



Co-funded by the
Erasmus+ Programme
of the European Union



Breaking WEIGHT BIAS

Promoting Health without
harming through digital
training tools

Project number:

2020-1-UK01-KA204-
079106

1.4. Impact of weight bias on patients' health





Table of Content

TRAINING CONTENT	3
1.4. Impact of weight bias on patients' health	3
1.4.1. Physical health	3
1.4.2. Mental health	6
1.4.3. Public health	6
EXTERNAL RESOURCES	9



TRAINING CONTENT

1.4. Impact of weight bias on patients' health

Weight bias, stigma and discrimination, very often have a serious impact on people living in large bodies. To date, most research studies have not considered the role that these factors play in obesity treatments (Kirk et al., 2020). However, over time we can see a significant change. But still, many people, including healthcare professionals can often be unaware of the impact of weight bias on patients' health.

According to the Canadian Obesity Clinical Practice Guidelines (Kirk et al., 2020), **weight bias, stigma, and weight discrimination can not only negatively affect obesity treatment, but also lead to the development of obesity** (Sutin and Terracciano, 2013; Hunger and Tomiyama, 2014).

This chapter is divided into 3 sections where we will learn how weight biases can affect: physical health, mental health and public health.

1.4.1. Physical health

Weight stigma leads to psychological consequences that are associated with increased risk for physical health issues (Figure 1.4.1.(a)).

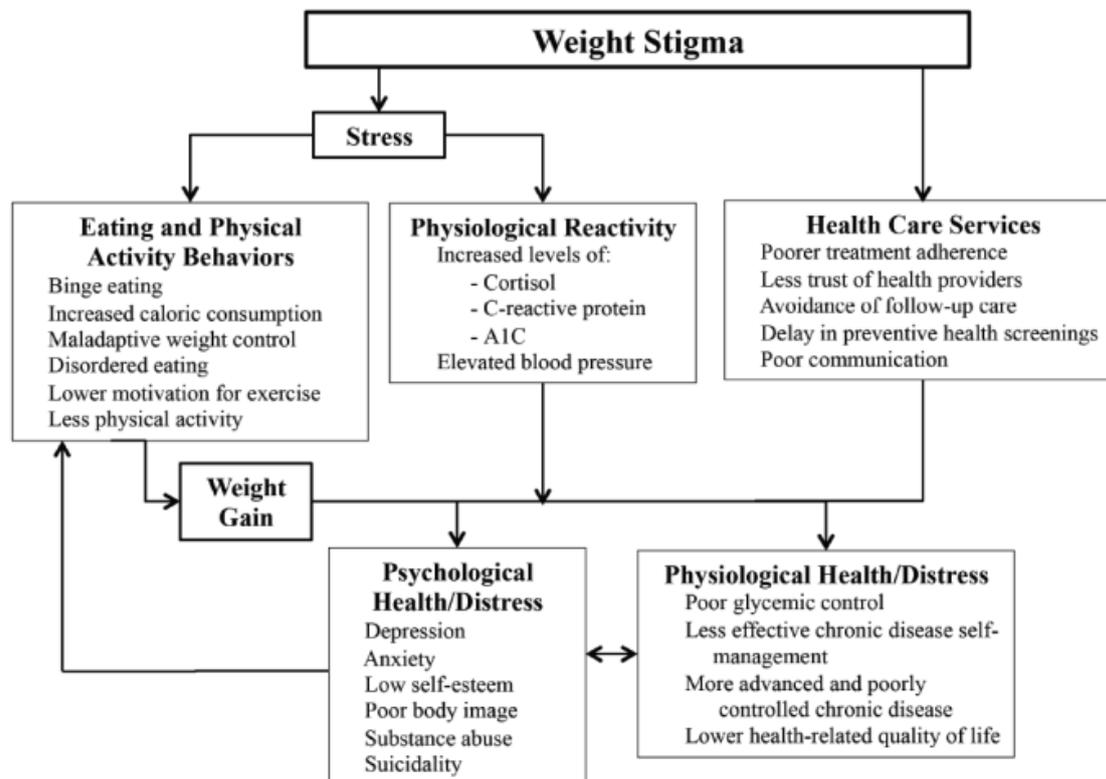


Figure 1.4.1.(a) Health consequences resulting from experiences of weight stigma. (Puhl et al., 2016)



Repeatedly experiencing weight stigma induces **chronic stress**, which in turn can increase cortisol levels, and oxidative stress independent of adiposity levels (Himmelstein et al., 2015; Tomiyama et al., 2014). Himmelstein et al.,'s (2015) experiment showed that cortisol levels are sustained high in people who perceived themselves as heavy, after a weight-stigmatising manipulation compared with non-stigmatised controls. Stressors have been found to stimulate the secretion of other glucocorticoids by the hypothalamic-pituitary-adrenal axis system (HPA axis) apart from cortisol, which can lead to dysregulation of appetite and satiety. Moreover, cortisol can cause increased fat deposition, especially in the abdominal area (Gee et al., 2008).

Similar findings of different studies confirm the harmful effect of weight stigma on C-reactive protein, blood pressure (Sutin et al., 2014; Tomiyama et al., 2014), and glycemic control (indexed by A1C) (Tsenkova et al., 2011). It is worth mentioning that these outcomes remain even after controlling BMI (Friedman et al., 2008).

Not surprisingly, the combination of psychological and physical effects of weight bias and discrimination on the human body can increase the risk of developing obesity and contribute to the increase in weight and waist circumference (Jackson et al., 2014). It should also be noted that many of the diseases that are associated with obesity, including hypertension and diabetes, are partly developed by discrimination-related stress (Muennig, 2008).

A review by Tomiyama (2014), proposed the cyclic obesity/weight-based stigma (COBWEBS) model, which describes weight stigma as a "vicious cycle", wherein stigma results in cortisol secretion, promoting weight gain and perpetuating even more stigma (Figure 1.4.1.(b)).

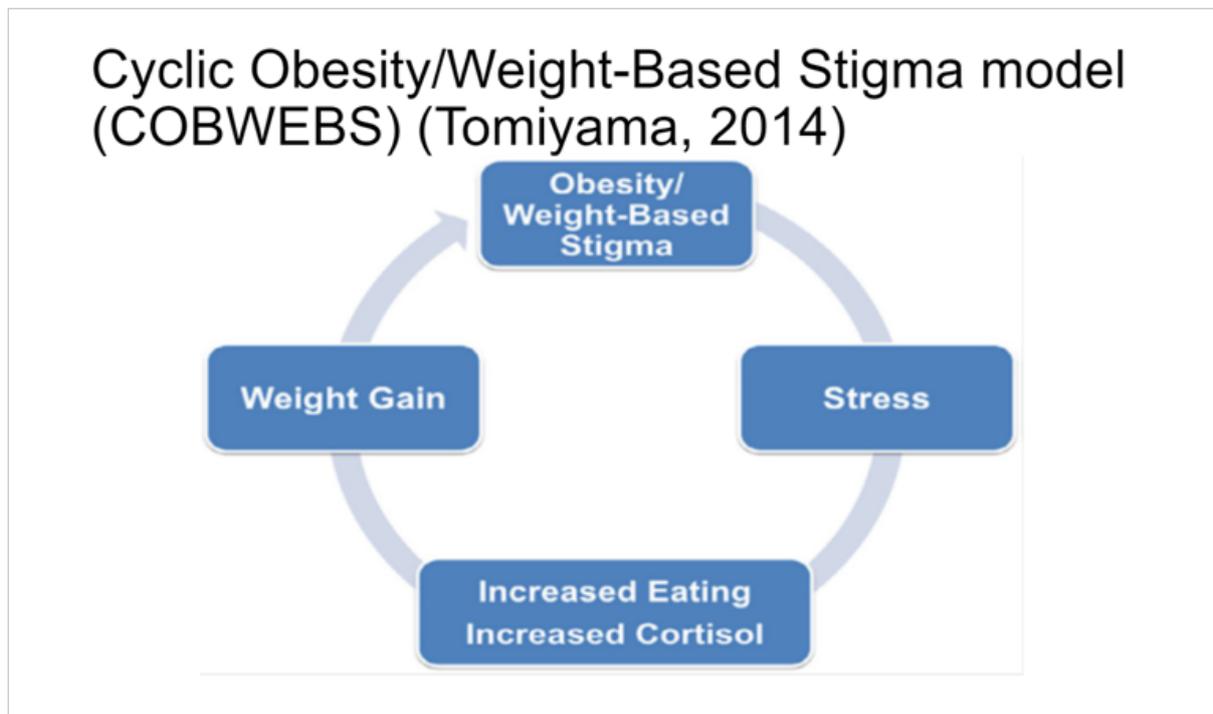


Figure 1.4.1.(b) Cyclic Obesity/weight-based stigma model (COBWEBS), (Tomiyaama, 2014)

According to the results of a study by Sutin et al. (2015), weight discrimination was associated with an **increased risk of mortality by 60%** in participants from two different studies (Health and Retirement Study-HRS and Midlife in the United States Study-MIDUSS) and this increase in mortality risk was not explained by common physical and physiological risk factors. As Sutin et al (2015) says “In addition to poor health outcomes, weight discrimination may shorten life expectancy.” (Sutin et al., 2015).

Taking all the above-mentioned into consideration, it seems evident that weight stigma is a risk factor for many health issues, including the development of obesity and poor management of chronic diseases, such as diabetes. Focusing on the elimination of weight bias in healthcare settings is a prerequisite for taking care of people’s health.



1.4.2. Mental health

Negative comments and inappropriate attitudes of physicians and healthcare professionals toward people living in large bodies also undoubtedly affect people's mental health. Mental health encompasses our emotional, psychological, and social well-being and affects our behaviour and feelings (U.S. Department of Health & Human Services, 2020).



What psychological consequences can weight bias have?

- *Depression* - Stigma associated with weight may be one of the causes of depression according to some studies (Wadden et al., 2007). Friedman et al. (2005) found that the **frequency of weight stigma experiences was positively related to depression** in a sample of 93 people with obesity seeking treatment, even after controlling for the effects of gender, age of obesity onset, and body mass index (BMI) (Friedman et al., 2005). Retrospective studies also show that childhood teasing about appearance also affects depression in adult women with overeating syndrome and also in patients with bulimia (Jackson, 2000).

- *Understated self-esteem* - According to a study conducted by Annis et al. (2004) among three non-clinical groups of women (N=165), weight-related biases may also affect self-esteem of people with obesity. Equivalent degrees of stigma were reported by women, and **more frequent lifetime stigma was correlated with lower self-esteem**. In a representative sample of more than 3,000 adults, Carr and Friedman (2005) found that individuals living in large bodies reported lower levels of self-acceptance than those having a weight considered to be “normal”, which was entirely driven by perceptions of weight discrimination.

- *Body dissatisfaction* - Weight-related stigma and bias have a strong influence on body perceptions and the formation of a poor body image in people living in large bodies. Several studies have documented significant positive associations between the experience of weight stigma and body dissatisfaction, both in non-clinical samples and clinical samples of people living in large bodies (Annis, 2004).

1.4.3. Public health

Weight bias can also negatively affect public health. As we already discussed previously, weight-related stigma has a major impact on physical and mental health of people at every body size and shape. This is especially true for individuals living in a large body.



Most national interventions for **obesity prevention** concentrate on the eating and exercise habits of individuals, **disregarding societal and environmental contributors to obesity**. Economic and social disparities, as well as weight stigma and discrimination, induce unfair treatment for many people living in large bodies and people with obesity, which in turn can lead to even more **health disparities** (Puhl & Heuer, 2010). It is also worth mentioning that research has already shown (Robertson et al., 2007) that obesity is more prevalent among lower socioeconomic groups, which means that the stigmatisation of individuals affected by obesity is inextricably linked to **social inequalities**.

Figure 1.4.3.(b) summarises individual and public health consequences of weight stigma that may ultimately worsen life outcomes for people who are affected by obesity, as proposed by Puhl & Heuer (2010).

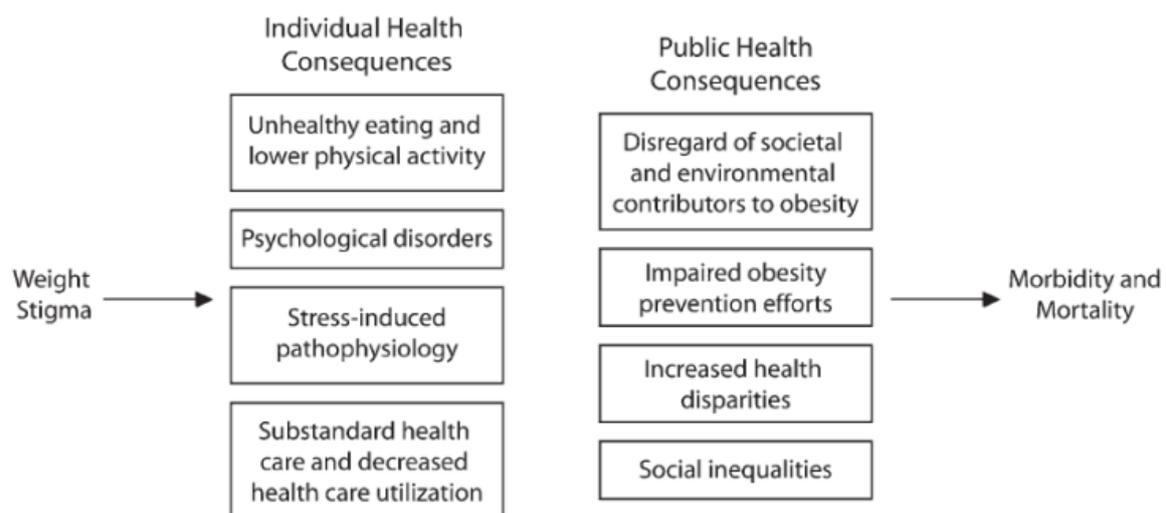


Figure 1.4.3.(a) Individual and public consequences of weight stigma (Puhl & Heuer, 2010)

The social consequences of ignoring weight discrimination and stigma can have detrimental effects on public health and exacerbate health inequities that are already a pervasive problem among our society. It seems paradoxical that although it is a widely-accepted belief that stigma undermines public health, yet this principle has not been applied to weight-related and obesity stigma.

Common societal assumptions about obesity, including the belief that people with obesity are to blame for their weight, contribute to a disregard for weight stigma and its impact on emotional and physical health. Examination of these assumptions in light of current scientific evidence reveals that obesity stigma creates significant barriers to address obesity effectively and deserves recognition in the public health agenda (Crister, 2004).



Co-funded by the
Erasmus+ Programme
of the European Union



For the public health community to address the widespread health and social inequities faced by people with obesity, **the victim blaming approach needs to be abandoned** and replaced by the advocacy of a comprehensive obesity prevention strategy that includes efforts to reduce stigma and discrimination based on weight.



EXTERNAL RESOURCES

- Alberga A.S., Edache I.Y., Forhan M., Russell-Mayhew S. (2019). Weight bias and health care utilization: a scoping review. *Primary Health Care Research & Development* 20(e116): 1–14. <https://doi.org/10.1017/S1463423619000227>
- Almeida L., Savoy S., Boxer P. (2011). The role of weight stigmatization in cumulative risk for binge eating. In: Puhl R.M., Phelan S.M., Nadglowski J., Kyle T.K. (2016). Overcoming Weight Bias in the Management of Patients With Diabetes and Obesity. *Clinical Diabetes Journal* 34 (1)44-50 <https://doi.org/10.2337/diaclin.34.1.44>
- Altman A. (2020, April 20). Discrimination. Stanford Encyclopedia of Philosophy. Retrieved November 18, 2021, from <https://plato.stanford.edu/entries/discrimination/#ConDis>.
- Amy N.K., Aalborg A., Lyons P., Keranen L. (2006). Barriers to routine gynecological cancer screening for White and African-American women with obesity. *Int J Obesity & Related Metabolic Disorders*. 30: 147-155.
- Andreyeva T., Puhl R. M., Brownell K. D. (2008). Changes in perceived weight discrimination among Americans, 1995-1996 through 2004-2006. *Obesity*, 16(5), 1129–1134. <https://doi.org/10.1038/oby.2008.35>
- Annis N.M., Cash T.F., Hrabosky J.I. (2004). Body image and psychosocial differences among stable average weight, currently overweight, and formerly overweight women: the role of stigmatizing experiences. *Body Image* 1: 155–167.
- Bagley C.R., Conklin D.N., Isherwood R.T., Pechiulis D.R., Watson L.A. (1989). Attitudes of nurses toward obesity and obese patients. *Percept Mot Skills*. 68:954.
- Carr D., Friedman M.A. (2005). Is obesity stigmatizing? Body weight, perceived discrimination, and psychological well-being in the United States. *J Health Soc Behav* 46(3):244–259
- Chaput J.P., Zachary M. Ferraro, Denis Prud'homme, Arya M. Sharma. (2015). Widespread misconceptions about obesity. *Can Fam Physician*. 60(11): 973-975
- Colley R.C., Garriguet D., Janssen I., Craig C.L., Clarke J., Tremblay M.S. (2011). Physical activity of Canadian children and youth: accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Rep*. 22(1): 7-23
- Cori G.C., Petty M.L.B., Alvarenga M.S. (2015). Attitudes of dietitians in relation to obese individuals –an exploratory study. *Cien Saude Colet* 20: 565–576.
- Crister G. (2004) Fat Land: How Americans Became the Fattest People in the World In: Puhl R.M., Heuer C.A (2010). Obesity Stigma: Important Considerations for Public Health. *American Journal of Public Health* 100(6):1019-1028
- Davis-Coelho K., Waltz J., Davis-Coelho B. (2000). Awareness and prevention of bias against fat clients in psychotherapy. *Professional Psychology: Research and Practice*, 31(6), 682–684. <https://doi.org/10.1037/0735-7028.31.6.682>
- Desmond S.M., Krol R.A., Snyder F.F., O'Connell J.K. (1987). Family practice physicians' beliefs, attitudes, and practices regarding obesity. In: Foster G.D, Wadden T.A, Makris A.P., Davidson D., Sanderson R.S., Allison D.B., Kessler A. (2003). Primary Care Physicians' Attitudes about Obesity and Its Treatment. *Obesity Research* 11(10)-1168-1177
- Durso LE, Latner JD, Hayashi K. (2012). Perceived discrimination is associated with binge eating in a community sample of non-overweight, overweight, and obese adults. In: Puhl R.M., Phelan S.M., Nadglowski J., Kyle T.K. (2016). Overcoming Weight Bias in the Management of Patients With Diabetes and Obesity. *Clinical Diabetes Journal* 34 (1)44-50 <https://doi.org/10.2337/diaclin.34.1.44>



- Formica, M. J. (2013). Self-blame: The ultimate emotional abuse. *Psychology Today*. Retrieved November 20, 2021, from <https://www.psychologytoday.com/us/blog/enlightened-living/201304/self-blame-the-ultimate-emotional-abuse>.
- Friedman K.E., Ashmore J.A., Applegate K.L. (2008). Recent experiences of weight-based stigmatization in a weight loss surgery population: psychological and behavioral correlates. *Obesity* 16(Suppl. 2):S69–S74
- Friedman K.E., Reichmann S.K., Costanzo P.R., Zelli A., Ashmore A., Musante G.J. (2005). Weight stigmatization and ideological beliefs: relation to psychological functioning in obese adults. *Obes Res* 13: 907–916.
- Gash D. (2021). The weight of expectations. *The Lancet Psychiatry*, 8(5), 366–368. [https://doi.org/10.1016/s2215-0366\(21\)00098-5](https://doi.org/10.1016/s2215-0366(21)00098-5)
- Ge G.C., Ro A., Gavin A., Takeuchi D.T. (2008). Disentangling the effects of racial and weight discrimination on body mass index and obesity among Asian Americans. *Am J Public Health*. 98(3):493–500.
- Greenberg B.S., Eastin M., Hofschire L., Lachlan K., Brownell K.D (2003). Portrayals of Overweight and Obese Individuals on Commercial Television. *American Journal of Public Health* 93, 1342_1348, <https://doi.org/10.2105/AJPH.93.8.1342>
- Harvey E.L., Hill A.J. (2001). Health professionals views of overweight people and smokers. In: Foster G.D, Wadden T.A, Makris A.P., Davidson D., Sanderson R.S., Allison D.B., Kessler A. (2003). Primary Care Physicians' Attitudes about Obesity and Its Treatment. *Obesity Research* 11(10)-1168-1177
- Hebl MR, Xu J. (2001). Weighing the care: physician reactions to the size of a patient. In: Foster G.D, Wadden T.A, Makris A.P., Davidson D., Sanderson R.S., Allison D.B., Kessler A. (2003). Primary Care Physicians' Attitudes about Obesity and Its Treatment. *Obesity Research* 11(10)-1168-1177
- Himmelstein M.S., Incollingo Belsky A.C., Tomiyama A.J. (2015). The weight of stigma: Cortisol reactivity to manipulated weight stigma. *Obesity*. 23(2):368-374. <https://doi.org/10.1002/oby.20959>
- Hunger J.M., Tomiyama A.J. (2014). Weight labeling and obesity: a longitudinal study of girls aged 10 to 19 years. *JAMA Pediatrics*. 168(6):579–580. <https://doi.org/10.1001/jamapediatrics.2014.122>.
- Jackson SE, Beeken RJ, Wardle J. (2014). Perceived weight discrimination and changes in weight, waist circumference, and weight status. *Obesity* 22:2485–2488
- Jackson TD, Grilo CM, Masheb RM. (2000). Teasing history, onset of obesity, current eating disorder psychopathology, body dissatisfaction, and psychological functioning in binge eating disorder. *Obes Res* 8: 451–458.
- Kirk S.F., Ramos Salas X., Russell-Mayhew S., Alberga, A.S. (2020). Reducing Weight Bias in Obesity Management, Practice and Policy. Canadian Adult Obesity Clinical Practice Guidelines. Retrieved November 18, 2021, from <https://obesitycanada.ca/wp-content/uploads/2021/05/1-Reducing-Weight-Bias-v6-with-links-1-1.pdf>.
- Maclean P.S., Bergouignan A., Cornier M.A., Jackman M.R. (2011). Biology's response to dieting: the impetus for weight regain. *Am J Physiol Regul Integr Comp Physiol*. 301(3):R581–600. Epub 2011 Jun 15.
- Maddox G.L., Liederman V. (1969). Overweight as a social disability with medical implications. In: Foster G.D, Wadden T.A, Makris A.P., Davidson D., Sanderson R.S., Allison D.B., Kessler



- A. (2003). Primary Care Physicians' Attitudes about Obesity and Its Treatment. *Obesity Research* 11(10)-1168-1177
- Maroney D, Golub S. (1992). Nurses' attitudes toward obese persons and certain ethnic groups. *Percept Mot Skills* 75:387–91. 46.
- Muennig, P. (2008). The body politic: the relationship between stigma and obesity-associated disease. *BMC public health*, 8, 128. <https://doi.org/10.1186/1471-2458-8-128>
- Obesity Action Coalition (n.d.), Understanding Obesity Stigma [Brochure]. <https://www.obesityaction.org/get-educated/public-resources/brochures-guides/understanding-obesity-stigma-brochure/> Accessed: 10.02.2022
- Poustchi Y., Saks N.S., Piasecki A.K., Hahn K.A., Ferrante J.M. (2013). Brief intervention effective in reducing weight bias in medical students. *Family medicine*,45(5):345-8.
- Prunty A., Clark M.K., Hahn A., Edmonds S., O'Shea A. (2020). Enacted weight stigma and weight self-stigma prevalence among 3821 adults. *Obesity Research & Clinical Practice*, 14(5), 421–427. <https://doi.org/10.1016/j.orcp.2020.09.003>
- Puhl R.M., Andreyeva T., Brownell K.D. (2008). Perceptions of weight discrimination: prevalence and comparison to race and gender discrimination in America. *Int J Obes (Lond)* 32: 992–1000.
- Puhl R.M., Brownell K.D. (2001). Bias, discrimination, and obesity. *Obes Res* 2001; 9: 788–905.
- Puhl R.M., Heuer C.A (2010). Obesity Stigma: Important Considerations for Public Health. *American Journal of Public Health* 100(6):1019-1028
- Puhl R.M., Phelan S.M., Nadglowski J., Kyle T.K, (2016). Overcoming Weight Bias in the Management of Patients With Diabetes and Obesity. *Clinical Diabetes Journal* 34 (1)44-50 <https://doi.org/10.2337/diaclin.34.1.44>
- Puhl R.M., Suh Y. (2015). Health consequences of weight stigma: implications for obesity prevention and treatment. In: Puhl R.M., Phelan S.M., Nadglowski J., Kyle T.K, (2016). Overcoming Weight Bias in the Management of Patients With Diabetes and Obesity. *Clinical Diabetes Journal* 34 (1)44-50 <https://doi.org/10.2337/diaclin.34.1.44>
- Robertson A., Lobstein T., Knai C. (2007). Obesity and socio-economic groups in Europe: evidence review and implications for action. Brussels: European Commission; https://ec.europa.eu/health/ph_determinants/life_style/nutrition/documents/ev20081_028_rep_en.pdf, accessed 28 February 2020).
- Schvey N, Puhl RM, Brownell KD. (2011). The impact of weight stigma on caloric consumption. In: Puhl R.M., Phelan S.M., Nadglowski J., Kyle T.K, (2016). Overcoming Weight Bias in the Management of Patients With Diabetes and Obesity. *Clinical Diabetes Journal* 34 (1)44-50 <https://doi.org/10.2337/diaclin.34.1.44>
- Schvey NA, Puhl RM, Brownell KD. (2014). The stress of stigma: exploring the effect of weight stigma on cortisol reactivity. In: Sutin AR, Stephan Y, Terracciano A. (2015). Weight discrimination and risk of mortality. *Psychol Sci.* 26(11):1803-1811. <https://doi.org/10.1177/0956797615601103>
- Schwartz M.B., O'Neal Chambliss H., Brownell K.D., Blair S.N., Billington C. (2003). Weight bias among health professionals specializing in obesity. *Obes Res.* 11:1033–1039.
- Spahlholz J., Baer N., König H.H., Riedel-Heller S.G., Luck-Sikorski C. (2016). Obesity and discrimination - a systematic review and meta-analysis of observational studies. In: Kirk S.F., Ramos Salas X., Russell-Mayhew S., Alberga, A.S. (2020). Reducing Weight Bias in Obesity Management, Practice and Policy. Canadian Adult Obesity Clinical Practice



- Guidelines. Retrieved November 18, 2021, from <https://obesitycanada.ca/wp-content/uploads/2021/05/1-Reducing-Weight-Bias-v6-with>
- Sobal, J., & Maurer, D. (2017, October 25). *Interpreting weight: The social management of Fatness and thinness* |. Taylor & Francis. Retrieved November 20, 2021, from <https://doi.org/10.4324/9780203788264>.
- Sutin A.R., Stephan Y., Luchetti M., Terracciano A. (2014). Perceived weight discrimination and C-reactive protein. *Obesity* 22:1959–1961
- Sutin, A.R. Stephan, Y. Terracciano, A. (2015). Weight discrimination and risk of mortality. *Psychological science*, 26(11):1803-1811. <https://doi.org/10.1177/0956797615601103>
- Sutin A.R., Terracciano A. (2013). Perceived weight discrimination and obesity. *PLoS One*. 8:e70048. <https://doi.org/10.1371/journal.pone.0070048>.
- Teachman B.A., Gapinski K.D., Brownell K.D., Rawlins M., Jeyaram S. (2003). Demonstrations of implicit anti-fat bias: the impact of providing causal information and evoking empathy. *Health Psychol* 22: 68–78.
- Tomiyama A.J. (2014). Weight stigma is stressful. A review of evidence for the Cyclic Obesity/Weight-Based Stigma model. *Appetite*, 82, 8-15, <https://doi.org/10.1016/j.appet.2014.06.108>.
- Tomiyama A.J., Epel E.S., McClatchey T.M., Poelke G., Kemeny M.E., McCoy S.K., Daubenmier J. (2014). Associations of weight stigma with cortisol and oxidative stress independent of adiposity. *Heal Psychol*. 33(8):862–867. <https://doi.org/10.1037/hea0000107>
- Tsenkova V.K., Carr D., Schoeller D.A., Ryff C.D. (2011). Perceived weight discrimination amplifies the link between central adiposity and nondiabetic glycemic control (HbA1c). *Ann Behav Med* 41:243–251
- U.S. Department of Health & Human Services. (n.d.). *What Is Mental Health?* Retrieved February 15, 2022, from <https://www.mentalhealth.gov/basics/what-is-mental-health>
- Wadden T.A., Sarwer D.B., Fabricatore A.N., Jones L., Stack R., Williams N.S. (2007). Psychosocial and behavioral status of patients undergoing bariatric surgery: what to expect before and after surgery. *Med Clin North Am* 91: 451–469. <https://doi.org/10.1016/j.mcna.2007.01.003>.