a certain health type or identity, which arise out of value judgements. Health identity can be categorised into two groups: accepted health identities or contested health identities. [Fry, 2012] Accepted or permissible health identities are characterised by rationality, responsibility, discipline and control, as well as aspirations to improve or attain health. In contrast, contested or disapproved health identities are associated with being unhealthy, excessive consumption of food, alcohol or drugs, lack of control, not taking treatment or engaging in risky behaviour.

The definition of health identities is of ethical relevance because it forms the basis of our understanding of and response to efforts to achieve good health. As Schwartz and Puhl observe, “Obese people are not discriminated against because they are medically compromised. They are stigmatised because their obesity is viewed as a reflection of poor character.” [Schwartz and Puhl, 2003]

Obesity prevention strategies aimed at the individual emphasize personal responsibility, which leads to a moral judgement about overweight or obese individuals. These moral judgements also extend to attitudes about children, as we have seen from earlier discussion on stigma in childhood obesity. It is vital that obesity prevention interventions take into account existing prejudicial beliefs and ensure that these are not perpetuated by misinformation or inadvertent discrimination. Taking a social or environmental approach to obesity prevention, as discussed in the previous chapter, would be a better approach, in terms of both successful outcomes as well as stigma reduction.

Holm asserts that “we can justifiably claim that it is difficult to promote one body shape as good without implying that other shapes are bad, and it is unclear whether it is possible to prevent people from linking bad body shape to personal and moral badness.” [Holm, 2007] A possible solution to this is to be found in the Health at Every Size (HAES) message, which presents a new paradigm in weight management. [Robison, 2005] Instead of the traditional focus on weight loss and BMI, the focus of HAES is on creating a healthy lifestyle through self-acceptance, physical activity for enjoyment and health, and normalised eating. Supported by studies that show that obese and overweight people can be medically healthy, the concept of metabolic fitness addresses health risks allowing the focus to shift away from unattainable “ideal weight” goals to healthy weight and health at all sizes. This intervention meets many of the goals of public health programs as defined by the Stewardship model, such as a focus on the health of vulnerable people, promoting health by helping people overcome unhealthy behaviours and making it easier for people to lead healthy lives.

As O’Dea concludes, our obligation in childhood obesity prevention is to use a broad perspective and ensure that through our preventive efforts we “first, do no harm.” [O’Dea, 2005] Stigma as a consequence of public health interventions, even if unintended, is a harm that must be foremost in mind in childhood obesity prevention.

6.3.2 The public health consequences of stigma

As well as having profound negative consequences for the obese individual, obesity stigma also undermines public health efforts and creates significant barriers to obesity prevention efforts. [Puhl and Heuer, 2010] At the public health level, Puhl and Heuer identify four main consequences of stigma: a failure to consider societal and environmental causes of obesity, impaired efforts to prevent obesity, increased health disparities and social inequalities.

First, stigmatisation of obesity arises from the societal belief that obesity is a personal responsibility. Obese and overweight people are blamed due to the belief that their excess weight is a result of their personal choice not to exercise and to overeat. Research shows that conditions which are attributed to personal responsibility, such as obesity, are associated with dislike, anger and less pity. [Weiner et al, 1988] This is in contrast to conditions which have a low personal responsibility rating, such as Alzheimer’s, which is associated with greater levels of liking, pity and helpful intentions.

Furthermore, the evidence around long-term weight loss shows that obese individuals are not likely to lose more than 10% of their body weight, regardless of which methods they use; nor is it likely that weight loss will be maintained over the medium to long term. This means

that stigma is likely to persist for those individuals who have lost enough weight to become metabolically healthy, but are still overweight or obese.

The belief that obesity is a result of personal choices and requires personal solutions allows society to condone stigmatisation of obesity. As public health practitioners are aware, individual behaviours are a response to multiple interlinking environmental, economic and social factors which make up the obesogenic environment. Interventions which target individual behaviours are not only less likely to be effective, but serve to emphasise the personal responsibility message and affirm societal misperceptions about obesity. Not only is there a need to improve public awareness about the societal and environmental contributors to obesity, but Puhl and Heuer go a step further, recommending promotion of the message that "obesity is a chronic disease with a complex etiology, and a lifelong condition for most people." This recognition of the persistent nature of the condition certainly requires that we reconsider the way in which efforts to prevent childhood obesity are presented.

The second consequence of stigma at a public health level is the impairment of obesity intervention efforts. There are numerous historical examples of how stigma affects public health efforts to prevent or treat stigmatised diseases, but in the case of obesity there are notable shortcomings in policy responses that are attributable to social constructions of obesity.

Puhl and Heuer assert that obesity is not given equal consideration compared to other non-stigmatised conditions, as it is "dismissed as a personal failing". This is evident in policies which focus on nutrition education and the promotion of exercise instead of addressing societal and environmental contributions to the condition. Additionally, this is reflected in government spending on obesity in the USA, which was reported to be a fraction of that spent on other diseases, despite obesity affecting significantly more Americans.

Compared to government responses to other public health challenges such as tuberculosis and HIV, where policy involved strategic efforts to reduce stigma, the response to obesity has failed to address stigma and discrimination. Furthermore, environmental and societal contributors to obesity have been ignored by legislation, which has instead protected food manufacturers and restaurants, to the extent of proposing legislation which is overtly discriminatory to obese people. This includes proposals such a Mississippi State House Bill, which would ban restaurants from serving obese people. [Pomeranz, 2008] The proposal of such a bill indicates the extent to which weight stigma is allowed to exist.

The third public health consequence of stigma in obesity is an increase in health disparities between the obese and non-obese population. Several studies report that obese people experience substandard health care, including disrespectful attitudes from healthcare providers, shorter consultation durations, and less provision of health education. Obese individuals also report that all their medical problems are blamed on their weight and that they are not taken seriously due to their weight.

In addition, obese people are found to have lower health care utilisation, including a lower likelihood of attending preventive healthcare screenings. Barriers to seeking care include fear of negative attitudes, unsolicited weight-loss advice, and medical equipment that is too small.

As a population at risk for comorbities related to weight, this is a serious public health implication which must be addressed in order to reduce morbidity and mortality.

The final public health consequence of weight-related stigma is social inequalities which result from stigma. Since obesity is prevalent amongst people with low socio-economic status, stigma due to obesity compounds the stigma already experienced by disadvantaged groups. This is experienced in multiple domains, including occupational, educational and relationship opportunities. This problem is aggravated by the fact that obesity is regarded as a socially acceptable prejudice, with stigma perpetuated by the mass media. Furthermore, social and economic disparities which contribute to obesity serve to increase health disparities experienced in obesity.

All of these factors support the observation that obesity stigma is a social justice issue as well as a public health priority. [Puhl and Heuer, 2010] Yet despite the evidence that stigma is harmful on both an individual and public health level, there are some who suggest that stigma could be beneficial, acting as a motivator for weight loss. This contentious proposition will be considered next.

6.3.3 Could stigma be used as a public health tool in obesity prevention?

In an article which stimulated much debate by challenging orthodox views on the role of stigma in public health, Bayer raised the question of whether stigma is necessarily a threat to public health. [Bayer, 2008] Bayer's argument, arising out of public health efforts to "denormalise" smoking, proposed that a mild degree of stigma could have benefits that outweigh the burden of stigma at the individual level and have a profound benefit at a public health level.

The denormalisation strategy, which was embraced by WHO and public health agencies, did not overtly refer to stigma, but "sought to marginalize smoking (and) endorsed graphic messaging that depicted smoking as harmful even murderous." [Bayer and Fairchild, 2015] The strategy involved efforts to "deglamourize smoking and to make it socially unacceptable" and used anti-smoking legislation as a vital component of the plan. [Williamson et al, 2014]

Bayer's argument relies on Link and Phelan's conception of stigma as occurring in degrees, with variation in amount of stigma experienced by different groups and in the different components of stigma.

In response to Bayer, Burris argued that rather than being a matter of degree, stigma is absolutely unacceptable, as it is "inherently inhumane" and "must never be used by the state or those invoking the power and resources of the state as a tool of public health." [Burris, 2008] He argued that while it is acceptable to use tools of behaviour change and social marketing to emphasise negative aspects of risky behaviour, the use of stigma is counterproductive, as there is no proof that it will result in the adoption of healthy behaviours.

However, those who advocate the use of stigma view the impact of smoking denormalisation as evidence of its efficacy. Williamson et al report that the denormalisation campaign has been referred to as "a public health triumph" for transforming attitudes towards smoking, "turning what had been considered simply a bad habit into reprehensible behaviour." [Callahan, 2013]

The response to this has been that, whilst in certain social classes in wealthier countries the denormalisation campaign can be said to have succeeded, rates of tobacco smoking in lower socio-economic classes and in low and middle income countries have remained high. [Williamson et al, 2014] It is evident therefore that as a public health strategy to reduce smoking, stigmatisation has had at best, limited success.

Stigmatisation also has negative implications for some fundamental goals of public health. Williamson et al argue that stigma has negative consequences for citizen involvement, trust and social capital. Active citizen involvement in health is a fundamental aim of health promotion, endorsed by both the Ottawa charter and the Declaration of Alma-Ata. [WHO, 1986 and WHO, 1978] Stigmatisation serves to erode the trust of citizens, which is a vital component for citizen involvement and engagement in health. The long-term adverse effects of stigmatisation on trust could be difficult to repair. In addition, instead of active citizen involvement in health, stigma could ultimately lead to passivity in health consumers.

Stigma also erodes social capital, which results in decreased confidence and impaired capacity to form supportive relationships and may have greater effects on communities than anticipated. These effects are worse in groups who are already socially marginalised. Furthermore, stigma could entrench inequalities by “locking people in deviant roles”. [Williamson et al, 2014]

Williamson et al conclude that the risk of using stigma in public health policies is that it will undermine the central aims of public health and be unable to achieve health goals in the long-term.

Bayer and Fairchild’s response is that while stigmatisation may not always work, it is important to recognise that there are differences in stigma which raises the question of when and how it may be acceptable to use stigma, “guided by principles of fairness and decency.” [Bayer and Fairchild, 2015]

It is difficult to agree that such a compromise is possible, not least because it will be difficult to quantify what degree of stigma is “fair and decent” in proportion to the benefits envisaged. We cannot engage and empower citizens to be active in health promotion if we undermine them by implementing policies which result in stigma. As Nussbaum asserts, the use of humiliation by the state against its citizens is contrary to the ideas of equality and dignity which make up the foundations of liberal society. [Nussbaum, 2004]

Whilst the debate arose out of public health efforts to reduce smoking and was later applied to the field of substance abuse, the same arguments against the use of stigmatisation are applicable in obesity prevention efforts. Not only is it ethically unacceptable to implement strategies that induce stigma, but there is also sufficient evidence to show that weight stigma is unlikely to be effective in promoting weight loss.

The negative consequences of stigma in obesity have been extensively discussed above. What follows is a brief summary of the evidence against the use of stigma as a motivational tool for weight loss.

The first argument against stigma in obesity interventions is as follows: if stigma was effective, then the increased rates of stigmatisation of obese children over the last 40 years should have resulted in a decrease in childhood obesity rates. Instead there has been an increase in both stigma and obesity rates. [Latner and Stunkard, 2003]

Second, the evidence shows that instead of leading to weight loss, stigma is associated with an increase in unhealthy eating behaviours, such as binge eating, eating disorder symptoms and bulimia. [Puhl and Heuer, 2010] With regard to physical activity, weight-based

victimisation does not encourage increased exercise, but leads to decreased participation in sport, negative attitudes about sport and lower levels of physical activity.

Third, weight bias results in internalisation of stigma, which further perpetuates stigma instead of acting as catalyst for behaviour change.

Thus we can conclude that stigma in obesity is ineffective as a motivator for weight loss and it does not produce benefits proportionate to the harms inflicted. Furthermore, even if it did result in weight loss, that would not make the use of stigma ethically acceptable.

6.3.4 Stigma-specific recommendations for childhood obesity interventions

It is evident that stigma is detrimental to the physical, mental and psycho-social wellbeing of overweight and obese children and that stigma is both unethical and ineffective as a public health tool to promote weight loss. It is therefore imperative that public health interventions for childhood obesity prevention do not add to the stigma burden.

Efforts to denormalise behaviours leading to childhood obesity, such as the campaigns currently directed towards reducing the consumption of sugar-sweetened beverages in South Africa, must be careful not to cross the fine line between denormalisation and stigmatisation. It is vital that the emphasis be placed on the negative consequences of the targeted behaviour, rather than on moral judgements about the consumer.

In order to incorporate stigma reduction efforts into obesity prevention interventions, Puhl and Heuer make three recommendations. [Puhl and Heuer, 2010] First, interventions should address weight-stigma by including messages against stigma, such as shifting the focus to health rather than appearance. Second, intervention should move past individual behaviours to change the societal and environmental factors which lead to obesity. Third, Puhl and Heuer recommend that legislative measures be used against weight-based stigmatisation.

Fry recommends the use of the Nuffield Council on Bioethics Stewardship model to evaluate interventions, ensuring that the proposed interventions are non-coercive, not unduly intrusive and do not conflict with personal values. [Fry, 2012] This is a more general approach, but regardless of which framework is used, it is important that specific measures are taken to assess stigmatising aspects of interventions. Maclean et al have proposed the following recommendations to ensure that obesity interventions are designed to be non-stigmatising. [Maclean et al, 2009]

First, all interventions should be evaluated for stigma. For example, school-based programs could monitor changes in self-esteem for all children before and after interventions.

Second, it is important to be aware of the stigma implications of separating overweight and obese children for targeted interventions, such as selective weighing during school, or specific exercise classes for overweight children. A way around this is to aim health-promotion interventions at all children.

Third, all healthcare providers and professionals such as doctors, nurses, teachers, social workers and dieticians should be trained about stereotyping and educated about obesity. This will ensure that these professionals do not themselves promote stigma or provide inaccurate health messages which exacerbate stigma. This is an important recommendation to implement, particularly since we have seen that healthcare providers are a source of stigma. Furthermore, they may be proponents of the personal responsibility message, as well as inadvertently suggesting inappropriate advice such as dieting and weight-control techniques. [O'Dea, 2005]

Fourth, all public health mass communications should be screened for stigmatising messages. Posters depicting healthy children of a desirable weight, for example, should be careful not to stigmatise overweight and obese children. Promotion of health goals should not denigrate those not currently achieving those goals. Furthermore, the promotion of positive self-image and stereotype reduction should be a focus of communication.

Fifth, all interventions should include stigma prevention efforts, such as teaching coping strategies to counter the psycho-social effects of stigma. This has been shown to be a strong contributor to improving psychosocial wellbeing, as well as in dealing with weight-bias. [Puhl and Heuer, 2009]

Sixth, consultation with stakeholders, such as parents of obese children, is important for finding solutions, both at the planning and implementation stages. This is in not the same as making parents the target of interventions. Rather, this aims to engage parents in the planning and implementation of health care, as part of an empowered community which has trust in the public health system.

Seventh, all segments of multi-level interventions should be evaluated to ensure that interventions provide non-stigmatising approaches that are coherent and consistent across all levels. For example, it is not useful if schools only promote exercise opportunities for elite athletes, when the promotion of active lifestyles for all is a key community message.

Finally, it is important to remember that stigma is layered, and that policies may inadvertently stigmatise subpopulations. This is illustrated by the implementation of food taxes on unhealthy foods, which may present a disproportionate burden to poorer communities who

rely on cheap sources of high-calorie foods. Rather than simply discouraging the purchase of unhealthy food for its negative health effects, the tax also stigmatises the purchaser for the unhealthy behaviour.

Maclean et al conclude that it is insufficient to simply be aware of stigma in obesity interventions, but that it is critical that policies are evaluated for stigmatisation at all levels.

In this chapter it has been shown that stigma in childhood obesity has profound and pervasive consequences, not only on the physical, mental and social wellbeing of obese children, but also for public health efforts to reduce childhood obesity. These include a disregard of the social and environmental factors contributing to obesity, the impairment of efforts to prevent obesity and an increase in health disparities and social inequalities experienced by stigmatised groups. Additionally, the use of stigma as a motivator for weight loss is ineffective and unethical. By ensuring that interventions for the prevention of childhood obesity are designed and implemented in a way which minimises stigma, we can work towards our goal of health promotion with the assurance that we first do no harm.

CHAPTER 7: Recommendations and Conclusion

The prevention of childhood obesity is a public health priority. Childhood obesity is a global pandemic, with rising prevalence rates throughout the world and South Africa, as a country in economic transition, has been particularly affected. Far from being merely an aesthetic concern, childhood obesity has adverse consequences for health in childhood, adolescence and adulthood. Treatment options are limited and have little likelihood of success, therefore prevention of this significant public health problem is of the utmost importance. The fact that there are multiple social and environmental contributors to childhood obesity, collectively termed the obesogenic environment, means that these factors also need to be addressed by public health efforts to prevent childhood obesity.

My aim with this thesis was to explore the ethical issues that arise when designing, implementing and assessing public health interventions to prevent childhood obesity. I argued that childhood obesity is a social justice issue.

I proposed that the moral theory best suited to public health ethics is that of social justice. In Chapter 3 I examined how public health ethics differs from ethics at the individual level and what makes the moral theories used in individual medicine unsuitable for application in public health. Four key differentiating factors were identified in public health ethics, namely a community focus, the aim of disease prevention and health promotion, a collective effort including government involvement, and a social justice orientation. Social justice theory is particularly compatible with these aims and is able to account for the role of the social, economic and political challenges faced in the South African public health context.

Developed specifically for public health by Powers and Faden, the well-being theory of social justice recognises that there are multiple causes of systematic disadvantage, not just in health, but in social, economic and political aspects of life. [Powers and Faden, 2006] Powers and Faden assert that there are six irreducible dimensions of wellbeing, of which health is one. Disadvantage in any of the six dimensions can impact on several dimensions in an exponential manner. This interaction was clearly evident in my discussion in Chapter 2 on the contextual analysis of childhood obesity in South Africa.

According to the well-being theory of social justice, the aims of public health are to advance wellbeing by improving health, with a focus on the needs of those most disadvantaged. Therefore justice requires that we address the social and economic determinants which compound and aggravate insufficiencies in all dimensions of wellbeing. This is especially true in the case of childhood obesity, as the central role of socio-economic and environmental factors as a major contributor to the problem of childhood obesity in South

Africa was made evident throughout my thesis. Indeed it is impossible to address the causes of childhood obesity without taking these social and economic contributors into account, which makes the prevention of childhood obesity in South Africa a matter of social justice.

However, moral theory may not be able to provide enough concrete guidance for public health practitioners. South African public health practitioners may not have had much training in ethics and may require guidance in assessing the ethical aspects of interventions. Furthermore, in a multicultural society like South Africa, practitioners may hold widely varied moral philosophies. This is where the use of frameworks is of practical assistance, especially when the frameworks incorporate an analytic tool to guide practical application.

In Chapter 4 I identified three such frameworks which were compatible with different moral theories, but which were congruent with social justice. Furthermore, I focused on theories which incorporated an analytic tool, and could thus be of practical assistance in moral deliberation on preventative interventions. After comparison of the three models with specific attention to application in childhood obesity prevention, I concluded that the Nuffield Council on Bioethics Stewardship model and Intervention ladder, was best suited to the task. [Nuffield Council on Bioethics, 2007]

All the goals of the Stewardship model are relevant in the South African context, but particularly applicable to the prevention of childhood obesity are the goals of ensuring that environmental conditions enable good health, reducing health inequalities which are unfair, and health promotion which assists in changing unhealthy behaviours rather than merely offering education and advice.

The advantages of the Stewardship model are that it offers ease of practical application, provides criteria for weighing ethical principles and provides procedures for dealing with conflict. Furthermore, it is able to provide guidelines that encourage moral deliberation, whilst being broad enough to avoid a checklist-type approach which would be detrimental to true ethical analysis.

Its usefulness in the childhood obesity context is amplified by the fact that it has a strong social justice orientation, as well as highlighting the need to focus on children’s health. The Stewardship model also takes into consideration psycho-social consequences (such as stigmatisation) which can arise from public health interventions. This is an extremely important ethical concern in childhood obesity, which I elaborated upon in Chapter 6 and will return to later.

An additional advantage of the Stewardship model for assessing childhood obesity prevention efforts in South Africa is the fact that it is applicable during the policy formation stage, as well as in the evaluation of existing programmes. I identified two specific ethical problems which require attention in childhood obesity prevention programmes. The first is the issue of whose responsibility it is, and the second as I mentioned earlier, stigma in childhood obesity.

I examined the issue of who is responsible for childhood obesity in Chapter 5. I explored the personal responsibility paradigm and found it to be problematic, as it ignores the social factors which affect health behaviours leading to childhood obesity and results in victim-blaming. I also considered the moral status and rights of children and concurred with the parent-as-steward model, as it allows parents to raise their children without undue interference from the state, whilst balancing parental rights against the rights of the child. [Brennan and Noggle, 1997]

This provided the foundation upon which I could address the role of the parent in preventing childhood obesity. An important question is the extent to which the state should intervene when parents are thought to be responsible for their child's obesity. One of the constraints identified by the Stewardship model is that interventions which are unduly intrusive must be kept to a minimum. I assessed the implications and legal position on childhood obesity as parental neglect in South Africa and concluded that, in line with Varness's framework for medical reporting of parental neglect, we should have a high threshold for state intervention and begin with the least invasive alternative to removal of the child from the home. [Varness et al, 2009]

The lack of societal support was found to be significant challenge faced by parents, as the prevention of childhood obesity is not merely a matter of advising parents to feed their children healthy foods, but should take into consideration the role of biological drives, parenting behaviours and societal influence as causal factors.

The role of the obesogenic environment on energy intake and energy expenditure in South African children is an inextricable component of childhood obesity prevention efforts and the ethical implications for government, schools, industry and society in the prevention of childhood obesity are thus paramount. My argument that obesity prevention is a societal responsibility was supported by the finding that it is necessary to take an environmental approach to childhood obesity.

A notable feature of the Stewardship model is that it incorporates the role of third parties such as industry in involvement in public health efforts and goes further to accord them

obligations to do so. This was brought to the fore in an examination of the ethics of food advertising and marketing to children in South Africa, which relentlessly promotes unhealthy food to children in ways which manipulate their vulnerability. This is aggravated by the fact that attempts at regulation of food marketing to children are ineffective, as insufficient legislation exists to curb the industry. The Stewardship model aims to “reduce the risks of ill-health that people impose on each other” and furthermore, places an emphasis on protecting vulnerable groups, especially children. Currently the advertising and marketing of food to children raises serious and urgent ethical concerns and much more is needed in the way of social and legislative support in order for the National Department of Health’s Strategy on prevention and control of obesity in South Africa to be effective. [NDOH, 2015]

In Chapter 6 I explored the second major ethical consideration in childhood obesity, namely stigma. Stigma associated with obesity has become a well-documented phenomenon. To evaluate the implications of stigma on childhood obesity interventions, it is necessary to have a clear definition of the stigma concept.

A good understanding of stigma is provided by Link and Phelan’s conceptualisation, which comprises the co-occurrence of labelling, stereotyping, separation, status loss and discrimination, in a situation where the exercise of power allows stigma to occur. [Link and Phelan, 2001] All of these components were found to occur in childhood obesity, with findings confirming that stigmatisation of overweight and obese youth is pervasive, occurring across multiple domains and from various sources. Furthermore, the evidence shows that the consequences of weight stigma are far from benign, with stigma resulting in adverse effects on obese children in the psycho-social, academic and physical domains of life. To achieve a reduction in unfair health inequalities, the stigma of childhood obesity must be addressed.

From a public health perspective I identified two aspects relating to the effects of stigma which pertain to childhood obesity prevention. The first is the way in which public health interventions may perpetuate stigma. This discussion centred on whether promoting a specific body shape results in the preference of certain health identities, to the detriment of others. I concluded that it is while it is difficult to promote one body shape without stigmatising other less desirable body types, it is important not to ascribe moral values to physical characteristics. A possible solution is to focus on healthy lifestyle instead of ideal body weight, as endorsed by the Health at Every Size movement. [Robison, 2005]

The second aspect is the way in which stigma adversely affects public health efforts. These negative effects have been identified as disregard of the societal and environmental factors which lead to obesity, impairment of efforts to prevent obesity, increased health disparities

and social inequalities. [Puhl and Heuer, 2010] Once again, this strengthens my argument that obesity prevention is a social justice issue.

Yet despite the evidence that stigma is harmful on both an individual and public health level, there are some who suggest that stigma could be beneficial, acting as a motivator for weight loss. The debate on whether stigma could be used as a public health tool arose out of successes in the tobacco denormalisation campaign, leading to the proposition that this strategy be extended into the obesity prevention domain. Examination of the evidence on stigma and weight loss led me to conclude that stigma as public health strategy in general is unethical, as it is contrary to the fundamental aims of public health. Furthermore, with regard to obesity prevention specifically, evidence shows that stigmatisation is ineffective in promoting weight loss.

Thus, whilst denormalisation of behaviours which contribute to obesity (such as the excessive consumption of sugar-sweetened beverages) are acceptable interventions, stigmatisation of obesity is not. It is imperative that childhood obesity prevention interventions in South Africa be assessed for stigma at the planning, implementation and evaluation stages. Beyond the general guidelines offered by the Stewardship model in this regard, application of the specific recommendations offered by Maclean et al will ensure that public health practitioners do not cause or perpetuate harms in the form of stigma. [Maclean et al, 2009]

The way forward for ethical childhood obesity prevention interventions in South Africa, though not simple, is clear. Interventions should encompass changes to the obesogenic environment which influence energy intake and expenditure in South African children. Children in all sectors of society should have access to safe areas for physical activity and the opportunity to participate in sport and recreational activity. The inclusion of physical education and sport in schools should be recognised as an important contributor to children's health and all children should be encouraged to participate, regardless of their weight or ability. It is important that interventions which aim to increase physical activity are not stigmatising towards obese children, but that all children are included in exercise programmes which promote healthy lifestyles.

Regarding the obesogenic factors which contribute to excess energy intake, it is vital that parents should receive support at all levels of society to promote healthy eating in childhood. This includes the cooperation of businesses and the food industry. Efforts should include measures such as restricting the sale of high fat, salt and sugar foods, especially sugar-sweetened beverages, to children at school tuckshops and other places. Healthy foods should be offered to children as the default option at schools and restaurants, instead of the

unhealthy items commonly presented which currently includes chips, fast foods, milkshakes and sugary drinks. Measures which disincentivise the consumption of sugar-sweetened beverages by children are a step in the right direction and should be extended to other unhealthy items. Again these efforts should target all children as part of a healthy lifestyle, not just those who are overweight or obese. Care should be taken in all efforts that stigma is avoided.

The protection of children from the unhealthy influences of food advertising and marketing in South Africa should be a top priority. This is an area in which interventions should be aggressively pursued at all levels. Some large chain stores have already begun removing sweets and unhealthy items from their check-out aisles, but sadly this is not the norm and much more could be done in this regard. Two areas on which there should be particular focus in South Africa are the media and corporate sponsorship of children's sport as contributors to the obesogenic environment.

One of the goals of the Stewardship model states simply that public health programmes should "ensure conditions that make it easy to live a healthy life." It is only by taking a social justice approach which can address the social determinants of childhood obesity that our childhood obesity prevention efforts in South Africa will succeed.

BIBLIOGRAPHY

Adams, G.R., Hicken, M. & Salehi, M. 1988. Socialisation of the physical attractiveness stereotype: Parental expectations and verbal behaviours. *International Journal of Psychology* 23:137-149.

Advertising Standards Authority of South Africa. 2017. *Advertising code of practice*. [Online] Available: www.asasa.org.za/codes/advertising-code-of-practice/appendix-j-food-and-beverage-code. [2017, August 6]

American Medical Association House of Delegates. 2013. *Recognition of obesity as a disease. Resolution 420 (A-13).* [Online] Available: http://www.npr.org/documents/2013/jun/ama-resolution-obesity.pdf. [2015, November 6]

Anomaly, J. 2011. Public health and public goods. *Public Health Ethics* 4(3):251-259.

Aristotle, Peters F.H. (tr.) 1893. *The Nicomachean ethics of Aristotle* 5th ed. London: Kegan Paul, Trench, Truebner & Co.

Armstrong, M.E.G., Lambert, M.I. & Lambert, E.V. 2011. Secular trends in the prevalence of stunting, overweight and obesity among South African children (1994-2004). *European Journal of Clinical Nutrition* 65:835-840.

Armstrong, M.E.G., Lambert, M.I., Sharwood, K.A. & Lambert, E.V. 2006. Obesity and overweight in South African primary school children. The Health of the Nation Study. *South African Medical Journal* 96(5):439-444.

Barlow, S. 2007. Expert committee recommendations regarding the prevention, assessment and treatment of child and adolescent overweight and obesity. *Paediatrics* 120(4): s164-s192.

Bayer, R. 2008. Stigma and the ethics of public health: Not can we, but should we. *Social Science and Medicine* 67(3):463-472.

Bayer, R. & Fairchild, A. 2015. Stigma: Time for a hard conversation. *International Journal of Drug Policy* 26:613-614.

Beauchamp, D.E. 1976. Public health as social justice. *Inquiry* 13(1):3-14.

Bentham, J. 1955. The principles of morals and legislation. In: Melden, A.I. (ed.) *Ethical Theories* 2nd ed. Englewood Cliff: Prentice Hall.

Beverage Association of South Africa. 2016. *Response to taxation of sugar sweetened beverages policy paper.* [Online] Available: www.bevsa.co.za/wp.../2016/08/2208/2016-BEVSA-SSB-Tax-Comments-Final.pdf. [2017, August 4]

Brennan, S. & Noggle, R. 1997. The moral status of children: Children's rights, parents' rights, and family justice. *Social Theory and Practice* 23(1):1-26.

Brighouse, H. & Swift, A. 2006. Parents' rights and the value of the family. *Ethics* 117: 80-108.

Brownell, K., Kersh, R., Ludwig, D.S., Post, R.C., Puhl, R.M., Schwartz, M.B. & Willett, W.C. 2010. Personal responsibility and obesity: A constructive approach to a controversial Issue. *Health Affairs* 29(3): 378-386.

Buchanan, D.R. 2008. Autonomy, paternalism and justice: Ethical priorities in public health. *American Journal of Public Health* 98(1):15-21.

Bullmore, J. 2016. *What is advertising?* [Online] Available: www.adassoc.org.uk/publications/what-is-advertising/ [2017, August 7]

Burris, S. 2008. Stigma, ethics and policy: a commentary on Bayer's 'Stigma and the ethics of public health: Not can we, but should we.' *Social science and Medicine* 67:473-475.

BusinessDictionary.com. [Online] Available: http://www.businessdictionary.com/definition/marketing.html. [2017, August 7]

Caballero, B. 2005. A nutrition paradox: underweight and obesity in developing countries. *New England Journal of Medicine* 352:1514-1516.

Caballero, B. 2007. The global epidemic of obesity: an overview. *Epidemiology review* 29:1-5.

Cairns, G., Angus, K. & Hastings, G. 2009. *The extent, nature and effects of food promotion to children: a review of the evidence to December 2008.* Geneva: World Health Organisation.

Callahan, D. 2013. Obesity: chasing an elusive epidemic. *Hastings Centre Report* 43 (1):34-40.

Callahan, D. & Jennings, B. 2002. Ethics and Public Health: Forging a strong relationship. *American Journal of Public Health* 92(2):170-178.

Calvert, S.L. 2008. Children as consumers: advertising and marketing. *The future of children* 18(1):205-234.

Cameron, N. 2005. Childhood obesity in developing countries. *Journal of human ecology* 13:53-59.

Cassim, S.B. 2010. Food and beverage marketing to children in South Africa: mapping the terrain. *South African Journal of Clinical Nutrition* 23(4):181-185.

Childress, J.F., Faden, R., Gaare, R.F., Gostin, L.O., Kahn, J., Bonnie, R.J., Kass, N.E., Mastroianni, A.C., Moren, J.D. & Nieburg, O. 2002. Public Health ethics: mapping the terrain. *Journal of Law, Medicine and Ethics* 30:170-178.

Clark, R.A., Niccolai, L., Kissinger, P.J., Peterson, Y. & Bouvier, V. 1999. Ethnic differences in body image attitudes and perceptions among women infected with human immunodeficiency virus. *Journal of the American Dietetic Association* 99:735-737.

Coggon, J. 2011. What help is a steward? Stewardship, political theory and public health law and ethics. *Northern Ireland Legal Quarterly* 62(4):599-616.

Cole, T.J., Bellizzi, M.C., Flegal, K.M. & Dietz, W.H. 2000. Establishing a standard definition for child overweight and obesity worldwide: international survey. *British Medical Journal* 320:1240-1243.

Collins English Dictionary [Online] Available: http://www.collinsdictionary.com. [2016, June 10]

Community Agency for Social Enquiry. 2010. *Baseline study on registered child and youth care centres.* Pretoria: UNICEF and National Department of Social Development.

COSATU. 2017. *COSATU to make submission in Parliament on Treasury's planned sugar sweetened beverages tax.* [Online] Available: www.cosatu.org.za/docs/pr/2017/pr0529.html. [2017, August 4]

Crandall, C.S. 1991. Do heavyweight students have more difficulty paying for college? *Journal of Personality and Social Psychology* 17:606-611.

Cullinan, K. 2017. *Budget: Sugar tax watered down to only 11%.* [Online] Available: http://www.health24.com/diet-and-nutrition/beverages/budget-sugar-tax-watered-down-to-only-11-20170222. [2017, August 4]

Daniels, N. 2001. Justice, health, and health care. *American Journal of Bioethics* 1(2):2-16.

Daniels, N. 2008. *Just Health: Meeting health needs fairly.* New York: Cambridge University Press.

Danielsdottir, S., Burgard, D. & Oliver-Pyatt, W. 2015*. Guidelines for childhood obesity programs. Academy for eating disorders position statement*. [Online] Available: http://aedweb.org/web/index.php/23-get-involved/position-statements. [2015, December 1]

Davison, K.K. & Birch, L.L. 2004. Predictors of fat stereotypes among 9-year old girls and their parents. *Obesity Research* 12:86-94.

Dawson, A. 2009. Theory and practice in public health ethics: a complex relationship. In: Peckham, S. & Horn, A. (eds). *Public Health Ethics and Practice*. Bristol: Policy Press. 192-195.

Dawson, A. 2011. Resetting the parameters. Public health as the foundation for public health ethics. In: Dawson, A. (ed.) Public Health Ethics. *Key concepts and issues in policy and practice.* Cambridge: Cambridge University Press. 1-19.

Dawson, A. & Verweij, M. 2008. Public Health ethics: A manifesto. *Public Health Ethics* 1(1):1-2.

Delport, J.E. 2015. Branding and cartoon character usage in food marketing to children: the South African picture. Unpublished Master's thesis. [Online] Available: https://dspace.nwu.ac.za. [2017, August 5]

De Onis, M., Bloessner, M. & Borghi, E. 2010. Global prevalence and trends of overweight and obesity among pre-school children. *American Journal of Clinical Nutrition* 92(5): 1257-1264.

De Villiers, A., Steyn, N.P., Draper, C.E., et al. 2012. "HealthKick": formative assessment of the health environment in low-resource primary schools in the Western Cape Province of South Africa. *BMC Public Health* 12:794.

Deckelbaum, R.J. & Williams, C.L. 2001. Childhood obesity: The health issue. *Obesity Research* 9(4):239S-243S.

Doak, C.M., Visscher, T.L.S., Renders, C.M. & Seidel, J. C. 2006. The prevention of overweight and obesity in children and adolescents: A review of interventions and programmes. *Obesity Review* 7:111-136.

Dorfman, L., Cheyne, A., Friedman, L.C., et al. 2012. Soda and Tobacco Industry Corporate Social Responsibility Campaigns: How do they compare*? PLoS Medicine* 9(6):e1001241 doi:10.1371/journalpmed.1001241

Doyle, J. 2014. *More than 70 morbidly obese children taken into care due to concerns over their health.* Daily Mail UK. [Online] Available: www.dailymail.co.uk/news/article-2569922/more-70-morbidly-obese-children-overfed-parents-taken-care.html. [2017, June 18]

DSD, DWCPD and UNICEF. 2012. *Violence against children in South Africa*. Pretoria: Department of Social Development/Department of Women, Children and People with Disabilities/UNICEF.

Du Toit, D., Van der Merwe, N. & Roussouw, J.P. 2007. Return of physical education to the curriculum: problems and challenges facing schools in South African communities. *African Journal for Physical Health Education, Recreation and Dance* 13(3):241-253.

Dworkin, G. 1999. Paternalism. In: Beauchamp, D.E. & Steinbock, B. *New Ethics for the Public's Health.* New York: Oxford University Press. 115-128.

Egede, L.E. 2006. Race, ethnicity, culture and disparities in Health Care. *Journal of General Internal Medicine* 21(6):667-669.

Eisenberg, M.E., Neumark-Sztainer, D. & Story, M. 2003. Associations of weight-based teasing and emotional well-being amongst adolescents. *Archives of Pediatric & Adolescent Medicine* 157:733-738.

Evans, W.D., Christoffel, K.K., Necheles, J.W. & Becker, A.B. 2010. Social marketing as a childhood obesity prevention strategy. *Obesity* 18(1):s23-s26.

Faden, R., Shebaya, S. 2015. Public Health ethics. *The Stanford Encyclopedia of Philosophy* [Online] Available: http://plato.stanford.edu/archives/spr2015/entries/publichealth-ethics/7. [2015, August 5]

Fairchild, A.L. 2013. Half empty or half full? New York's soda rule in historical perspective. *New England Journal of Medicine* 386 (19):1765-1767.

Farber, T. 2006. *SA becoming a nation of 'unhealthy fatties.'* [Online] Available: http://www.iol.co.za/news/south-africa/sa-becoming-a -nation-of-unhealthy-fatties-289235. [2016, June18]

Feeley, A.B. & Norris, S.A. 2014. Added sugar and dietary sodium intake from purchased fast food, confectionery, sweetened beverages and snacks among Sowetan adolescents. *South African Journal of Child Health* 8(3):88-91

Fry, C.L. 2012. Ethical issues in obesity interventions for populations. *NSW Public Health Bulletin* 23(5-6):116-119.

Gillman, S. 2008. *Fat: A Cultural History of Obesity*. Cambridge, UK: Polity Press. 9.

Goffman, E. 1963. *Stigma: Notes on the management of Spoiled Identity.* New Jersey: Prentice-Hall.

Gortmaker, S.L., Must, A., Perrin, J.M., Sobol, A.M. & Dietz, W.H. 1993. Social and economic consequences of overweight in adolescence and young adulthood. *New England Journal of Medicine* 399:1008-1012.

Gostin, L.O. & Powers M. 2006. What does social justice require for the public's health? Public health ethics and policy imperatives. *Health Affairs* 25(4):1053-1060.

Govea, J. 2011. Ethical concerns regarding interventions to prevent and control childhood obesity. *Preventing Chronic Disease* 8(5):A91.

Han, J.C., Lawlor, D.A. & Kimon, S.Y. 2010. Childhood obesity – 2010: Progress and challenges. *Lancet* 375(9727):1737-1748.

Harris, J.L. & Graff, S.K. 2011. Protecting children from harmful food marketing: options for local government to make a difference*. Preventing Chronic Disease* 8(5):A92.

Harris, J.L., Pomeranz, J.L., Lobstein, T. & Brownell, K.D. 2009. A crisis in the marketplace: how food marketing contributes to childhood obesity and what can be done. *Annual Review of Public Health* 30:211-225.

Healthy Active Kids South Africa 2014. [Online] Available: http://activehealthykids.org/project/healthy-active-kids-south-africa-report-card-for-2014/. [2015, September 1]

Healthy Active Kids South Africa 2016. [Online] Available: https://www.discovery.co.za/vitality/news-june17-haksa-2016-report-card [2017, August 3]

Hebden, L., King, L., Kelly, B. et al. 2010. Industry self-regulation of food marketing to children: Reading the fine print. *Health Promotion Journal of Australia* 21(3):229-235.

Hill, J., Draper, C.E., de Villiers, A. et al. 2015. Promoting healthy lifestyle behaviour through the Life Orientation curriculum: Teacher's perceptions of the HealthKick intervention. *South African Journal of Education* 35(1):1-9.

Hoffman, B. 2013. Bariatric surgery for obese children and adolescents: a review of the moral challenges. *BMC Medical Ethics* 14:18 [online]. Available: http://www.biomedcentral.com/1472-6939/14/18 [2016, June 10]

Holm, S. 2007. Obesity interventions and ethics. *Obesity reviews* 8(1):207-210.

Igumbor, E.U., Sanders, D., Puoane, T.R. et al. 2012. "Big Food", the consumer food environment, health, and the policy response in South Africa. *PLoS Medicine* 9(7):e1001253. [Online] Available: https://doi.org/10.1371/journal.pmed.1001283. [2017, August 6]

Institute of Medicine. 1988. *The Future of Public Health.* Washington DC: Academy Press.

International Chamber of Commerce. 2012. *Framework for Responsible Food and Beverage Marketing Communications 2012*. [Online] Available: www.codescentre.com/media/12665/675-food_bev_framework.pdf. [2017, August 6]

Investorwords website. 2017. [Online] Available: www.investorwords.com/11046/self_regulation.html [2017, August 6]

Iversen, P.O., Du Plessis, L., Marais, D. et al. 2011. Nutritional health of young children in South Africa over the first sixteen years of democracy. *South African Journal of Child Health* 15(3): 72-77.

Johnson, R. & Cureton, A. 2016. Kant's moral philosophy. In: Zalta, E.N. (ed.) *The Stanford Encyclopaedia of Philosophy.* [Online] Available: http://plato.stanford.edu/archives/fall2016/entries/kant-moral/ [2016, July 8]

Jonsen, A.R. & Butler, L.H. 1975. Public ethics and policy making. *The Hastings Center Report* 5(4):19-31.

Kass N.E. 2001. An ethics framework for public health. American Journal of public health 91(11):1776-1782.

Kersh, R., Stroup, D. & Taylor, W.C. 2011. Childhood obesity: a framework for policy approaches and ethical considerations. *Preventing Chronic Disease: Public health research, practice and policy* 8(5) A93:1-5.

KFC mini-cricket website. 2017. [Online] Available: https://kfc.co.za/minicricket/ [2017, August 5]

Krebs, J. 2008. The importance of public health ethics. *Bulletin of the World Health Organisation* 86(8):579.

Kretzmann, S. 2017. *Sugar tax: A bitter debate*. [Online] Available: http://www.fin24.com/economy-sugar-tax-a-bitter-debate-20170203. [2017, August 5]

Kruger, H.S., Puoane, T., Senekal, M. & Van der Merwe, M.T. 2005. Obesity in South Africa: challenges for government and health professionals. *Public Health Nutrition* 8(5):491-500.

Kruger, K., Kruger, H.S. & MacIntyre, U.E. 2006. The determinants of overweight and obesity among 10-15 year old schoolchildren in the North-West Province of South Africa - the THUSA BANA study. *Public Health Nutrition* 9:351-358.

Kumanyika, S. 2011. A Question of competing rights, priorities and principles: a post-script on the Roberts Wood Johnson Foundation symposium on the ethics of childhood obesity policy. *Preventing Chronic Disease: Public health research, practice and policy* 8(5) A97:1-4.

Kumanyika, S., Jeffery, R.W., Morabia, A., Rittenbaugh, C. & Antipatis, V.J. 2002. Obesity prevention: the case for action. *International journal of Obesity* 26:425-436.

Kunkel, D.L., Castonquay, J.S. & Filer, C.R. 2015. Evaluating industry self-regulation of food marketing to children. *American Journal of Preventive Medicine* 49(2):182-187.

Latner, J.D. & Stunkard, A.J. 2003. Getting worse: the stigmatization of obese children. *Obesity Research* 11:452-456.

Lee, L.M. 2012. Public health ethics theory: review and path to convergence. *Journal of Law and Medical Ethics* 40(1):85-98

Link, B.G. & Phelan, J.C. 2001. Conceptualising stigma. *Annual review of Sociology* 27:363-385.

Lobstein, T., Baur, L.A. & Jackson-Leach, R. 2010. The childhood obesity epidemic. In: Waters, E., Swinburn, B.A., Seidell, J.C. & Uauy, R. (eds.) *Preventing Childhood Obesity: Evidence, policy and practice.* Oxford: Wiley- Blackwell. 3-14.

Lotz, M. 2004. Childhood obesity and the question of parental liberty. *Journal of Social Philosophy* 35(2): 288-303.

Makholwa, A. 2014. *Health and lifestyle: The cost of obesity.* [Online] Available: http://www.financialmail.co.za/fm/CoverStory/2014/12/18/health-and-lifestyle-the-cost-of-obesity. [2016, June 18]

Mamabolo R.L., Alberts M., Steyn N.P. et al. 2005. Prevalence and determinants of stunting and overweight in 3-year-old Black South African children residing in the central region of Limpopo Province, South Africa. *Public Health Nutrition* 8(5):501-508.

Mann, J.M. 1997. Medicine and public health, ethics and human rights. *The Hastings Center Report* 27(3):6-13.

Mastroianni, A.C. & Kahn, J. 2014. Public health. In: Beauchamp, T.L., Walters, L., Kahn, J.P. & Mastroianni, A. (eds.) *Contemporary issues in bioethics.* USA: Wadsworth Cengage. 669-674.

Matthews, K.A., Salomon, K., Kenyon, K. & Zhou, F. 2005. Unfair treatment, discrimination, and ambulatory blood pressure in black and white adolescents. *Health Psychology* 24:258-265.

Mayosi, B.M., Flisher, A.J., Lalloo, U.E. et al. 2009. The burden of non-communicable diseases in South Africa. *Lancet* 374:934-947.

McDonald's U14 School League website. 2017. [Online] Available: www.McDonald's.co.za/u14. [2017, August 5]

McGinnis, M., Gootman, J.A., Kraak, V.I. (eds.) 2006. *Food marketing to children and youth: Threat or Opportunity?* Washington:National Acadamies Press. 1.

Mchiza, Z. & Maunder, E. 2013. Fighting childhood obesity. *South African Journal of Clinical Nutrition* 26(3):100-102.

Mchiza, Z., Temple, N.J., Steyn N.P. et al. 2013. Content analysis of television food advertisements aimed at adults and children in South Africa. *Public Health Nutrition* 16(2): 2213-2220.

McLachlan, L. 2015. Obesity amongst children: Child abuse or parental neglect? Unpublished Master's thesis. Pretoria: University of Pretoria.

Merry, M. 2012. Paternalism, obesity and tolerable levels of risk. *Democracy and Education* 20(1) Article 3.

Mill, J.S. 2006. In: Ryan, A. (ed.) *On Liberty and The Subjection of Women.* Great Britain: Penguin Books. 15-16.

Minkler, M. 1999. Personal responsibility for health? A review of the arguments and the evidence at century's end. *Health Education and Behaviour* 26(1): 121-140.

Mokoboane, M.N., Mashao, M.M., Van Staaden, M., Potgieter, M.J. & Potgieter, A. 2014. Low levels of physical activity in female adolescents cause overweight and obesity: Are our schools failing our children? *South African Medical Journal* 104(10):665-666.

Mol, A. 2010. Moderation or satisfaction? Food ethics and food facts. In: Vandamme, S., Van der Vathorst, S. & de Beaufort, I. *Whose weight is it anyway? Essays on Ethics and Eating.* Leuven: Acco academic publishers. 121-132.

Must, A. & Strauss, R.S. 1999. Risks and consequences of childhood and adolescent obesity. *International Journal of Obesity* 23(2):s2-11.

Mvo Z., Dick J. & Steyn K. 1999. Perceptions of overweight African women about acceptable body size of women and children*. Curationis* 22(2):27-31.

National Department of Health. 2015. *Strategy for the prevention and control of obesity in SA 2015-2020.* Pretoria: NDoH.

National Treasury. 2016. *Taxation of Sugar Sweetened Beverages policy paper*. [Online] Available: www.treasury.gov.za [2017, August 5]

NHS. 2016. *Causes of obesity*. [Online] Available: www.nhs.uk/conditions/obesity/pages/causes.aspx. [2016, June 16]

Nortje, N., Faber, M. & de Villiers, A. 2017. School tuckshops in South Africa – an ethical appraisal. *South African Journal of Clinical Nutrition* 30(3):74-79.

Nuffield Council on Bioethics. 2007. *Public health: Ethical issues*. London: Nuffield council on Bioethics.

Nussbaum, M. 2004. *Hiding from Humanity: Disgust, shame and the Law.* Princeton, NJ: Princeton University Press

O'Dea, J. 2005. Prevention of child obesity: "First, do no harm". *Health Education Research* 20(2):259-265.

Our super-sized kids*. Time magazine*. 2008. 23 June. [Online] Available: http://content.time.com/time/coversearch. [2016, June 16]

Oxford dictionary 2017 [Online] Available: https://en.oxforddictionaries.com/definition/stigma. [2017, September 1]

Petrini, C. 2010. Theoretical models and operational frameworks in public health ethics. *International Journal of Environmental Research and Public Health* 7:189-2012.

Pienaar, A.E. & Strydom, G.L. 2012. Childhood obesity: the need for practice-based solutions - A South African perspective. In: Yuca, S.A. (ed.) *Childhood obesity*. New York: InTech. 193-220.

Pomeranz, J.L. 2008. A historical analysis of public health, the law and stigmatized social groups: the need for both obesity and weight bias legislation. *Obesity* 16:S93-S102.

Popkin, B. 2001. The nutrition transition and obesity in the developing world. *Journal of Nutrition* 131:8715-8735.

Popkin, B.M., Richards, M.K. & Monteiro, C. 1996. Stunting is associated with overweight in children of four nations that are undergoing nutrition transition. *Journal of Nutrition* 126:3009-3016.

Powers, M. & Faden, R. 2006*. Social Justice: the moral foundations of public health and health policy.* New York: Oxford University Press.

Powers, M., Faden, R.R. & Saghai, Y. 2012. Liberty, Mill, and the framework of public health ethics. *Public Health Ethics* 5(1):6-15.

Prentice, A.M. 2006. The emerging epidemic of obesity in developing countries. *International Journal of Epidemiology* 35:93-99.

Price, J.H., Desmond, S.M. & Stelzer, C.M. 1987. Elementary school principals' perceptions of childhood obesity. *Journal of School Health* 57:367-370.

Puhl, R.M. & Heuer, C.A. 2009. The Stigma of Obesity: A Review and Update. *Obesity* 17:941-964.

Puhl, R.M. & Heuer, C.A. 2010. Obesity stigma: Important considerations for Public Health. *American Journal of Public Health* 100:1019-1028.

Puhl, R.M. & Latner, J.D. 2007. Stigma, obesity and the health of the nation's children. *Psychological bulletin* 133(4):557-580.

Rawls, J. 1971. *A theory of justice*. Cambridge MA: Harvard University Press.

Reilly, J.J. & Kelly, J. 2011. Longterm impact of overweight and obesity in childhood and adolescence on morbidities and premature mortality in adulthood: systematic review. *International Journal of Obesity* 35:891-898.

Reilly, J.J., Methven, E., McDowell, Z.C. et al. 2003. Health consequences of obesity. *Archives of Disease in Childhood* 88:748-752.

Richards, Z., Thomas, S.L., Randle, M. & Pettigrew, S. 2015. Corporate Social Responsibility programs of Big Food in Australia: a content analysis of industry documents. *Australian and New Zealand Journal of Public Health* 39(6):550-556.

Richardson, S.A., Goodman, N., Hastorf, A.H. & Dornbusch, S.M. 1961. Cultural uniformity in reaction to physical disabilities. *American Sociological Review* 26:241-247.

Roberto, C., Baik, J., Harris, J.L. & Brownell, K.D. 2010. Influence of licensed characters on children's taste and snack preferences. *Pediatrics* 126(1):88-93.

Roberts, R.J. & Reich, M.R. 2002. Ethical analysis in public health. *Lancet* 359:1055-1059.

Robison, J. 2005. Health at Every Size: Toward a new paradigm of weight and health. *Medscape General Medicine* 73(3):13.

Rogovik, A. L. & Goldman, R.D. 2011. Pharmacological treatment of paediatric obesity. *Canadian Family Physician* 57:195-197.

Rossouw, H., Grant, C.G. & Viljoen, M. 2012. Overweight and obesity in children and adolescents: The South African problem. *South African Journal of Science* 108:5-6

Rozendaal, E., Buijzen, M. & Valkenburg, P. 2011. Children's understanding of advertisers' persuasive tactics. *International journal of advertising* 30(2):329-350.

Schwartz, M.B. & Puhl, R. 2003. Childhood obesity: a societal problem to solve. *Obesity reviews* 4:57-71.

Schwimmer, J.B., Burwinkle, T.M. & Varni, J.W. 2003. Health-related quality of life of severely obese children and adolescents. *Journal of the American Medical Association* 289:1813-1819.

Serdula, M.K., Ivery, D., Coates, R.J. et al. 1993. Do obese children become obese adults? A review of the literature. *Preventive Medicine* 22(2):167-177.

Sharma, L.L., Teret, S.P. & Brownell, K. 2010. The food industry and self-regulation: Standards to promote success and avoid public health failures. *American Journal of Public Health* 100:240-246.

Shisana, O., Labradrios, D., Rehle, T. et al. 2013. *South African National Health and Nutrition Examination Survey (SANHANES-1).* Cape Town: HSRC Press.

Slomka, J., Quill, B., Des Vignes-Kendrick, M. & Lloyd, L.E. 2008. Professionalism and ethics in the Public Health Curriculum. *Public Health Reports* 2(123):27-35.

South Africa. 2005. Children's Act 38 of 2005. Pretoria: Government printer.

South Africa. 2007. *Foodstuffs, Cosmetics and Disinfectants Act 54 of 1972*. Pretoria: Government printer.

South Africa Food Data System. 2015. *Labelling*. [Online] Available: safoods.mrc.ac.za/labelling.htm. [2017, August 6]

Stroebel, L.C.E., Bloemhof, H.J. & Hay, J. 2016. Physical education in South Africa: have we come full circle? *South African Journal for Research in Sport, Physical Education and Recreation* 38(3):215-228.

Story, M. & French, S. 2004. Food advertising and marketing directed at children and adolescents in the US. *International Journal of Physical Activity* 1:3. [Online] Available: http://www.ijbnpa.org/content/1/1/3. [2017, August 5]

Swinburn, B., Egger, G. & Raza, F. 1999. Dissecting obesogenic environments: The development and application of a framework for identifying and prioritizing environmental interventions for obesity. *Preventive Medicine* 29(6): 563-570.

Tannahill A. 2008. Beyond evidence to Ethics: A decision-making framework for health promotion, public health and health improvement. *Health Promotion International* 23(4):380-390.

Ten Have, M. De Beaufort, I.D., Mackenbach, J.P. & Van Der Heide, A. 2010. An overview of ethical frameworks in public health: can they be supportive in the evaluation of programs to prevent overweight? *BMC Public Health* 10:638. [Online] Available: http://www.biomedcentral.com/1471-2458/10/638. [2015, August 5]

Ten Have, M. 2011. No country for fat children? Ethical questions concerning community-based programs to prevent obesity. In: Ten Have, M. *Prevention of Obesity. Weighing ethical arguments.* Rotterdam: Optima Grafische Communicatie.

Termini, R.B., Roberto, T.A. & Hostetter, S.G. 2011. Food advertising and childhood obesity – a call to action for proactive solutions. *The Minnesota Journal of Law Science and Technology* 12(20):619-651.

The United Nations. 1989. *Convention on the Rights of the Child*. Treaty series 1577:3.

Turcotte-Tremblay, A-M. & Ridde, V. 2016. A friendly critical analysis of Kass's ethics framework for public health. *Canadian Journal of Public Health* 107(2):209-211.

Uauy, R., Caleyachetty, R. & Swinburn, B. 2010. Childhood obesity prevention overview. In: Waters, E., Swinburn, B.A., Seidell, J.C. & Uauy, R. (eds.) *Preventing childhood obesity: Evidence, policy and practice*. Oxford: Wiley- Blackwell. 22-30.

Upshur, R.E.G. 2012. Setting the stage: population and public health ethics. In: Canadian Institutes of Health Research – Institute of Population and Public Health. *Population and Public Health Ethics: Cases from research, policy and practice.* Toronto: University of Toronto Joint Centre for Bioethics.

Uys, M., Basset, S., Draper, C. et al. 2016. Results from South Africa's 2016 Report Card on physical activity for children and youth. *Journal of Physical Activity and Health* 13(2): S265-S273.

Van Der Merwe, M.T. 2012. Obesity in childhood and adolescence. *South African Medical Journal* 102(5):289.

Varness, T., Allen, D.B., Carrel, A.L. & Fost, N. 2009. Childhood obesity and medical neglect. *Pediatrics* 123(1): 399-406.

Veerman, J.L., Van Beeck, E.F., Barendregt, J.J. et al. 2009. By how much would limiting TV food advertising reduce childhood obesity? *European Journal of Public Health* 19(4):365-369.

Voight, K., Nichols, S.G. & Williams, G. 2014*. Childhood obesity: Ethical and policy issues.* New York: Oxford University Press.

Walton, M. & Mengwasser, E. 2012. An ethical evaluation of evidence: A stewardship approach to public health policy*. Public Health Ethics* 5(1): 16-21.

Washington, R.L. 2011. Childhood Obesity: Issues of weight bias. *Preventing chronic disease* 8(5):A94 [Online] Available: http://www.cdc.gov/pcd/issues/2011/sep/10. [2015, August 5]

Weiner, B., Perry, R.P. & Magnusson, J. 1988. An attributional analysis of reactions to stigma. *Journal of Personality and Social Psychology* 55(5):738-748.

Who-led commission on Ending Childhood obesity meets to develop global responses to obesity epidemic. [Online] Available: http://www.who.int?end-childhood-obesity/news/echo-second-meeting/en/. [2015, October 25]

Wikler, D.I. 1978. Persuasion and coercion for Health: Ethical issues in government efforts to change life-styles. In: Beauchamp, T.L., Walters, L., Kahn, J.P. & Mastroianni, A. (eds.) *Contemporary issues in bioethics*. USA: Wadsworth Cengage. 699-711.

Wikler, D. 1987. Who should be blamed for being sick? *Health Education Quarterly* 14(1): 11-25.

Wikler, D. 2002. Personal and social responsibility for health*. Ethics and International Affairs 16: 47-55.*

Williamson, L., Thom, B., Stimson, G.V. & Uhl, A. 2014. Stigma as a public health tool: Implications for health promotion and citizen involvement. *International Journal of Drug Policy* 25:333-335.

World Health Organisation. 1978. *Declaration of Alma-Ata.* International conference on primary health care. Alma-Ata, USSR.

World Health Organisation. 1986. *The Ottawa charter on Health Promotion*. Geneva, Switzerland: WHO.

World Health Organisation. 2000. *Obesity: preventing and managing the global epidemic*. *Report of a WHO consultation. WHO TRS 894*. Geneva, Switzerland: World Health Organisation.

World Health Organisation. 2004. *Global Strategy on Diet, Physical Activity and Health.* [Online] Available: www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf. [2017, August 6]

World Health Organisation. 2008. *2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Non-Communicable Diseases.* [Online] Available: www.who.int/nmh/publications/9789241597418/en/. [2017, August 6]