

Brief research report

The swimsuit issue: Correlates of body image in a sample of 52,677 heterosexual adults

David A. Frederick^{a,b,c,*}, Letitia Anne Peplau^a, Janet Lever^d

^aDepartment of Psychology, University of California, Los Angeles, United States

^bUCLA Center for Culture, Brain, and Development, United States

^cUCLA Center for Behavior, Evolution, and Culture, United States

^dDepartment of Sociology, California State University, Los Angeles, United States

Received 18 April 2006; received in revised form 1 August 2006; accepted 7 August 2006

Abstract

Past research on adults' body image has typically used small convenience samples, limiting the ability to examine associations of personal characteristics to body satisfaction. This study of 52,677 heterosexual adults ages 18–65 examined associations of body satisfaction to age, height, gender, and body mass index (BMI). Age and height were mostly unrelated to body satisfaction. Consistent with an Objectification Theory perspective, fewer men than women reported being too heavy (41% versus 61%), rated their body as unattractive (11% versus 21%), or avoided wearing a swimsuit in public (16% versus 31%). Men felt better about their bodies than women across most of the weight span, although among underweight individuals, women felt better than men. Slender women (BMIs 14.5–22.49) were more satisfied than most other women (BMIs 22.5–40.5). Among men, underweight and obese men were least satisfied. These findings highlight gender differences in the association of weight to body satisfaction.

© 2006 Elsevier Ltd. All rights reserved.

Keywords: Body image; Body mass index; Age; Height; Adults; Objectification

Introduction

Men and women who have negative attitudes about their body are vulnerable to a wide array of psychological and health issues (Sondhaus, Kurtz, & Strube, 2001), including the development of disordered eating patterns (Cash & Deagle, 1997). The present study of 52,677 heterosexual women and men examined how gender, age, weight, and height relate to body satisfaction in greater detail than was possible in most previous smaller studies, where variation in these characteristics was limited.

Gender differences

To explain body dissatisfaction, Fredrickson and Roberts (1997) developed Objectification Theory. They proposed that Western women learn to assess their own value as a function of how they believe their bodies are viewed by others. From this perspective, women are more likely than men to experience anxiety regarding their appearance, particularly in situations such as wearing a swimsuit where others can evaluate their bodies (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; but see Hebl, King, & Lin, 2004). Consistent with this perspective, we predicted that women would report poorer body image than men (Feingold & Mazzella, 1998). We believe, however, that some men are also concerned with how their appearance is judged by others, even if it is to a lesser degree than among

* Corresponding author at: 1285 Franz Hall, Department of Psychology, 3rd Floor Mailroom, University of California, Los Angeles, CA 90095-1563, United States. Tel.: +1 310 665 0784.

E-mail address: enderflies1@aol.com (D.A. Frederick).

women. We therefore predicted that a significant minority of men would also report body dissatisfaction.

Age

The objectification framework can be extended to understand the association of age to body satisfaction. As individuals age, they move further from the youthful appearance ideals, but objectification pressures may also decline, leading to no age differences in body satisfaction (Tiggemann & Lynch, 2001). We predicted that for both men and women, body and weight satisfaction would be generally similar across age groups (see Cash & Henry, 1995; Tiggemann, 2004).

Weight

In America today, slender women and lean, muscular men are considered most attractive (e.g., Frederick, Fessler, & Haselton, 2005; Spitzer, Henderson, & Zivian, 1999). Thus, heavier men and women may be more concerned than others with how their appearance is evaluated. Further, very slender men, but not women, may experience heightened appearance concerns because they do not possess a body type that corresponds to the “powerful ideal” for men (Frederick, Forbes, Grigorian, & Jarcho, 2006). This would lead to an interaction between gender and body mass index (BMI), with women reporting worse body satisfaction than men across most of the weight spectrum, but better body satisfaction than men among slender individuals where women match the conventional ideals but men do not (Frederick et al., 2006; McCreary & Sadava, 2001).

Height

For men, height can be an especially important symbol of status, prestige, dominance, attractiveness, and masculinity (Ridgeway & Tylka, 2005). Jacobi and Cash (1994) found that 62% of college men (versus 46% of women) wished to be taller. This suggests that men may be concerned with how their height is evaluated by others. We predicted that most tall men would be satisfied with their height but most short men would not.

A different pattern was predicted for women. Shorter-than-average women may feel that they are treated with less respect, while very tall women may experience anxiety over violating gender-role expectations. By signaling dominance through height, tall women defy societal norms (Boyson, Pryor, & Butler, 1999). In the 1960s, doctors who believed that height

was a social disadvantage for women prescribed estrogen to limit the height of girls. This was done primarily for psychological rather than medical reasons despite negative physical side effects (Venn et al., 2004). Growth-suppression treatment is still offered by one in three American pediatric endocrinologists for women projected to be above 5 ft 10 in. or 6 ft 0 in. (Barnard, Scialli, & Bobela, 2002), making it critical to assess tall women’s satisfaction with their height.

Method

A 27-item survey posted on MSNBC.com and Elle.com in February 2003 was completed by visitors volunteering for a “Sex and Body Image Survey”. A computer program prevented multiple survey submissions from a given computer station.

Participants

Most respondents (98%) were from the MSNBC.com website and only 2% were from the Elle.com website. This study describes individuals within the typical ranges of body fat level and health. We examined heterosexual participants ages 18–65, with body mass index (BMI) scores ranging from 14.5 to 40.5, women shorter than 74 in. tall, and men ranging in height from 62 to 78 in. tall. The analyzed sample consisted of 25,714 men and 26,983 women.

Physical characteristics

Age

The mean age was 33.5 ($SD = 10.9$) for women and 36.9 ($SD = 11.8$) for men, $t(52,675) = 34.90$, $p < .001$, $d = 0.30$. Three age groups were created. The percentages of men and women in each category were: 18–34 (47%, 59%), 35–49 (36%, 31%), 50–65 (17%, 10%).

Height

The mean height in inches was 5 ft 10.7 in. ($SD = 2.8$ in.) for men and 5 ft 5.1 in. ($SD = 2.7$ in.) for women, $t(52,675) = 237.44$, $p < .001$, $d = 2.07$. Five height groups were created to facilitate data presentation. For men, these were: Very Short (5 ft 2 in.–5 ft 4 in.; 1%), Short (5 ft 5 in.–5 ft 7 in.; 20%), Average (5 ft 8 in.–5 ft 11 in.; 39%), Tall (6 ft 0 in.–6 ft 3 in.; 36%), and Very Tall (6 ft 4 in.–6 ft 6 in.; 4%). For women, these were: Very Short (5 ft 0 in. or under; 2%), Short (5 ft 1 in.–5 ft 2 in.; 16%), Average (5 ft 3 in.–5 ft 6 in.; 51%), Tall (5 ft 7 in.–5 ft 10 in.; 28%), and Very Tall (5 ft 11 in.–6 ft 2 in.; 3%).

Body Mass Index

BMI is a standard measure used to estimate an individual's level of body fat calculated from weight and height (Strain & Zumoff, 1992; Welborn, Knuiiman, & Vu, 2000), although it can also be affected by other factors (e.g., muscularity). The mean BMI was 26.6 ($SD = 4.1$) for men and 24.2 ($SD = 4.8$) for women, $t(52,675) = 60.42$, $p < .001$, $d = 0.53$. BMI scores were divided into categories endorsed by the National Institute of Health (1998): Underweight (14.5–18.49), Healthy (18.5–24.99), Overweight (25–29.99), and Obese (30–40.5). The percentage of men and women in each were: Underweight (1%, 6%), Healthy (37%, 60%), Overweight (43%, 21%), and Obese (18%, 13%).

We then further subdivided each of these groups by half. Thus, eight categories were created: Lower Underweight (14.5–16.49), Upper Underweight (16.5–18.49), Lower Healthy (18.5–21.74), Upper Healthy (21.75–24.99), Lower Overweight (25–27.49), Upper Overweight (27.5–29.99), Lower Obese (30–34.99), Upper Obese (35–40.49). The percentages of men and women in each category were: Lower Underweight (0.3%, 0.5%), Upper Underweight (0.8%, 5%), Lower Healthy (8%, 31%), Upper Healthy (29%, 30%), Lower Overweight (24%, 12%), Upper Overweight (20%, 8%), Lower Obese (14%, 9%), Upper Obese (4%, 4%).

Measures of body image satisfaction and concern with weight and height

Body image: self-rated attractiveness

“How do you feel about your body?” Responses were given on a four-point Likert scale: “I have a great body” = 4, “I have a good body” = 3, “My body is just okay” = 2, and “I find my body unattractive” = 1. The percentages of men and women responding in each category were: Great (7%, 5%), Good (47%, 36%), Okay (36%, 38%), and Unattractive (11%, 21%). This measure was strongly correlated for both men ($r = .75$, $p < .01$) and women ($r = .75$, $p < .01$) with the widely used seven-item Appearance Evaluation scale of the Multidimensional Body-Self Relations Questionnaire (Cash, 2000) among a separate sample of 153 male and 303 female college students.

Body image: comfort in a swimsuit

“How do you think you look in a swimsuit?” Responses were given on a three-point Likert scale: “Good; I'm proud/not at all embarrassed to be seen in a swimsuit” = 3, “Okay; I don't flaunt it but my self-consciousness doesn't keep me from wearing a swimsuit” = 2, and “So uncomfortable that I avoid wearing

one in public” = 1. The percentages of men and women responding in each category were: Good (25%, 12%), Okay (59%, 57%), and Uncomfortable (16%, 31%). This measure was highly correlated with self-rated attractiveness in the current sample ($r = .62$, $p < .001$ for men; $r = .61$, $p < .001$ for women). In the college sample mentioned earlier, a significant correlation was found between scores on the swimsuit item and scores on the Appearance Evaluation scale ($r = .62$, $p < .01$ for men; $r = .58$, $p < .01$ for women).

Satisfaction with weight

“Are you self-conscious about your weight?” Response options were “Yes, I'm too thin”, “Yes, I'm too heavy”, and “No”.

Satisfaction with height

“How do you feel about your height?” Response options were “I wish I were taller”, “I wish I were shorter”, and “I feel okay about my height”.

Statistical significance and effect sizes

Because our large sample size provided the power to detect even miniscule effects, we set $p < .001$ as the criterion for statistical significance and calculated effect sizes (Cohen's d) for mean comparisons. Cohen (1988) suggested that values of .2, .5, and .8 correspond roughly to small, medium, and large effects. All correlations reported represent Pearson's r .

Results

Gender differences

Table 1 summarizes the main results.¹ As predicted, women scored lower on self-rated attractiveness than did men, $t(52,675) = 32.69$, $p < .001$, although the difference was small, $d = 0.29$. Women were twice as likely as men to say that they were so uncomfortable they would avoid wearing a swimsuit in public, and women scored lower on comfort in a swimsuit than men, $t(52,675) = 50.70$, $p < .001$, $d = 0.44$. Women were also less likely than men to report that they were satisfied with their weight. Overall, women were more

¹ Due to space limitations, statistical tests for some data, particularly data presented as percentages, are not reported. For specific comparisons, $p < .001$ was used as the criterion for determining a significant difference. Statistical information on these comparisons is available from the authors upon request.

Table 1
Male–female differences in body satisfaction across age, BMI, and height categories

	Gender differences		Participants' self ratings				"Are you self-conscious about your weight?"					
	Self-rated attractiveness, <i>d</i>	Comfort in a swimsuit, <i>d</i>	%Unattractive		%Uncomfortable in a swimsuit		%Too Heavy		%Too Thin		%No	
			Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Overall	0.29	0.44	11	21	16	31	41	61	7	2	52	37
Age Group												
18–34	0.28	0.43	10	18	16	28	36	61	12	3	53	36
35–49	0.33	0.47	11	24	16	33	45	62	4	1	51	37
50–65	0.31	0.52	13	27	17	39	46	58	2	1	53	41
BMI Category												
Upper Obese	0.29	0.35	54	69	54	70	94	96	0	0	6	4
Lower Obese	0.74	0.71	27	59	31	62	80	96	0	0	20	4
Upper Overweight	0.87	0.84	12	42	19	51	63	94	1	0	36	6
Lower Overweight	0.91	0.98	5	28	10	41	37	87	2	0	61	13
Upper Healthy	0.66	0.84	2	13	7	26	13	66	10	0	77	34
Lower Healthy	−0.09	0.19	6	5	11	14	4	31	39	2	57	67
Upper Underweight	−0.46	−0.48	13	6	26	12	10	12	52	19	38	69
Lower Underweight	−0.39	−0.19	14	8	19	19	24	11	37	44	39	45
	Gender differences		Participants' self ratings				"How do you feel about your height?"					
	Self-rated attractiveness, <i>d</i>	Comfort in a swimsuit, <i>d</i>	%Unattractive		%Uncomfortable in a swimsuit		%Satisfied		%Wish Taller		%Wish Shorter	
			Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Height Group												
Very Short	0.36	0.44	12	26	21	37	24	33	74	67	2	0
Short	0.29	0.47	11	22	17	33	26	41	74	59	0	0
Average	0.30	0.46	11	21	16	31	53	61	47	38	0	1
Tall	0.25	0.40	10	20	16	28	87	82	12	12	1	6
Very Tall	0.21	0.34	10	19	15	26	90	77	3	4	7	19
Height	–	–	–	–	–	–	61	63	38	34	1	3
Overall												

Note: The first two columns present the effect sizes for differences between men and women's mean body image score (positive effect sizes indicate men reported better body image than women). The percentage "unattractive" and "uncomfortable in a swimsuit" columns represent the individuals with the lowest possible score for the self-rated attractiveness and comfort in a swimsuit measures.

likely than men to report being too heavy, and men were more likely to report being too thin. Men and women were generally similar in their overall satisfaction with their height.

Age

As predicted, the association between age and self-rated body attractiveness was very small, $r = -.06$ for men and $r = -.08$ for women. The correlation between age and comfort in a swimsuit was also small, $r = -.04$ for men and $r = -.08$ for women, all $ps < .001$. However, as shown in Table 1, a greater percentage

of older women than younger women reported being unattractive and feeling uncomfortable wearing a swimsuit in public.

Weight

BMI trends

As predicted, individuals with higher BMI scores reported lower self-rated body attractiveness and comfort in a swimsuit among men ($rs = -.37; -.31$) and women ($rs = -.53; .42$), all $ps < .001$. As shown in Table 1, thinner women were generally more satisfied with their weight than were heavier women

(see Table 1). Thinner women were also generally more satisfied with their overall appearance, although there was a downturn for very underweight women (see Fig. 1). Among men a curvilinear trend was found: compared to average weight men, a greater percentage of heavy and thin were dissatisfied with their weight (see Table 1). This curvilinear pattern is shown graphically in Fig. 1.

Gender differences and BMI

Across BMI categories, women were more likely than men to feel too heavy; men were more likely than women to feel too thin (see Table 1). Gender differences in body satisfaction were dependent on BMI. A 2 (Gender) \times 8 (BMI Category) between subjects ANOVA for self-rated attractiveness found significant main effects of sex, $F(1, 52,659) = 113.84, p < .001$, and of body fat level $F(7, 52,659) = 1593.16, p < .001$. A significant interaction was also found, $F(7, 52,659) = 211.16, p < .001$. This interaction can be seen in Fig. 1: across most of the weight span, men reported better body image than women, but among underweight individuals, women reported better body image than men. See Table 1 for effect sizes for gender differences by BMI category. Results for comfort in a swimsuit (not shown) were very similar to those for self-rated attractiveness.

Height

There was little association between height and self-rated body attractiveness or comfort in a swimsuit with correlations ranging from $r = .00$ to $.05$ for both women and men. Tall and short individuals did, however, differ in their feelings about their own height. As shown in Table 1, the majority of shorter-than-average men

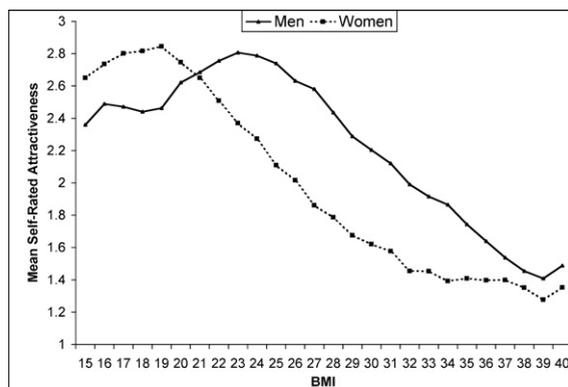


Fig. 1. Association of BMI and self-rated attractiveness for women and men. Note: Higher numbers represent greater self-rated attractiveness (1, Unattractive; 2, Okay; 3, Good; 4, Great). A similar pattern emerged for the comfort in a swimsuit measure (not shown).

wanted to be taller, and most taller-than-average men were satisfied with their height. Among women, most average-height and tall women were satisfied with their height; shorter-than-average women were least likely to report being satisfied with their height. Very tall women fell in between. The percentage of the tallest women (6 ft 1 in. and 6 ft 2 in.) satisfied with their height was less than for other very tall women (5 ft 11 in. and 6 ft 0 in.; data not shown), but they were just as likely to be satisfied as women of average height.

Discussion

Summary of findings

Most participants felt that their body was at least “okay”, were comfortable enough to wear a bathing suit in public, and were satisfied with their height. In contrast, only a third of women and half of men were satisfied with their weight; many felt they were too heavy. Although this sample was large and diverse, conclusions are limited because the survey relied on single-item measures, recruited Internet users who may differ from the general public, and did not assess participants’ ethnicity or social class.

Gender differences

Consistent with Objectification Theory (Fredrickson & Roberts, 1997), women were less satisfied with their bodies than men and more concerned than men about a situation where others could evaluate their bodies, specifically, wearing a swimsuit in public. Despite these consistent gender differences, it is important to note that some men did feel unattractive and were uncomfortable wearing a bathing suit in public, suggesting that objectification concerns are relevant to men.

Age

In general, age was unrelated to body satisfaction, and gender differences were consistent across age groups. However, among women only, a relatively higher percentage of older individuals reported body dissatisfaction, which may suggest that some women are vulnerable to decreased body satisfaction as they age. This issue warrants further empirical investigation.

Weight

Individuals who deviated from the conventional ideals – thin men, heavy men, and heavy women – were most likely to express dissatisfaction with their appearance and discomfort with wearing a swimsuit in public. Interestingly, the traditional gender difference

reversed among thin individuals, with women feeling better than men, indicating that gender differences in body satisfaction are dependent on BMI.

Height

Men who were average or shorter-than-average were less satisfied with their height than taller men. Short women were least likely to be satisfied with their height. Importantly, approximately four-fifths of tall and very tall women were satisfied with their height, suggesting that public concerns about women's height and medical interventions to prevent girls from becoming tall may be unwarranted. Indeed, there were no height ranges where taller-than-average women were more dissatisfied with their height than average and shorter-than-average women. Future research should examine women's height concerns in more detail before life-altering medical interventions are used to intentionally suppress growth in girls.

Practical implications

The increasing obesity of the American public and the strong link between body fat level and body satisfaction found in the present study suggest that body dissatisfaction and associated psychological problems may increase in the coming years. On a societal level, it is important to discourage the promotion of unattainable body ideals, as well as the harmful behaviors that follow from attempts to attain these standards. In parallel, we would be remiss not to suggest stepped-up efforts to raise public awareness of the benefits of healthier eating styles and increased exercise, which may help to combat an increase in obesity as well in body image dissatisfaction and associated psychological distress.

Acknowledgements

We thank Elle magazine for access to the data from the ELLE/MSNBC.com Sex and Body Image Survey. The authors are grateful to the UCLA Graduate Division, the Center for Culture, Brain, and Development, and the Departments of Psychology and Communication Studies for providing financial support to the first author. We are also grateful for support from the National Institute of Health to the first author, Grant # 1F31MH072384-01. Thanks to Sheila Allameh, Anna Berezovskaya, Lisa Burklund, Jeremy Casey, David Creswell, Martie Haselton, Johanna Jarcho, Kelsey Laird, Kathleen Lambert, Henry Madrid, Traci Mann, Leila Sadeghi-Azar, Janet Tomiyama, Andrew Ward, and Erika Westling for their assistance with this

database and manuscript. We are also grateful to Carol Edwards, who helped to create the database.

References

- Barnard, N. D., Scialli, A. R., & Bobela, S. (2002). The current use of estrogens for growth-suppressant therapy in adolescent girls. *Journal of Pediatric and Adolescent Gynecology*, *15*, 23–26.
- Boyson, A. R., Pryor, B., & Butler, J. (1999). Height as power in women. *North American Journal of Psychology*, *1*, 109–114.
- Cash, T. F. (2000). *The multidimensional body-self relations questionnaire users' manual (3rd Rev.)*. Available at: <http://www.body-images.com>.
- Cash, T. F., & Deagle, E. A. (1997). The nature and extent of body-image disturbances in anorexia nervosa and bulimia nervosa: A meta-analysis. *International Journal of Eating Disorders*, *22*, 107–125.
- Cash, T. F., & Henry, P. E. (1995). Women's body images: The results of a national survey in the U.S.A.. *Sex Roles*, *33*, 19–28.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Ellis, L. (1994). The high and mighty among man and beast: How universal is the relationship between height (or body size) and social status? In Ellis, L. (Ed.). *Social stratification and socioeconomic inequality: Reproductive and interpersonal aspects of dominance and status*. Vol. 2 (pp.93–111). Westport, CT: Praeger.
- Feingold, A., & Mazzella, R. (1998). Gender differences in body image are increasing. *Psychological Science*, *9*, 190–195.
- Frederick, D. A., Fessler, D. M. T., & Haselton, M. G. (2005). Do representations of male muscularity differ in men's and women's magazines? *Body Image: An International Journal of Research*, *2*, 81–86.
- Frederick, D. A., Forbes, G. B., Grigorian, K., & Jarcho, J. M. (2006). *The UCLA Body Project I: Predictors of appearance evaluation and surveillance among 2206 White, Asian, and Hispanic men and women*. Unpublished manuscript.
- Fredrickson, B. L., & Roberts, T. A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, *21*, 206–273.
- Fredrickson, B. L., Roberts, T. A., Noll, S. M., Quinn, D. M., & Twenge, J. M. (1998). That swimsuit becomes you: Sex differences in self-objectification, restrained eating, and math performance. *Journal of Personality and Social Psychology*, *75*, 269–284.
- Hebl, M. R., King, E. B., & Lin, J. (2004). The swimsuit becomes you all: Ethnicity, gender, and vulnerability to self-objectification. *Personality and Social Psychology Bulletin*, *30*, 1322–1331.
- Helgeson, V. S. (1994). Prototypes and dimensions of masculinity and femininity. *Sex Roles*, *31*, 653–682.
- Jacobi, L., & Cash, T. F. (1994). In pursuit of the perfect appearance: Discrepancies among self-ideal percepts of multiple physical attributes. *Journal of Applied Social Psychology*, *24*, 379–396.
- McCreary, D. R., & Sadava, S. W. (2001). Gender differences in relationships among perceived attractiveness, life satisfaction, and health in adults as a function of body mass index and perceived weight. *Psychology of Men and Masculinity*, *2*, 108–116.
- National Institute of Health (1998). *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults*. September 1998 (No. 98-4083). Bethesda, MD: Author.
- Ridgeway, R. T., & Tylka, T. L. (2005). College men's perceptions of ideal body composition and shape. *Journal of Men and Masculinity*, *6*, 209–220.

- Sondhaus, E. L., Kurtz, R. M., & Strube, M. J. (2001). Body attitude, gender, and self-concept: A 30-year perspective. *Journal of Psychology: Interdisciplinary and Applied*, *135*, 413–429.
- Spitzer, B. A., Henderson, K. A., & Zivian, M. T. (1999). Gender differences in population versus media body sizes: A comparison over four decades. *Sex Roles*, *40*, 545–565.
- Strain, G. W., & Zumoff, B. (1992). The relationship of weight–height indices of obesity to body fat content. *Journal of the American College of Nutrition*, *11*, 715–718.
- Tiggemann, M. (2004). Body image across the adult life span: Stability and change. *Body Image: An International Journal of Research*, *1*, 29–41.
- Tiggemann, M., & Lynch, J. E. (2001). Body image across the lifespan in adult women: The role of self-objectification. *Developmental Psychology*, *37*, 243–253.
- Venn, A., Bruinsma, F., Werther, G., Pyett, P., Baird, D., Jones, P., et al. (2004). Oestrogen treatment to reduce the adult height of tall girls: Long-term effects on fertility. *Lancet*, *364*, 1513–1518.
- Welborn, T. A., Knuiman, M. W., & Vu, H. T. (2000). Body mass index and alternative indices of obesity in relation to height, triceps skinfold and subsequent mortality: The Busselton health study. *International Journal of Obesity Metabolic Disorders*, *24*, 108–115.