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RESEARCH PAPER

Ideology, obesity and the social determinants of health: a critical analysis of the obesity and health relationship

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ABSTRACT

Based on a critical review of the obesity and health literature we provide five models of how the hypothesized obesity and health relationship is conceptualized. We then apply these models to make sense of how recent Canadian public health reports and clinical practice guidelines conceptualize the issue of obesity, its causes and health effects, and appropriate responses. We show how conformity to dominant models of the obesity and health relationship by health sciences researchers, public health workers, and the media lead to activities that rather than promoting health, actually threaten it. These dominant models – and the activities derived from them – do so by diverting attention from the far more important issues of the quality and distribution of the social determinants of health. These approaches also stigmatize heavy individuals, doing little to promote their health. For these reasons, we call for an end to seeing obesity as a significant health issue.

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Obesity; social determinants of health; health policy

Introduction

In this paper we provide five models of the hypothesized obesity and health relationship to illustrate how health sciences researchers, public health workers, and the media's focus on obesity, rather than promoting health, actually threaten it. We present three major arguments. The first is that the emerging theoretical and empirical literature questions obesity's adverse effects on health. The second is that the focus on obesity draws attention away from the far more important effects upon health of the quality and distribution of the social determinants of health (SDH). The third is that the focus on obesity stigmatizes heavy people, thereby threatening their health.

We support these arguments by overviewing developments in the traditional health sciences as well as the critical obesity studies/fat studies literature (Boero, 2007; Campos, Saguy, Ernsberger, Oliver, & Gaesser, 2006; Gard, 2011; Gard & Wright, 2005; Guthman, 2013; Lupton, 2013; Monaghan, Colls, & Evans, 2013). Based on this review, we identify five causal models of the hypothesized obesity and health relationship and their intended and unintended effects upon research activities, professional practice, and public understandings. We then examine how two widely cited Canadian government reports and two clinical practice guidelines on obesity are consistent with models that present obesity as a major cause of health problems brought on by individually chosen risk behaviours. Means of countering these approaches are presented.

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Background

Contemporary concerns around obesity can be situated within the framework of the *New Public Health*. In the *New Public Health* the concept of 'health', notions of 'being healthy', and 'having health' denote strong cultural imperatives which in Canada and elsewhere have been influenced by neoliberal ideology celebrating the individual and weakening the role of the State in promoting health through public policy action (Petersen & Lupton, 1996). Having good health became synonymous with individual responsibility, lifestyle improvements, and health risk management. Despite the conceptual developments of the last two decades organized around the SDH, biomedical and individualized approaches towards promoting health remain dominant in Canada and elsewhere (Raphael, 2008). Public health's reliance on the quantitative methods and statistical probability indicators intrinsic to epidemiology (Krieger, 2011) melds with these dominant biomedical and lifestyle approaches to provide a receptive environment in the public health sector for the obesity as epidemic discourse (Campos et al., 2006).

Not surprisingly then, the mid-1990s saw obesity become a major global concern (Boero, 2007; Cheek, 2008; Gard, 2011; Lupton, 2012; Oliver, 2006). The classification of obesity as a chronic disease by the World Health Organization in 2000 (World Health Organization, 2000), firmly entrenched the belief among health scientists, public health workers, and the media that obesity is a major cause of numerous adverse health outcomes (Campos, 2004; Campos et al., 2006; Corscadden et al., 2011; Gard, 2011; Gard & Wright, 2005; Patterson & Johnston, 2012; Public Health Ontario, 2013). Research funds to study obesity and its prevention became readily available as did support for obesity prevention and reduction programmes.

Obesity has since been identified as a risk factor/cause for arthritis, asthma, gallbladder disease, osteoarthritis, chronic back pain, hypertension and cardiovascular disease, adult-onset diabetes, blood clotting, hyperinsulinaemia, and various types of cancer, among other diseases. (Corscadden et al., 2011; Ebbeling, Pawlak, & Ludwig, 2002; Public Health Ontario, 2013). Obesity is also said to be a risk factor/cause of adverse psychosocial outcomes of depression, low self-esteem, disordered eating patterns, and poor quality of life (Bean, Stewart, & Olbrisch, 2008; Lupton, 2013; Thatcher, 2004).

The literature on obesity as risk and/or cause of disease is now vast (Gard & Wright, 2005; Lupton, 2013). The epidemiological literature makes a distinction between a *risk factor* – which may or may not be a cause of an affliction – and a *cause* which has been clearly demonstrated to be responsible for such afflictions (Parascandola & Weed, 2001). This distinction is usually lost in the public health literature such that obesity itself is seen as a cause of disease.

Gard identifies two distinct 'camps' in the obesity and health arena: the 'alarmists' and 'sceptics' (Gard, 2011). Lupton (2013) labels the viewpoint of alarmist researchers and practitioners as the *anti-obesity* perspective. This group includes the health sciences, health care and public health communities who see a 'major health risk for those who are designated as being overweight or obese' (Lupton, 2012, p. 15). The mainstream media mimics their use of the terms *obesity epidemic*, *obesity crisis*, and *war on obesity* to reinforce public perceptions of the health threat posed by obesity (Boero, 2007; Gard, 2011; Lupton, 2012).[1] In response to the *crisis*, governments and health agencies develop micro-, meso-, and macro-level obesity reduction strategies whose effectiveness is, to say the least, contested (Campos, 2004; Esmail & Basham, 2014; Gard, 2011; Lupton, 2013; Monaghan et al., 2013; Oliver, 2006).

In contrast, the 'sceptics' camp accepts what Lupton calls the *critical biomedical, ethical, and critical weights* perspectives that the attention to obesity is now only overblown but threatens rather than promotes health (Lupton, 2012). The *critical biomedical* perspective argues that obesity by itself may not have a causal relationship with adverse health outcomes; see for example the 'supposedly' strong relationship between adult-onset diabetes and obesity (McNaughton, 2013). It also argues that obesity can serve as a protective factor for specific populations such as the elderly (Donini et al., 2012). The *ethical* and *critical weights* perspectives argue that any negative health effects of obesity may be due to stigmatizing obese individuals rather than obesity itself.[2] Overviews of the 'sceptic' camp's contributions are available from Australian (Lupton, 2013), Canadian (Ellison, McPhail, & Mitchinson, 2016), US (Gard, 2011) and UK (Rich, Monaghan, & Aphramor, 2010) sources.

Despite these critiques, health scientists, public health workers and media for the most part continue to uncritically link adverse health outcomes to excess body mass (Gard, 2011). While mention may be made of broader factors contributing to obesity and its adverse health outcomes, obesity is still seen as a significant health problem (Paradis, 2016) and the remedies presented are usually behavioural (Kirk et al., 2014).

Methods

In this paper, we identify five causal models of the obesity and health outcomes relationship and their intended and unintended effects upon health sciences research, public health practice, and public understandings of this relationship (see Figure 1). We then examine how these models manifest in widely cited Canadian public health documents and clinical practice guidelines concerned with obesity.

We derive the models from two extensive narrative reviews of the last two decades of theoretical and empirical literature on the obesity and health relationship (Ali, 2015; Medvedyuk, 2015). We then examine – through a thematic content analysis – how these models manifest in the content of two major government reports on obesity and two major Canadian clinical practice guidelines. Consistent with tenets of naturalistic inquiry, we provide credibility for our findings through presentation of thick description. The transferability of these models and assessing their usefulness for understanding the obesity and health outcomes situations in other jurisdictions will be determined by readers of this paper (Lincoln & Guba, 2013).

Models of obesity and health outcomes in research and practice literature

Model 1: obesity is the cause of adverse health outcomes

Model 1 represents the dominant, individualized causal interpretation embraced by many health scientists, public health workers, the media and the public: *Obesity causes poor health outcomes*. It reflects the theoretical tradition of methodological individualism common to epidemiology and is a narrow, individualized, and uncritical approach whereby obesity – seen as a result of one's behavioural choices causes an individual's health problems through its physiological effects upon bodily systems (Heath, 2005).

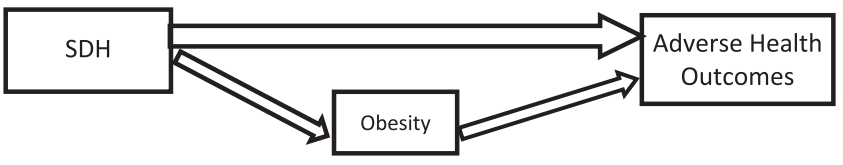
In addition to seeing obesity as a significant health issue, Model 1 provides a simple equation of *excess energy in* over *energy out* as the explanatory 'theory' behind obesity and its adverse health outcomes (Pulgarón, 2013; World Health Organization, 2015). Various physiological processes produce obesity's adverse health effects (Barton, 2012; Barton, Baretella, & Meyer, 2012; Barton & Furrer, 2003).

Health sciences researchers document how obese people come to be so through their excess caloric consumption and lack of physical activity and the physiological processes associated with obesity that produce adverse health outcomes. This model, unsurprisingly, is favoured by those in the biomedical and health sciences whose tool box contain only the 'hammer' of individual biomedical/behavioural processes such that obesity, its causes, and potential remedies are all biomedical/behavioural 'nails' (Maslow, 2004). It is also apparent among disease associations (see especially Heart and Stroke Canada (Heart & Stroke Canada, 2016), Canadian Diabetes Association (Diabetes Canada, 2016) and the Canadian Men's Health Foundation (2016) as just a few examples).

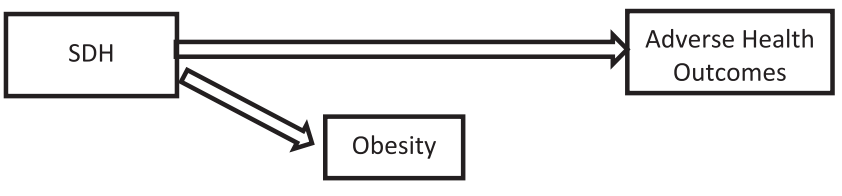
The evidence that obesity itself may not be a contributor to adverse health outcomes (Esmail & Basham, 2014; Gard, 2011) is not considered nor account taken of the societal structures or processes driving excess consumption. Even though SDH may be presented in policy documents – discussed below – their importance is downplayed by the emphasis on adopting healthy diets and regular exercise. The source of obesity is placed in the individual, an issue with implications related to self-blame (Puhl & Heuer, 2009, 2010). The intended effects of the model are to improve health by reducing obesity through more funding for traditional obesity research, implementation of behavioural modification

Model 1: Obesity is the cause of adverse health outcomes

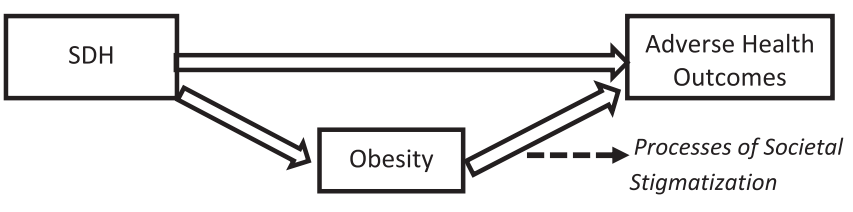
Model 2: Obesity, shaped by the SDH, is the cause of adverse health outcomes



Model 3: Obesity, shaped by the SDH, modestly contributes to adverse health outcomes



Model 4: Obesity, shaped by the SDH, does not contribute to adverse health outcomes



Model 5: Stigmatization of obesity, rather than obesity itself, contributes to adverse health outcomes

Figure 1. Models of the relationship between SDH, obesity and health.

programmes by public health workers, and the public being convinced to decrease caloric intake and increase physical activity.

There are unintended effects of stigmatization – including victim blaming – of heavy people by health sciences researchers and public health workers and the public (Lupton, 2015; Malterud & Ulriksen, 2011; Puhl & Heuer, 2009, 2010). There are also adverse health effects associated with yo-yo weight gain and loss through diets and an increase in eating disorders (Gaesser & Blair, 2011; Lyons, 2009; Oliver, 2006).

The model diverts attention from broader issues of the SDH and the public policies that shape their distribution. This diversion of attention is usually not a concern for Model 1 adherents as these broader concepts and their implications for health are not part of their health research and practice (Aggleton, 1990; Tesh, 1990).

Model 2: obesity, shaped by the SDH, is the cause of adverse health outcomes

Model 2 represents an emerging view amongst portions of the health sciences research and public health communities that obesity can be explained in large part by exposures to specific SDH (Barnes, 2012; Cheng, 2012; Corscadden et al., 2011). It is also part of Lupton's *anti-obesity* perspective as it sees obesity as a direct cause of adverse health outcomes, but is more nuanced than Model 1 (Lupton, 2012). People experiencing adverse SDH such as low income, unemployment, insecure employment or adverse working conditions, and food and housing insecurity are more likely to be obese as they overeat as a coping mechanism and are less physically active due to life circumstances. Since Indigenous peoples, working class individuals, persons of colour, and immigrant or refugees occupy social locations more likely to be disadvantaged, they are more likely to become obese and experience adverse health outcomes (Ailshire & House, 2011; Corscadden et al., 2011).[3]

The intended effects of this model are to direct attention to broader factors that lead to obesity and to reduce stigmatization and victim blaming by placing obesity in this broader perspective. Yet by emphasizing obesity's causal role in adverse health outcomes and usually providing behavioural remedies to obesity, it plays out like Model 1 but also directs attention to the behaviours of those in disadvantaged social locations rather than how these drivers of obesity and adverse health outcomes – living and working conditions – come about. In essence, the SDH serve to identify those who need to have their behaviours first researched, then changed (Raphael, 2011a).

The strong and direct effects upon health through pathways of material and social deprivation (e.g. latent, pathways, and cumulative effects) (Hertzman & Power, 2003) and psychosocial factors (e.g. stress, lack of control, sense of meaningfulness, etc.) (Brunner & Marmot, 2006) is generally ignored. The emphasis on behavioural remedies set the stage for continued stigmatization and victim blaming when weight reduction regimens fail.

Model 3: obesity, shaped by the SDH, contributes to adverse health outcomes

Model 3 represents the influence of Lupton's *critical biomedical perspective* in that it posits that obesity plays – in conjunction with the SDH – a role in adverse health outcomes, but the role of obesity is rather minor as compared to the direct effects of living and working conditions. It represents a tradition in social epidemiology that saw its first major representation in the Whitehall studies and continues in inquiries that find the effects of weight upon health outcomes such as incidence of cardiovascular disease and adult-onset diabetes are minimal once social locations such as social class, gender, race and the SDH associated with these locations are taken into account (Davey Smith, Grunnell, & Ben-Shlomo, 2001; Dinca-Panaitescua et al., 2011, 2012; Lantz et al., 1998; Lawlor, Ebrahim, & Smith, 2002; Marmot, Rose, Shipley, & Hamilton, 1978).

For at least a portion of the health research community, this model's emphasis on the SDH helps bridge the gap between structural and behavioural analysis of health problems and is one of its intended effects. In our experience however, health sciences researchers and public health workers take the continued placement of obesity – even in a diminished role – in the model as justification for focusing upon it at the expense of addressing SDH (see examples provided in later sections). Even though obesity is a small 'nail' in this model, so many health sciences researchers and public health workers have only been trained in use of the biomedical/behavioural 'hammer' such that addressing the SDH through community-based or broader public policy action is beyond their conceptual grasp. Similarly, the media and general public appear to lack the ability to appreciate the importance of the SDH and focus on the obesity component (Raphael, 2011b).

The mere inclusion of obesity in the model promotes neglect of the SDH such that practice efforts differ negligibly from those provided by Models 1 and 2. The continued commitments to biomedical and behavioural approaches by most health sciences researchers and public health workers, the media and the general public produces a 'take away message' that is the same as the anti-obesity messages provided by Models 1 and 2: *Excess energy intake by individuals causes obesity-caused health problems.*

Model 4: obesity, shaped by the SDH, does not contribute to adverse health outcome

Model 4 recognizes that the role of obesity in producing adverse health outcomes is at best minimal and it may not play any role in adverse health outcomes once the SDH experienced by those in particular social locations are taken into account (Campos et al., 2006). While the SDH experienced may contribute to obesity, obesity does not itself cause adverse health outcomes. This model directs attention to the SDH and minimizes or denies a role for obesity in producing adverse health outcomes.

This denial of a causal role for obesity in adverse health outcomes is justified in two ways. The first is research evidence of how obesity plays a rather limited role in health outcomes and the lack of evidence that interventions improve the health outcomes of those to whom these interventions are directed (Gaesser & Blair, 2011; Lyons, 2009; Oliver, 2006).

Indeed, evidence exists that excess weight, including even levels of obesity, may actually be health protective (Monaghan et al., 2013). The second is the argument that health outcomes for all – including those who are obese – would best be improved by ending the preoccupation with obesity and focusing on the SDH and the public policies that skew their distribution.

Accepting such a model requires explication of why concern with obesity persists despite the empirical and conceptual arguments against such a preoccupation. Lupton's *ethical* perspective suggests the focus on obesity does little to assist individuals so identified and in fact does significant harm to them. The obesity focus however supports obesity activities of health sciences researchers and public health workers and provides prestige and honour to those so engaged. The *critical weights* perspective argues that despite the harmful effects of the focus on obesity, it persists because it is driven by anti-fat attitudes that reflect long-standing societal discourses about the value of thinness, the meaning of fat, and societal concepts of the ideal body (Gard, 2011; Lupton, 2013; Monaghan et al., 2013).

Model 5: obesity, shaped by the SDH, contributes to adverse health outcomes though societal stigmatization

Model 5 draws upon the *ethical* and *critical weights* approaches to presents the view that obesity may lead to adverse health outcomes but does so as a result of societal attitudes that stigmatize heavy people (Lupton, 2012, 2013; Puhl & Heuer, 2009, 2010; Thatcher, 2004). Fat shaming, stigma and bias associated with adipose, other forms of fat discrimination such as mother blame (Henderson, Harmon, & Newman, 2016; Ward, 2016) or experiences of overweight people with health care professionals (Bombak, McPhail, & Ward, 2016; Garcia, Amankwah, & Hernandez, 2016; Puhl, Phelan, Nadglowski, & Kyle, 2016) have a profound effect on healthy people's overall health, self-esteem and quality of life.

Heavy people are subjected to the classic processes of stigmatization outlined by Goffman (1963) by which 'an individual with an attribute which is deeply discredited by his/her society is rejected as a result of the attribute' (p. 12). Goffman calls the result a spoiled identity. In relation to obesity, see especially Lupton, (2015) and Puhl and Heuer, (2009), (2010). Stigmatization leads to diet regimens of limited effectiveness which may have adverse effects on health (Dallman et al., 2003; Gaesser & Blair, 2011).

In the following sections, we provide examples of how these models play out in Canadian public health documents and professional practice guidelines. Obesity discourse – even when placed in a broader SDH context – continues to situate obesity as a major health issue and endorses individualized, behavioural approaches that are problematic.

Applying the models to Canadian public health policy documents

Models of obesity and health relationship in public health reports

Our first analysis considers how the Public Health Agency of Canada (PHAC) and Canadian Institute for Health Information (CIHI), and Public Health Ontario (PHO) report on obesity and its health consequences (Medvedyuk, 2015). Each agency positions obesity as a serious public health threat requiring urgent action. *Obesity in Canada* (Corscadden et al., 2011) states that 'In recent decades, obesity has become a worldwide issue' (p. 8). Similarly *Addressing obesity in children and youth: Evidence to guide action* (Public Health Ontario, 2013) states that 'The increasing prevalence of overweight and obesity in children and youth is a serious public health problem requiring immediate action' (p. 1).

PHAC and CIHI identify adverse health effects of 'type 2 diabetes, asthma, gallbladder disease, osteoarthritis, chronic back pain, several types of cancers (colorectal, kidney, breast, endometrial, ovarian and pancreatic cancers) and major types of cardiovascular disease (hypertension, stroke, congestive heart failure and coronary artery disease)', 'and is the most prevalent feature of a set of metabolic disorders known as the metabolic syndrome' (Corscadden et al., 2011, p. 27). The report identifies psychological problems of low self-esteem, increased 'societal and employment discrimination', and 'weight bias and negative stereotypes about obese people in a number of sectors: at work, in health care settings, in schools and in the media'(p. 27).

PHO identifies 'psychological issues, diabetes, cardiovascular disease, chronic disease, premature mortality and impaired social, educational and economic prospects, as well as physical morbidity in adulthood' (Public Health Ontario, 2013, p. 29). PHAC and CIHI estimate costs associated with obesity from $4.6 to $7.1 billion annually (Corscadden et al., 2011, p. 2).

Obesity is presented as disease primarily stemming from poor lifestyle and behavioural habits. The PHO report uses a socio-ecological and life course perspective (p. 5) to identify the fundamental cause of obesity and its adverse health effects to be the imbalance between energy intake and energy expenditure over time. The complex web of relations played by environments (such as schools and neighbourhoods) as well as biological factors are acknowledged, but the key assumption is *too much eating and not enough exercising* over a lifetime is the main cause of obesity and its adverse health effects (Public Health Ontario, 2013, pp. 4, 5).

Obesity in Canada uses a population health approach which 'considers a range of determinants or factors associated with health outcomes' (p. 17) for different populations. However the presented evidence is that physical activity, sedentary behaviour and screen time, and diet contribute to obesity. There is little mention of economic, cultural, environmental, and social issues: a word frequency count[4] (see Table A1 and A2 in Supplementary material) shows SDH such as 'working conditions', 'housing', 'poverty', 'low socioeconomic status' and 'income inequality' are not mentioned. 'Gender', 'disability', 'education level', 'SES' or 'low SES', and 'food insecurity' are mentioned a few times. Situating this report against our obesity models finds it generally conforming to Model 2, but its emphasis on behavioural remedies mimics much of the approach of Model 1.

Similarly, *Addressing obesity in children and youth: Evidence to guide action* (Public Health Ontario, 2013) does not systematically explore how SDH of low socioeconomic status, child poverty, and income inequality contribute to obesity or health. It fails to acknowledge the importance for health of the distribution of the SDH.

The obesity prevention strategies further reinforce these limited perspectives. PHAC and CIHI suggest three sets of strategies. The first are individually-based interventions consisting of behaviour modifications training or therapy, dietary interventions, physical activity, combined dietary and physical activity therapy, and bariatric surgery and medications (Corscadden et al., 2011). Their approach is consistent with Model 1.

The PHO report suggests similar strategies: pharmaceutical, surgical, and lifestyle initiatives. Lifestyle/behavioural approaches are said to be the most effective 'especially those that include many components (e.g. diet, physical activity, behavioural therapy and parental involvement)' (p. 78). Surgical and

pharmaceutical interventions are also said to be effective in treating obesity in youth, however there are concerns regarding their long-term safety (p. 126).

The second set of strategies proposed by PHAC and CIHI (Corscadden et al., 2011) includes community-level interventions affecting individual behaviours. Examples are 'educational and information campaigns delivered through print, broadcast and online media' (p. 31), such as social marketing campaigns that promote 'physical activity, healthy eating, and/or healthy weights' (p. 31). Included are initiatives such as 'point-of-decision prompts (e.g. use of stairs); school-based interventions (e.g. more physical education classes, as well as training for teachers); comprehensive worksite programmes that include counselling, education, incentives and access to supportive facilities; point-of-purchase strategies (e.g. menu and shelf labelling); workplace, school and municipal policies and environmental support that increase access to healthier foods and beverages (such as vending machines and cafeterias); and lastly systematic nutrition reminders and training for health care providers' (p. 32). Even though these strategies are labelled as community-level interventions, they focus on behaviour modification of individuals through visual messages, education and counselling, and training of educators and health care providers.

The last set of strategies PHAC and CIHI suggest are public policy interventions which are also behaviourally oriented and include subsidies to support healthy eating and community-based food security initiatives; land development and urban and transportation planning that encourage active commuting and physical activity; food labelling; regulation of marketing to children; financial incentives that promote physical activity; and financial disincentives such as higher taxation of 'junk' food (p. 33).

Narrowing the socio-economic gap, income inequality, or child poverty reduction are not presented as public policy strategies. Chaufan, Jarmin Yeh, and Fox (2013) have shown that active school transportation or active commuting does not result in decreased obesity rates or better overall health (Chaufan et al., 2013). Financial incentives such as Children's Fitness Tax Credit and the Federal Tax Credit for Public Transit do not make a positive change in one's ability to afford healthier food or exercise programmes (Medvedyuk, 2015).

The last set of PHO strategies calls for policy intervention in preschool/child care, school settings and after-school settings such as home, community, workplace, daycare, and health care settings which are primarily behaviourally oriented. These include nutritional guidelines for foods in school cafeterias and vending machines, comprehensive healthy living education, limiting access to fast-food restaurants near places children and youth frequent (p. 102), and 'increased opportunity for physical activity' (p. 127).

All the strategies presented by PHAC and CIHI and PHO (Public Health Ontario, 2013) reinforce the notion that healthy eating and exercise deter obesity thereby promoting health. The proposed community and policy initiatives are directed towards individually based strategies. The message is that provision and consumption of healthy food and increased physical activity are the answer to the obesity 'problem' and it related health problems. The suggested strategies focus solely on individual behaviours and modifications of 'bad' behaviours, neglecting larger economic forces that shape the SDH. There are elements of Model 2 in these presentations but the take-away message is consistent with concepts presented in Model 1.

Models of obesity and health in professional practice guidelines

The second analysis looks at how Canadian clinical practice guidelines (CPGs) consider obesity and its consequences for health (Ali, 2015). CPGs are important as they direct health care professionals' activities (Conroy & Shannon, 1995; Grimshaw & Russell, 1993). The Canadian Medical Association's *Canadian Clinical Practice Guidelines on the Management and Prevention of Obesity in Adults and Children* has clinical and non-clinical components (Lau et al., 2007). The clinical component focuses on the epidemiology of obesity. In particular, the CPG highlights influences on a given individual's life such as lifestyle interventions, physical activity, and dietary interventions. An algorithm for assessing and managing obesity by physicians is proposed.

The second component recommends changes in research, policy and education and might be expected to consider broader issues. It is however, limited to establishing benchmarks and monitoring

of the areas alluded to in the clinical algorithm of the CPG. Lastly, the CPG also discusses the need for research into these physical activity and dietary interventions.

Clinically salient recommendations are the need for a diet with clear energy restrictions and regular physical activity as a first line of defence to achieve clinically significant weight loss. In particular, the CMA recommends 'physical activity (30 minute a day of moderate intensity, increasing, when appropriate, to 60 minute a day) as part of an overall weight-loss program' (p. 8). With regard to patient interactions, the CMA suggests health care professionals actively discourage children and adolescents from 'sedentary pursuits' of playing video games and watching television (p. 8). Lastly, CMA recommends pharmacologic and surgical interventions for 'appropriate overweight or obese adults who are not attaining or who are unable to maintain clinically important weight loss with dietary and exercise therapy, to assist in reducing obesity-related symptoms' (p. 8).

Non-clinical recommendations include Canadian-specific data on BMI and waist circumference and research dedicated to 'developing reference data that are based on health-related criteria or outcomes rather than being merely representative of the population' (p. 9). In particular, the CMA recommends the establishing of 'ethnic-specific cut-off values for waist circumference, with optimal sensitivity and specificity for discriminating clinical events' (p. 9). Lastly, the CMA argues for significant funding to research if adequate and effective reforms are to be ushered in that 'address knowledge gaps and answer outstanding questions in the area of obesity' (p.10). Not surprisingly, the CPG sees obesity as a major health issue and does not move beyond individually oriented behavioural remedies at both the clinical and non-clinical levels. It is firmly ensconced in the assumptions of Model 1.

The Registered Nurses' Association of Ontario's (RNAO) CPG, *Primary Prevention of Childhood Obesity* presents numerous recommendations for individual, institutional, and national actions on obesity (Registered Nurses Association of Ontario, 2014). Recommendations are provided for clinical situations, educational priorities in health care, and systematic societal reforms. At the individual level, the RNAO recommends the need to adequately access 'family environment for factors (e.g. parenting/primary caregiver influences and sociocultural factors) that increase children's risk of obesity' (p. 9).

At the institutional level, it calls for interventions that are universally applied, address multiple facets, are inclusive towards a patient's caregivers, and are coordinated across various settings. They call for 'a comprehensive population-level surveillance system to monitor risk and protective conditions' (p. 61). It would monitor the population's weight, socio-economic factors such as poverty, and population trends for physical activity (p. 12).

At the clinical level, the RNAO recommends continuously assessing 'children's nutrition, physical activity, sedentary behaviour, and growth according to established guidelines, beginning as early as possible in a child's lifespan' (p. 27). There is clear recognition of Model 2 components but the takeaway messages are most consistent with those presented in Model 1.

Not surprisingly, these CPGs posit a direct and causal link between obesity and various adverse health outcomes. In its failure to consider how the SDH both impact obesity and health the CMA CPG reinforces Model 1 assumptions. The RNAO CPG consider the SDH as a contributor to obesity (Model 2) but its remedies, like those of the CMA CPG, reinforce the problematic obesity and health assumptions provided in Model 1.

Clinical practice guidelines do not have to be limited to changing individual behaviours. Adapting clinical practice to address the broader determinants of health has become an active area of innovation in health care in Canada (The College of Family Physicians of Canada, 2015).

Discussion: ending the obesity and health focus

We have presented five models of the obesity and health outcomes relationship that illustrate the current state of research and practice in the obesity and health area. We take the position that the anti-obesity perspective – which contributes most strongly to Models 1 and 2 but also Model 3 – does little to improve health outcomes and should cease being advanced by health sciences researchers and public health workers. There are three primary reasons for this position. The first is that the health

effects of obesity are overstated. In fact there is much evidence to suggest the health-protective aspects of being overweight. The second is that the anti-obesity perspective is remarkably effective in directing attention away from the primary causes of adverse health outcomes, the inequitable distribution of the SDH brought on by problematic public policy. Even when obesity is given a minor role in health outcomes such as in Model 3, it dominates professional activities and public understandings.

The third argument for ending obesity discourse is that rather than serving to improve health outcomes, it does the opposite. However, well-meaning health sciences obesity researchers and public health workers may be, in reality the anti-obesity perspective can stigmatize individuals, blame them for their own health problems, and promote eating behaviours and public attitudes towards overweight people that threaten, rather than promote health.

This is not implausible. Bell and colleagues (Bell, McCullough, Salmon, & Bell, 2010; Bell, Salmon, Bowers, Bell, & McCullough, 2010) convincingly argue that anti-tobacco strategies have embraced the use of stigma as a means of denormalizing tobacco use. At least in that case, there is little doubt of the adverse health effects of tobacco use, an argument contested in the case of obesity.

The balance sheet is clear. Since the anti-obesity perspective does more harm than good, it should be ended. Promoting this course of action will not be easy. There are three main strategies for doing so. The first is drawing upon the rather extensive literature that shows how obesity itself plays a rather minor role in causing the major chronic diseases of cardiovascular disease, respiratory disease and adult-onset diabetes and numerous other afflictions. The second is showing how the emerging literature of how societies with more equitable distribution of the SDH are also the ones that have both better population health profiles as well as lower obesity rates (Offer, Pechey, & Ulijaszek, 2010). The third is highlighting how processes of stigmatization and victim blaming associated with the anti-obesity perspective harms rather than promotes health. Ideally, the energies now expended on addressing obesity can be shifted at least in part to addressing the SDH by improving their quality and making their distribution more equitable, thereby improving health.

Notes

1. Boero (2012, 2013) expands on the analysis of media coverage of obesity to show how moral entrepreneurs influence media in the 'production and dissemination of scientific knowledge' (p. 373) often using studies and information that sound more alarming and news worthy. 'Indeed, media attention to a particular issue not only informs policy but it also can result in more funding becoming available to develop solutions to these problems.' (p. 376).
2. The negative physiological and psychological health effects of stigma have been researched for more than five decades (Puhl & Heuer, 2009, 2010); however stigmatization of fat still strongly persists in everyday and is mirrored in obesity perspectives and models of health which drive research and practice (Lupton, 2013, 2015).
3. Critical social scientists use the term social location to describe these individuals occupying positions of differing power and influence (Anderson, 2011). These concepts are not part of the conceptual repertoire of adherents of Models 1 and 2 and therefore not used by these adherents.
4. The word frequency analysis was based on first designating key words through qualitative content analysis, specifically thematic analysis done through coding of *Obesity in Canada* (Corscadden et al., 2011) and *Addressing obesity in children and youth: Evidence to guide action* (Public Health Ontario, 2013) completed by Medvedyuk (2015). A hand count was then conducted to identify frequency of mentions.

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