

Abstract

During recent years, tremendous efforts were made to combat the issue of obesity. Health care professionals warned of the danger of obesity and its negative effects on the individuals' health. Policy makers sensed the heaviness of the issue and its impact on the economy. Relentless efforts were made by governments, medical experts, researchers, health care team members and even individuals to address this matter. Yet, the statistics reflected a constant increase in obesity trend throughout the country. Sharpe (2013) reported an increase in adult obesity rate to 27.2% in 2013 compared to 26.2% in 2012, which claimed surpassing "all annual average obesity rates since... 2008". It becomes indisputable that there is a strong relationship between obesity and a number of diseases including type II diabetes, cardiovascular diseases, hypertension and much more. Now that said, the question that imposes itself is that why the previous steps taken by all Americans, whether on the institutional or individual level, were relatively unsuccessful in decreasing the obesity rate or at least keep it steady? If awareness campaigns in health care facilities, public transportations and schools were moderately inefficient to lower the rate of obesity for the past years, what else could be done to alleviate the acuity of the problem? Is the problem directly related to individuals, health or education institutions, the whole society or a combination of all? As health care professional, patients' advocates and educators, what is our role in bringing some positive changes to this matter? To what extent, could nurses positively influence their patients to address or even prevent them from falling in the obesity trap? This paper will explore the aforementioned questions and suggest possible interventions that might be considered by nurses in dealing with obesity in their daily practice based on current statistics, available evidences and resources.

According to Smeltzer, Bare, Hinkle and Cheever (2010), obesity is described as body mass index (which is weight to height ratio) over 30% or 20% above ideal body weight (p. 1202). The official Centers for Disease Control and Prevention stated recently that 78.6 million American adults are considered obese (CDC, 2012). This means more than one third of U.S. population are dealing with the threat of obesity! Sharpe (2013) reported an increase in adult obesity rate to 27.2% in 2013 compared to 26.2% in 2012, which claimed surpassing "all annual average obesity rates since... 2008". The one percent rate increase is statistically significant and compared to previous data, is the largest since 2009. Nonetheless, the increase is neither limited to specific class or ethnicity, nor seems to be short-term change; "if the current trend continues for the next several years, the implications for the health of Americans and the increased burden on the healthcare system could be significant (Sharpe, 2013). The aforementioned statistics excluded overweight population. This is crucial to keep in mind if we want to consider the effect of exceeding normal BMI (between 18.5 and 24.9) person's health. A BMI as low as 24 is considered the starting point for a person to be at risk for diabetes type II (Smeltzer et al., 2010). Consequently, if we consider the percentage of overweight and obese Americans combined together, they represent two thirds of the population according to a recent study performed by the Institute for Health Metrics and Evaluation (Wilke, 2014). Although this paper will not discuss the overweight issue, it is important to consider that weight management and its strong effect on the overall health is much more serious to get the attention of all citizens before it reaches the threshold of obesity.

Besides the negative effects of obesity on the individual's health, it represents a burden on the health care system as well as the whole country's economy. For instance, if we take only the effect of weight on diabetes type II, obesity consists of being a major risk factor for this disease. The number of people newly diagnosed increases by about 1 million per year (CDC, 2014). By 2030, the number of cases is expected to exceed 30 million (Smeltzer et al., 2010). Economically speaking, "the estimated annual medical cost of obesity in the U.S. was \$147 billion in 2008 U.S. dollars; the medical costs for people who are obese were \$1,429 higher than those of normal weight" (CDC, 2014). Now that statistics and evidences from reliable sources reflected the existence of the growing issue of obesity in the United States in the past few years, let us explore the relationship between obesity and some diseases, to emphasize the importance of faster and more effective interventions.

Obesity plays the role of the extra drop of water that spills the full cup. Once it triggers the first disease, a snowball effect takes place where a series of other complications results from the very first problem: obesity! According to the American Diabetes Association, Obesity is the second leading risk factor for diabetes mellitus after family history (Smeltzer et al., 2010). The National Institute of Health (2013) claimed that obesity predisposes the individual to a long list of life threatening diseases including coronary heart disease, hypertension, cancer and stroke. The excess of fat – which may lead to plaque build-up that accumulates in arteries-has a systemic negative effect on the general health. If the plaque builds up in the coronary arteries, this will narrow the passage for blood and oxygen supply, which may consequently lead to angina, heart attack or even heart failure. Those plaques increase the resistance of the arteries and raise their pressure, which may also lead to hypertension. If the small arteries could not handle the pressure anymore and rupture in the brain, a clot will form and a chance for stroke is very high. The increase body mass and fat tissue obliges the body to produce more insulin to counteract the increasing caloric intake and metabolize the present sugar in the blood. Over time, the body loses this ability, and the glucose build up leads to diabetes type II diagnosis. At this point, the vicious circle resumes again, and many serious fatal diseases can occur including CHD, peripheral neuropathy, kidney failure and blindness (Health Risks of Overweight and Obesity, 2013). Though the aforesaid diseases seem frightening and possibly fatal, weight maintenance is considered key factor in managing or even preventing their occurrences. Lifestyle modifications that include physical activity (regular aerobic exercise for at least 30 minutes a day) and weight maintenance (BMI of 18.5-24.9 kg/m²) are considered the first steps in preventing or managing hypertension (Smeltzer et al., 2010). Appropriate lifestyle change can prevent the incidence of diabetes according to Diabetes Prevention Program Research Group, while another research (the 16-lesson curriculum of the intensive program of lifestyle modifications) demonstrated that this stands true even in high-risk people (Smeltzer et al., 2010).

Aware of the strong correlation between ideal body weight and decrease or prevention of many diseases and complications, health and government organizations took many steps to decrease the spiking rate of obesity in America. CDC initiated steps to educate the public on how to fight obesity such as the three steps action program: Take action for family, community and self. In each step, the big emphasis was on learning facts about obesity and education of self and others. It went further to implement rigid nutrition standards in school meals, ban sale of beverages in many school facilities, provide big range of free healthy food through programs such as WIC (women, infant, child), SNAP (supplemental nutrition assistance program) and summer meals to vulnerable and low-income populations. Other steps went even higher than merely educating the public and providing financial assistance through government programs, by implementing legislation that might limit unhealthy food availability. The ci-devant New York Mayor Michael Bloomberg initiated a wave of public awareness about the effect of sugary drinks on obesity and related diseases as well as an attempt to pass a legislation to ban super-sized soft drinks. Those latter were considered “ the largest driver of increases in obesity and caloric consumption... according to New York city officials. Americans now consume 200 to 300 more calories daily than 30 years ago” (Goldman &Standford, 2012). The emphasis on sugary drinks was further supported by medical researches, and “ at least 28 scientific studies and papers on food addiction” that suggests that sugary drinks “hijack the brain in ways that resemble addictions to cocaine, nicotine and other drugs” (Goldman et al., 2012). CDC even proposed the implementation of aggressive taxations on “junk food” similarly to what was previously and successfully done for the tobacco control program. “After a decade with no decrease in smoking, New York City implemented a five point tobacco control program, which included two policy initiatives: aggressive increases in cigarette taxation (2002) and smoke free air legislation (2003). During 2002-2004, estimated adult smoking prevalence decreased from 21.5% to 18.4%, representing nearly 200,000 fewer smokers in New York city” (CDC, 2014).

Furthermore, nutritionists and dieticians explored and negotiated different ways to help clients adopt a healthier and lower calorie regimen to lose and maintain healthy weight. The use of non-nutritive substitutes was not only a choice for diabetic patients but also approved by FDA to be safely used as an alternative to high caloric sugar for people who are struggling with weigh loss. The Academy of Nutrition and Dietetics endorsed their use in moderation along with a healthy diet as recommended by the Dietary Guidelines for Americans (Shankar et al., 2013). Health care teams, including nurses

and physicians help their patients with calculating their caloric requirements depending on their age, gender, height, weight, and activity level. Exchange lists provided clients with variety of food that take into consideration the individual's preferences. "Even foods such as pizza, chili, and casseroles as well as convenience foods, desserts, snack foods and fast foods are available from the American Diabetes Association" (Smeltzer et al, 2010).

Surprisingly, among the usual recommendations for tackling obesity issue, CDC suggested, "decrease television viewing", particularly for youth as a critical intervention to tackle constant weight issue in America. This latter was based on researches and evidences that supported the strong effect of the media on the citizens' food choices especially, the younger ones. "The U.S. Institute of Medicine (IOM) published a comprehensive review of the literature and concluded that food and beverage advertising to children and teens: 1) Almost exclusively promotes products high in calories, sugar, fat, and sodium; 2) Increases preferences and requests to parents for these unhealthy product and 3) likely contributes to poor diets, obesity, and diet-related diseases"(Harris, Heard & Schwartz, 2014). A survey done in 2011 reported a percentage of 65% of parents, compared to 59% in 2009, considered that the food industry and marketing have a negative effect on their children. They reported concern of helplessness and an urge to apply strict policy on food industry and media that target their kids (Harris et al., 2014).

Aware of the great impact of marketing on the young audience, who continue to carry on the bad eating habits to adulthood, and thus ensure a continuous liability for "junk food industry", companies spend yearly \$1 billion on advertising unhealthy products that almost target children 12 years and older (Harris et al., 2014). Marketers take the physiological and emotional growth of those vulnerable customers into great consideration. Most teenagers exhibit impulsiveness and lack on control that are mainly due to the imbalance between the overwhelmed limbic system and the immature frontal cortex, as well as the search for identity and independence from parental overprotection. These characteristics are well studied by marketing investors such as POPAI who claimed "clearly teens are still largely influenced and guided by their parents – but eager for independence and to be recognized as individuals. And with an annual average of \$2,047 each to spend, retailers, brand marketers, food manufacturers, entertainment companies and others are in hot pursuit"(Harris et al., 2014). Another Facebook executive stated that "a recent Cadbury's Crème Egg ['Have a Fling'] campaign was fabulous work... targeting teens using TV plus Facebook – and it's that incremental reach you get by bringing the two together that's really powerful. It reached 15 million unique users... but most importantly a 66% increase in purchase intent, which led to a 9% sales rise"(Harris et al., 2014). The malignancy in targeting such a specific population is based on well-studied strategies! A Coca-Cola executive ironically expressed that they "can't afford not to talk to teens. You can't think, 'teens already know us' and skip a couple of years. Every six years there's a new population of teens in the world" (Harris et al., 2014).

It seems like a war, where all humanistic principals and morals collapse for the sake of victory, between those in the marketing business who want to make the most profit regardless health impact on customers, and health care teams, experts, concerned parents and individuals who want to promote healthy habits and weight management. Both parties use statistics, analysis and science to help them reach their goals. As concerned nurses and patients' advocates, we carry a moral obligation toward our clients to assess, teach, evaluate and act for their own physical and mental benefits. Nurses are in the best position to advocate for their patients because of their "constant skilled presence...the close and intimate nature of the nurse-patient relationship, the ability...to observe and assess the patient's strengths and vulnerabilities, and the complexity of the healthcare system that makes it difficult for patients to navigate the system or even to advocate for themselves" (Fowler, 2010). Most of the obese people are aware of the negative effect of obesity, wish to shed pounds and many of them tried more than once to loose weight. It is our job as nurses to assess the patient' current and individual problem, cognition and motivation level, explore past adopted strategies, and possible reasons for relapsing. We should also take into consideration the age group, the personal culture and the developmental period to use appropriate methodology and interventions. This would

differ from one patient to another, but for now, let's explore some of the aforementioned interventions and reflect on them.

Although passing legislation such as the one for tobacco control might be helpful in reducing the availability of high sugary and low-nutritive food, such complicated procedure is not easy to accomplish. Opponents like business owners, lawyers and freedom of choice supporters ardently argued "the decision by the board of health to approve the ban was overreaching and ignored the rights of New Yorkers to make their own choices. The plan is 'grossly unfair' to small businesses such as hot-dog vendors and pizzerias because convenience and grocery stores can still sell the larger sizes... Under the city's rule, people could still buy as many of the smaller drinks as they want and get" (Goldman et al., 2012). Unlike tobacco, which chronic use leads to many fatal disease, and also the effect of second hand smoke on non-smokers that become scientifically inarguable, unhealthy food, such as potato chips, soft drinks...etc lack similar weight and strength to enable defenders to push toward passing legislation to prohibit their sale. Even government programs such as SNAP that allow recipients to use a card for food purchase could not eliminate those products from eligible food. The Food and Nutrition Act of 2008 "defines eligible food as any food or food product for home consumption.... Since the current definition of food is a specific part of the Act, any change to this definition would require action by a member of Congress. Several times in the history of SNAP, Congress had considered placing limits on the types of food that could be purchased with program benefits. However, they concluded that designating foods as luxury or non-nutritious would be administratively costly and burdensome" (SNAP, eligible food items, 2010).

As for the sugar free food as an alternative to sweet products that are high in sugar, this is still a matter of controversy that necessitates further and deeper studies and researches. Similarly to the marketing that targets teenagers to make big material profits, companies took advantage of the rise of the obesity and the desire of people to shed pounds and be fit without having to sacrifice their favorite "sweet products". They advertised for products such as non-nutritive sweeteners (NNS) and claimed their safety for all ages (Shankar et al., 2013). A systematic review about the NNS debated that they are actually 30 to 30,000 times sweeter than regular sugar (sucrose), but the assumed small portion use "yield sugar like sweetness in food products, thus enabling the manufacturer to label them as virtually 'sugar free' or 'non-caloric' (Shankar et al., 2013). This turn to be problematic when consumers use big quantities, adding at least more extra calories and thus aggravating their weight and health problem, believing that NNS are really "non-caloric" and "sugar free"! Furthermore, their safety to use in food industry was called into question according to the same review, when multiple animal studies showed evidence of the carcinogenic effects one artificial sweetener- cyclamate- which led the FDA to ban it. Although FDA still endorses the safety of other NNS in food industry unless future researches suggest the opposite, a recent scientific statement issued by the American Heart Association and the American Diabetes Association "emphasizes that weight management depends more on total calorie restriction rather than avoidance of caloric sweeteners or sugar" (Shankar et al., 2013). Besides, other animals' studies showed that NNS, especially saccharin, have a paradoxical appetite-promoting effect, which is believed to lead to more weight gain. Likely, some recent studies have found that there is a strong correlation between diet soda and metabolic syndrome as well as weight gain (The role of diet in metabolic syndrome, 2008). Another study examined 3,682 adults who drank artificially sweetened beverages for a period of seven to eight year, and noted a constant increase in their BMI. Yet, the lack of definitive researches does not allow experts to encourage or discourage their safety and use. Another study suggested that "inconsistent coupling between sweet taste and caloric content can lead to compensatory overeating and positive energy... artificial sweeteners, precisely because they are sweet, encourage sugar craving and sugar dependence. Repeated exposure trains flavor preference" (Yang, 2010). Similar researches were done on dietary salt, fat and flavor substitution. The result also suggested that "systematic reduction of dietary salt or fat without any flavorful substitution over the course of several weeks led to a preference for lower levels of those nutrients in the research subjects...unsweetening the world's diet may be the key to reversing the obesity epidemic" (Yang, 2010).

Lastly, the media has a strong effect and defined strategies to influence customers, especially the youth who lack impulse control and good judgment, which renders the concerned parents and health care members helpless regarding the promotion of healthy weight. Regardless the efforts to eradicate the advertisement of poor nutritive food, Kelly Brownell (2013), an expert in Yale Rudd Center for Food Policy confirmed "objective reports have shown a tidal wave of marketing of calorie-dense, nutrient-poor foods to children, and if any change is occurring, marketing is on the increase." Combined with peer pressure and identity search that are typical to adolescence stage, "middle-school students have the opportunity and the means to purchase advertised products on their own, while parents' influence over their food choices declines" (Harris et al., 2014). However, if controlling the media is not a choice at least for the moment, controlling the amount of TV exposure or not even having one at home is an option for dedicated parents. Bandura's Social Learning Theory showed that "children learn social behavior such as aggression through the process of observation, learning and watching the behavior of another person" (McLeod, 2014). The famous Bobo Doll experiment had important implication for the influence of the media on children. Regardless the parents' education level, modeling behaviors, and concerns regarding eating habits and lifestyle, children start detaching gradually and expressing their own identity and even "hazing" their parents values and teaching as part of normal growth (O'Brien, 2013). They look for models other than their parents, such as movie stars, teachers or others. Controlling the models that children are watching and mimicking is possible for concerned parents by limiting, selecting programs or not even having a TV set at home is an option (which many parents, including me, do). As nurses, we can play a pivotal role in providing anticipatory guidance, especially to new parents through preparing them for the characteristics of each developmental stage and the impact of TV that might interfere with the parents' ideologies and parenting styles.

This will bring up the importance of prevention as part of our role as nurses in the health care system. It is true that obese people are in an urgent need for medical and supportive attention to prevent the aforementioned complications; yet, health care members should not forget about preventing those currently fit patients from getting overweight and then obese due to variety of reasons including peers and marketing pressure. In our regular assessment, a positive comment such as "looking in a good shape" might play a big role in motivating a person to stay fit, especially adolescents and other patients whose body image is very important to them. In chapter two "from uterus to university", Imus emphasized on the importance of prevention as the best cure, and therefore should be "the focus of any health care and parenting protocol...mothers with health problems-particularly obesity, diabetes and hypertension- are more likely to have children with health problems" (Imus, 2008). Another Doctor, Joel Fuhrman, emphasized on the necessity to talk about the obesity not only with the obese adults, teenagers or children but also to expecting parents. "It is also what the kids eat when they're young, but it's also what happens to the developing egg and what happens in the womb. And I blame the American diet!" (Imus, 2008). Evidences showed that an unhealthy diet during pregnancy has been "linked to reduced birth weight and head circumference, reduced intelligence, and increased risk of high blood pressure and stroke later in life" (Imus, 2008).

Moreover, healthy weight management should be the focus of every health care member; mainly nurses who are trained and skilled in providing individual care plans and implement interventions. According to Gallup, nursing is the most trusted profession in the United States consecutively for the past last fourteen years (except in 2001), we are in the best position to assess for risks and current problem, interact closely with patients, educate, model and implement necessary interventions based on each individual. The nurse should first assess the patient's motivation and perception about obesity. The person's cultural belief might differ from the westerner ideal BMI. In some cultures (like mine) obesity is viewed as sign of wealth and beauty. Since we are dealing with variety of cultures, especially in a diverse place such as New York, nurses should be culture sensitive and competent, and never assume that everyone would like to loose weight and be fit. According to "several recent studies - including the global analysis released in May by IHME -.... two-thirds of Americans are overweight or

obese, less than 40% of American adults characterize themselves as either very or somewhat overweight. This discrepancy may suggest that addressing the obesity crisis in America must first start by convincing overweight Americans that they are indeed overweight" (Wilke, 2014). There is little to do if the person is not motivated to be fit and perceived his/her weight within normal range.

Motivation is the key for compliance and change. The author of "growing green" has a ranch in New Mexico, where chronically ill children, nurses and physicians are invited for a free week stay. They have access to clean air, organic food, but no "McDonald's...candy or ice cream. Instead, there's chemical-free hearty vegan fare, which some of the kids loved and others just tolerated" (Imus, 2008). Children had to contract on doing assigned chores and be part of new family for the stay. The doctor in the ranch reported that he noticed something that he "never normally have to do: watch... patients take their daily medications.... the children, all veteran patients, would remember, informing me that, "Doc, I took my pills!" (Imus, 2008). However, because all those sick kids were intrinsically motivated to change by accepting the tough ranch rules, diet restrictions and chores, which is not typical for such young population, compliance to the strict regimen was shockingly impressive. Motivation, which was relatively ignored in the previous interventions such as passing legislations, educating, providing flavor substitutions etc., is a very important initial step to consider. Any further intervention that health care members or concerned parents might take- teaching, educating, counseling etc.- will not be deemed to failure if the patient is not motivated to change. For about two years, my primary care provider encouraged me with all means to lose weight to stay healthy. I never paid the least attention to her recommendation because we both have different opinions about how healthy should look like. Ironically, I was thinking that she would look much better if she gain few pounds. It was until I felt the impact of weight on my daily activities, energy level and borderline blood and lipid profile, that I took her words seriously and followed the instructions of an amazing nutritionist from back home. This latter -Dr. Mohamad Faid- has more than one in the field (nutrition, agriculture...), and his arguments and scientific analysis made a lot of sense to me. Similarly, some of the patients that I interviewed during my clinical psychiatric rotation confessed to me that once they are discharged they would go back to substance abuse again, because they were involuntarily admitted. One patient clearly stated: "I do what they want, to get what I want". Likewise, although Mayor Bloomberg publicized scary facts and pictures about consequences of consumptions of sugary beverages, such as limbs amputations, 69% to 30% Americans still "voted against a law that limits the size of soft drinks and other sugary beverages served in restaurants to no more than 16 ounces" because it violates their autonomy and ignore their inherent right to make decisions for themselves (Brown, 2014).

In addition to exploring what can inspire each individual patient, encouraging and supporting already motivated clients is another key factor in fighting obesity. Just like the usefulness of pointing out the signs of improvement during the lag period of a depressed person to ensure medication compliance and adherence, it is imperative to give positive feedback to the obese patient, who recently lost only a few pounds after a strict lifestyle change, exhausting work and serious engagement. The patient might be so disappointed that a huge effort is needed just to not gain further pounds or shed few. The nurse can point out that a "weight loss as small as 5 % to 10 % of total weight may significantly improve blood glucose levels, risk for diabetes and its complications, including amputation, renal failure and blindness" (Smeltzer et al., 2010). A depressed patient who seeks quick relief may not be aware of his/her increased activity level or appetite if someone else did not mention it. A subtle change may be promising and encouraging. Correspondingly, a patient who feels unhappy because of missing sweet taste, a statement such as "it takes 2 to 3 months for your taste buds to get used to unsweet taste" might bring some optimism and hope to the patient without false reassurance (Smeltzer et al., 2010). Personally, it took less than a month for me to enjoy my morning Moroccan tea without sugar.

Finally, weight management is a lifetime commitment that could not easily be done through mere education, forceful legislation or parental and health care members recommendation and overprotection. It is a personal conviction that involves individual predisposition and willingness to adhere and adopt. When it comes to younger individuals, who lack maturity to use judgment and control impulsiveness, concerned adults may play a major role in setting healthy models and protecting as much as possible those vulnerable populations from marketing predators. This might be arguable and not accepted by many adults who believe that TV is a necessity of today's modern life. However, many parents and researchers supported that limiting TV exposure is a key factor in preventing obesity. Nurses can play a major role in individualizing patient's care plan, assess strengths and weaknesses, motivation to change, perception regarding ideal weight, and provide anticipatory guidance and necessary interventions based on available evidences to help them keep an ideal weight, alleviate the crisis of obesity in America and reach the goal of 2020 of healthy people.

Resources

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