Review Article

Obesity & Women Health

Sanat Malhotra[1] and Shalini Malhotra[2]*

[1]Year 12, IB, GEMS Wellington International School, Dubai

[2]MS (Obs & Gyn), DNB, MNAMS, MRCOG (UK), Consultant Obs & Gyn, Al Qassimi Women & Children Hospital, Ministry of Health, Sharjah, Dubai

*Corresponding author: Shalini Malhotra, MS (Obs & Gyn), DNB, MNAMS, MRCOG (UK), Consultant Obs & Gyn, Al Qassimi Women & Children Hospital, Ministry of Health, Sharjah, Dubai

Introduction

The WHO website clearly states that the prevalence of obesity has tripled from 1975 and most of the world's populations live in countries where overweight and obesity kills more people than underweight [1]. The 2030 Agenda for Sustainable Development recognizes non-communicable diseases as a major challenge for sustainable development, with obesity being the most important one, affecting families, communities and causing immense cost burden on economies globally.

Even though both men and women across all ages are equally affected, it is more prevalent among women than men in the United States [2]. It becomes an becomes an issue of grave concern when women of reproductive age group are affected as there is intergenerational transmission of obesity and other metabolic disorders to children [3]. It is thus a matter of concern as the future generations are. This article aims to detail the extent, implications and causes of this preventable problem and how prevention strategies can be strengthened by improving awareness.

There are 3 ways commonly used to categories obesity. These are Body Mass Index (BMI), waist to hip ratio and percentage body fat. BMI, defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2), is considered the standard to define over-weight and obesity as it is the same in both men and women. A BMI of 18.5 to 24.9 is normal weight. Overweight is defined as a BMI of 25 to 29.9, and BMI of 30 or greater is considered obese.

What Predisposes to Obesity

Genetic Predisposition

There is a strong genetic component to the likelihood of having obesity. A landmark study by Stunkard et al. followed 540 adult Danish adoptees and found that while there was no relationship between the adoptees' BMI and the BMI of their adoptee parents, there was a strong correlation to the BMI of their biological parents [4].

Obese women who are pregnant with high maternal circulating lipids transfer a larger amount of lipids across their placentas to the fetuses, creating an increased risk for metabolic disease in childhood. Brian et al also state that maternal macronutrient intake in the prenatal period correlates well with offspring macronutrient intake at 10 years of age, and maternal fat intake is a strong predictor of offspring fat mass [5].

Recent evidence also indicates that father's BMI is also predictive of obesity. Fathers with obesity have children who are at higher risk of developing metabolic disease later in life, independent of the body weight of the mother [6].

Diet

Energy imbalance due to over nutrition and lack of physical activity contributes to this growing problem.

Sleep

Rahe et al., established through their study that poor quality sleep (Pittsburg scale used) can be a predictor for general obesity and increased body fat mass [7]. Harry et al found that both sleep quality and duration (<7 hours) are related to higher body weight, and that could possibly be related to what Doo et al quoted in their study that the short sleepers consumed significantly more dietary carbohydrates (CHO) than those with normal sleep durations [8].

What is alarming is that among those who were obese, sleep durations shorter than and longer than 7-8 hours were also associated with higher all-cause mortality [9], Koo et al through a multivariate logistic regression analyses showed that high outdoor ALAN (Artificial Light at Night) was significantly associated with obesity after adjusting for age and sex. Examples of ALAN are lights from electronic devices, lights, or TV and also lights coming into room from outside (example in crowded cities) [10].

The importance sleep cannot be overemphasized .Both good duration of sleep (7-8hours) and quality is essential to remain healthy and avoid becoming obese.

Consequences

Effects

Childhood obesity is an important contributor of adolescent obesity and premature death. Adolescent obesity is associated with significant comorbidities like risk of fractures, hypertension, cardiovascular diseases and insulin resistance as also, Sleep-Related Breathing Disorders (SRBD), such as habitual snoring, Obstructive Sleep Apnea (OSA), upper airway resistance syndrome and hypoventilation, which affect their growth development and daytime functioning. Future skills of such adolescents can be compromised too [11].

Obese adults can get sick with cardiovascular diseases (mainly heart disease and stroke), diabetes, musculoskeletal disorders (especially osteoarthritis); some cancers (including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon).

Obese women can have alterations in the reproductive cycle with an increased risk of Polycystic Ovarian Syndrome (PCOS), infrequent or no ovulation and a resulting reduction in fertility. A tendency towards insulin resistance starts then making them prone to developing diabetes, particularly in later life. The treatment of infertility becomes more complicated and less successful in such women [12] with a very challenging reproductive period and pregnancy being high risk, with increased chances of cesarean section, depression after childbirth, breast feeding problems, etc.

Being obese is for women complicates their lives and affects the family as a whole much more.

Is There a Role of Prevention?

Obesity is a multifactorial complex problem with many health theories and ideas in the minds of people living in different socio-structural circumstances, making it worse to find one solution.

Weight management through lifestyle modifications is the need of the hour, especially in the most vulnerable sections of the population-women and children. Dinsdale et al concluded that often women were not averse to weight management intervention during and after pregnancy, provided they are well communicated and offer constructive, individualised advice and support [13]. The role of societal institutions, such as the food industry and the media, cannot be highlighted more. Citizen engagement by the media to create awareness about good lifestyle and eating habits is one intervention that supports government initiatives .Weight management support services should be welcoming so that more women are inspired to join. Developing healthy food options and their affordability with access to fresh fruits and vegetables enables people to consider them in dietary preferences.

Social initiatives are very important to enforce individual determination in maintaining optimal BMI. Campaigns like "The Healthy People 2010 goal" from the US and "Fitness Challenge" from UAE are only two examples to emphasise that promoting physical activity should bedone in a way that masses join in. Educational banners and session specifying atleast 150minutes of active exercise per week help people find ways to remain active in their respective homes or areas. Sports facilities should be accessible and affordable.

Conclusion

It is imperative for governments across the globe to encourage the population to increased levels of physical activity, better their eating habits and ensure regularity in their daily lives. Though we are dealing with an outbreak of infectious diseases after many years, it is time to act in time to prevent non-communicable diseases like Obesity, ready to cause one. Women are more vulnerable due to various phases in their lives like pregnancy, etc buthave more responsibility of ensuring optimal BMI to as it can affect the next generation. The growing importance of god sleeps in avoiding Obesity and ways to avid ALAN are interesting and worth further research.

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