

1 Telling people they are overweight: helpful, harmful or beside the point?

2
3
4 Eric Robinson ¹, Ashleigh Haynes ¹, Angelina R Sutin ², Michael Daly ^{3,4}

5
6 ¹ Institute of Psychology, Health & Society, University of Liverpool, Liverpool, UK

7 ² Florida State University, College of Medicine, Florida, US

8
9 ³ Behavioural Science Centre, Stirling Management School, University of Stirling, UK

10 ⁴ UCD Geary Institute, University College Dublin, Ireland

11
12 Correspondence: Eric Robinson, Institute of Psychology, Health & Society, University of
13 Liverpool, L69 7ZA, UK. Email: eric.robinson@liv.ac.uk

14
15
16
17
18
19
20
21
22 **Declaration of Conflicting Interests:** The authors declared that they had no conflicts of
23 interest with respect to their authorship or the publication of this article.

24 **Word count:** 979

25 **Key words:** obesity; weight misperceptions; obesity stigma; body image

26 Weight status misperception refers to when a person's subjective perception of their own or
27 another person's objective weight status is incorrect. Parents of children with overweight and
28 obesity often fail to identify their child as being 'overweight' and in a similar vein, a large
29 number of adults, adolescents and children with overweight or obesity fail to recognise that
30 they are overweight. These observations are not new and have long been presumed to be a
31 concern; if people do not realise they are overweight, how will they change their behavior to
32 lose weight? For example, the failure of parents to identify their children as overweight has
33 recently been described as 'promoting the silent rise' of obesity¹ and new research reported in
34 the International Journal of Obesity suggests that healthcare professionals not notifying
35 children and their families of their 'unhealthy weight status' is a missed opportunity to
36 combat obesity². These sentiments are echoed in public health intervention approaches. One
37 example is national weight measurement programmes that monitor child weight and notify
38 parents if their child has an 'unhealthy' weight status.

39 The presumption that ignorance is damaging in this context has face value and is
40 supported by some cross-sectional evidence, as numerous studies have shown that individuals
41 who fail to recognise they are overweight are less likely to be attempting weight loss.
42 However the best prospective evidence to date suggests that ignorance may be bliss when it
43 comes to overweight and obesity. If ignorance is damaging, then children whose parents fail
44 to identify their overweight status should be the most at risk of further weight gain. The
45 opposite, however, is true: When a parent identifies their child as being overweight, that child
46 is most at risk of future weight gain³. Likewise, if ignorance is damaging, then adolescents
47 and adults with overweight who fail to identify themselves as such should be at risk of
48 gaining further weight. Again, the opposite is true: it is self-identification of being
49 overweight that is prospectively predictive of greater weight gain⁴. A recent quasi-

50 experimental study has also shown that, among adolescent females, notification of being
51 overweight was associated with increased weight gain⁵.

52 What can explain these counter-intuitive findings? Overweight and obesity are widely
53 stigmatised, and knowledge that you possess a characteristic devalued and derogated by
54 society is likely to be psychologically damaging. Theory from social psychology suggests
55 such stigmatization impairs self-regulation and makes weight management more difficult⁶. In
56 line with this suggestion, one of the reasons that self-identification of overweight is
57 associated with increased weight gain is because it places a person at a greater risk of stress-
58 induced overeating⁴. Likewise, other research has shown that perceived weight discrimination
59 predicts a range of negative health outcomes, including further weight gain. Thus, the stigma
60 attached to identifying as being a person with overweight or obesity may ironically
61 exacerbate these conditions.

62 Aside from weight gain, evidence links self-identification of overweight to mental
63 health problems. Cross-sectional and longitudinal work examining differences between those
64 who identify vs. fail to identify themselves as being overweight support this argument and
65 suggest that this process plays out across the lifespan: Adolescents who identify as
66 overweight are at higher risk of major depression than those who believe they are of normal
67 weight⁷. It is plausible that lower psychological wellbeing predisposes an individual to
68 recognise that they are overweight rather than lower psychological well-being being a
69 consequence of identifying as overweight. Longitudinal data, however, support the former
70 proposition: identifying as being overweight is predictive of poorer psychological outcomes
71 over time. For example, one study found that adolescents who self-identified as overweight
72 (as opposed to not self-identifying) were more likely to experience declines in mental health
73 by young adulthood⁸. Importantly, the evidence also suggests that whether or not someone
74 identifies as being overweight is predictive of poorer psychological outcomes independently

75 of their objective weight status. See Table 1 for additional studies that link self-identification
76 of overweight to negative health outcomes. These findings suggest that the stigma attached
77 to overweight and obesity not only exacerbates obesity but also damages mental health.

78 What relevance do these findings have to public health efforts against weight gain and
79 obesity? First, they reinforce the idea that the psychosocial experience of obesity is part of the
80 etiology of obesity and is likely to be one major contributor to why it is such a devastating
81 condition. Second, they suggest that ‘light touch’ public health approaches directed at the
82 ‘individual’, such as informing people that their weight is ‘unhealthy’, probably have no
83 beneficial effect on health. Moreover, if such approaches do not consider the stigma attached
84 to overweight and obesity they may even be to the detriment of the individual. In terms of
85 successful weight management across the life course, those who identify as overweight fare
86 worse than those who fail to identify as overweight⁴. A large amount of obesity research to
87 date has focused on intervening at the ‘individual’ level and few would argue that these
88 efforts have by and large have failed; we lack convincing ‘individual’ level interventions that
89 achieve meaningful weight loss that is maintained in the long-term⁹. This outcome is not
90 surprising when we consider the environment in which the individuals we target reside.
91 Changes to the food environment have been widely accepted as one major cause of the
92 obesity crisis¹⁰. With this in mind, if we are serious about tackling obesity we should in part
93 accept that approaches targeted at the individual will be doomed to fail unless the obesogenic
94 food environment is addressed. ‘Renormalizing’ our obesogenic food environment will
95 require substantial government investment and policy change. Critically, this process will
96 need to be research led. One benefit of taking aim at the environment, rather than the
97 individual, is that this approach does not stigmatise the individual. This approach also takes
98 aim at the cause and therefore most likely solution to the obesity crisis; our current
99 obesogenic food environment.

100
101

Table 1: Additional References

Sonneville, K. R., et al. (2016). Helpful or harmful? Prospective association between weight misperception and weight gain among overweight and obese adolescents and young adults. <i>International Journal of Obesity</i> , 40(2), 328-332.
Liechty, J. M., & Lee, M. J. (2015). Body size estimation and other psychosocial risk factors for obesity onset among US adolescents: findings from a longitudinal population level study. <i>International Journal of Obesity</i> , 39(4),601-7
Gerards, S.M., et al (2014). Parental perception of child's weight status and subsequent BMIz change: the KOALA birth cohort study. <i>BMC Public Health</i> ; 14, 291.
Essayli, J. H., et al. (2016). The impact of weight labels on body image, internalized weight stigma, affect, perceived health, and intended weight loss behaviors in normal-weight and overweight college women. <i>American Journal of Health Promotion</i> , in press.
Incollingo Rodriguez, A. C., Heldreth, C. M., & Tomiyama, A. J. (2016). Putting on weight stigma: A randomized study of the effects of wearing a fat suit on eating, well-being, and cortisol. <i>Obesity</i> , 24(9), 1892-1898.
Hunger, J. M., & Tomiyama, A. (2014). Weight labeling and obesity: A longitudinal study of girls aged 10 to 19 years. <i>JAMA Pediatrics</i> , 168(6), 579-580.
Hayward, J., Millar, L., Petersen, S., Swinburn, B., & Lewis, A. J. (2014). When ignorance is bliss: weight perception, body mass index and quality of life in adolescents. <i>International Journal of Obesity</i> , 38(10), 1328-1334 1327.
Atlantis, E., & Ball, K. (2008). Association between weight perception and psychological distress. <i>International Journal of Obesity</i> , 32(4), 715-721.
Vogt Yuan, A.S. (2010). Body perceptions, weight control behavior, and changes in adolescents' psychological well-being over time: A longitudinal examination of gender. <i>Journal of Youth and Adolescence</i> , 39(8), 927-939.

102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124

125 **References**

- 126 1. Hochdorn A, Faleiros VP, Camargo BV, Bousfield AB, Wachelke JF, Quintao IP *et*
127 *al.* Obese children are thin in parents' eyes: A psychologically, socially, or culturally
128 driven bias? *Journal of Health Psychology* 2016.
- 129 2. Hansen AR, Duncan DT, Woo Baidal JA, Hill A, Turner SC, Zhang J. An increasing
130 trend in health-care professionals notifying children of unhealthy weight status:
131 NHANES 1999-2014. *Int J Obes* 2016; **40**(10): 1480-1485.
- 132 3. Robinson E, Sutin AR. Parental Perception of Weight Status and Weight Gain Across
133 Childhood. *Pediatrics* 2016; **137**(5).
- 134 4.. Robinson E, Hunger JM, Daly M. Perceived weight status and risk of weight gain
135 across life in US and UK adults. *Int J Obes* 2015.
- 136 5. Almond D, Lee A, Schwartz AE. Impacts of classifying New York City students as
137 overweight. *Proceedings of the National Academy of Sciences* 2016; **113**(13): 3488-
138 3491.
- 139 6. Hunger JM, Major B, Blodorn A, Miller CT. Weighed Down by Stigma: How
140 Weight-Based Social Identity Threat Contributes to Weight Gain and Poor Health.
141 *Social and Personality Psychology Compass* 2015; **9**(6): 255-268.
- 142 7. Roberts RE, Duong HT. Perceived weight, not obesity, increases risk for major
143 depression among adolescents. *Journal of Psychiatric Research* 2013; **47**(8): 1110-
144 1117.
- 145 8. Mamun A, Cramb S, McDermott BM, O'callaghan M, Najman JM, Williams GM.
146 Adolescents' perceived weight associated with depression in young adulthood: A
147 longitudinal study. *Obesity*. 2007; **15**(12):3097-105.
- 148 9. Dombrowski SU, Knittle K, Avenell A, Araujo-Soares V, Sniehotta FF. Long term
149 maintenance of weight loss with non-surgical interventions in obese adults: systematic
150 review and meta-analyses of randomised controlled trials. *BMJ* 2014; **14**;348:g2646.
- 151 10. Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie ML,
152 Gortmaker SL. The global obesity pandemic: shaped by global drivers and local
153 environments. *The Lancet* 2011, 2;**378**(9793):804-14.

154
155
156