Biological, Psychological and Social Bases of Health and Behavior

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Exploring Overeating within the Biopsychosocial Framework

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Introduction

Why do people overeat? There are more answers to this seemingly simple question than one may expect. Overeating can be based on biology, our socio-cultural environment, individual psychology or any combination thereof. The following script outlines some of the most significant aspects of overeating. The worst outcome of overeating, obesity has been declared a global epidemic by the World Health Organization (WHO) in the 1990’s. The WHO estimates that worldwide more than 300 million adults suffer from obesity (WHO, 2012) with the number of overweight and obese people steadily increasing in both developed and poorer nations.

1. Genetic Explanations

There are two frames of reference to the genetic explanation. The first model is based on the phenotype-genotype expression in relation to our changed environment on a historical level. This more general argument from medical anthropology states that from an evolutionary perspective our bodies have developed the capability to quickly and easily translate calorie-rich nutrients into body-fat since in early cultural history humans had to endure periods of seasonal and periodic hunger. What had once evolved as a useful survival mechanism has now turned into a liability. In a changed environment where food is readily available the new phenotype expression leads to people simply putting on far more weight (Brewis, 2011, p.38).

The second explanation is based on individual genetic level and points to the BDNF protein which is synthesized by Chromosome 11p13 in the hypothalamus and several other brain areas. It is associated with regulating our food intake and our body weight. A deficiency of this particular protein is linked to predispose individuals to obesity (Ooi, C. L., Kennedy, J. L., & Levitan, R. D., 2012). High-risk individuals with this specific genetic deficiency may thus prove more resistant to standard treatment approaches. Genetic efficacy renders in three types ranging from little to no causality for overeating, efficacy triggered by presented environmental conditions or being causally effective regardless of environmental stimuli.
2. Socio-Environmental Factors

Environmental factors can be conceptualized from global changes translating into national to large-group behavior and finally individual habits and customs. For example, working environments all over the world have become less physically demanding and many activities, such as e.g., computer-based work, have become more sedentary leading to lower energy expenditure. The global food industry produces more and cheaper high-calorie food rather than providing for fresh nutrition of higher quality. Food advertising conditions people to consume more than they need while the increase of food-outlets and supermarkets make any type of food more readily available (Kumanyika, 2007). The social divide in many countries has resulted in overweight and obesity turning into disorders of the poor. Energy-dense food and more sedentary occupations have become available to low-wealth and low-education groups (Jones-Smith et. al, 2012). Poorer families have also less monetary resources available to purchase high quality foods, turning being overweight and obesity into a new social problem (Burns, 2009, Monsivais et al., 2010)

3. Psychological Eating Disorders

The most commonly known pathological eating disorders are Binge Eating Disorder (BED), the Night Eating Syndrome (NES) as well as emotional eating which may or may not be associated with BED. Both BED and NES are discrete and different psychological constructs (Allison et al., 2005). BED is described as compulsive overeating and is diagnosed when present for at least two days a week for the period of six months. Pharmacotherapy and Cognitive-Behavioral Therapy (CBT) show high success rates in treatment for both the frequency of binge eating as well as actual weight loss (Grilo et al., 2011). BED has a high rate of comorbidity. This means it is often associated with other disorders such as Major Depression, Personality Disorders, Substance Use, Axis 1 Disorders or Anxiety Disorder. BED is thus often regarded as a correlated effect of another prevalent disorder and not necessarily a primary cause.
NES is characterized by nocturnal awakenings at least twice per night and eating during the awakenings. Epidemiologically 1.5% of the general population and 6-14% of severely obese patients are reported to suffer from NES (Milano et al, 2011, p.4). NES is characterized by the dysregulation of circadian pattern of food intake without affecting the circadian rhythm of sleep. Cognitive-behavioral therapy is the treatment of choice, optionally medication with SSRIs or non-pharmacological treatment options such as CBT or light-therapy (Milano et al., 2011, p.8).

Emotional eating takes place, as defined by Schneider and colleagues (2012) ‘...when negative emotions trigger food intake.’ Negative emotions range from anxiety, sadness, loneliness, guilt, depressed mood to being worried or even bored (Koball et al., 2012). For the differentiated assessment of emotional eating, specific emotional eating scales have been developed (Arno et al., 1995).

4. Discussion & Conclusion

What happens when we leave an explanation out or discount a single approach in the biopsychosocial model? Misdiagnosis would inevitably be followed by the wrong treatment approach. For example, a patient who overeats simply because of temporary stressors in life which could be addressed by CBT would perhaps be treated pharmacologically. Or school-children who simply eat more because of a fast-food restaurant available near their school would be misdiagnosed with an onset of BED. A neuroscientist who reductively concludes that the problem is exclusively created ‘all in the brain’ (Monroe, 2011) may not be able to address overeating habits caused by environmental changes or psychological causes. Diagnosing overeating properly is a complex and challenging task. It can only succeed if we allow all evidence on neurological, genetic, social and psychological level to be admitted as evidence during assessment.
References


