Thinness and body shape of Playboy centerfolds from 1978 to 1998

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SHORT COMMUNICATION

Thinness and body shape of *Playboy* centerfolds from 1978 to 1998

PT Katzmarzyk[1]* and C Davis[1]

[1]*School of Kinesiology and Health Science, York University, North York, Ontario, Canada*

OBJECTIVE: Changes in the body weight and shape of *Playboy* centerfolds over the past two decades (1978–1998) were examined.
METHODS: The body mass index (BMI) and waist-to-hip circumference ratio (WHR) were obtained from measurements reported by 240 centerfolds (ages 19–35 y).
RESULTS: The 20-y averages (mean ± s.d.) were 18.1 ± 0.8 kg/m^2 for BMI and 0.68 ± 0.03 for WHR, and there has been no appreciable change in either BMI or WHR in centerfolds over the past 20 y. Based on current recommendations for the classification of underweight (BMI < 18.5 kg/m^2), 70% of the centerfolds were underweight. Further, 77.5% of the centerfolds were $< 85\%$ of their ideal body weight.
CONCLUSION: Given the perception of *Playboy* centerfolds as culturally 'ideal' women, the notion that 70% of them are underweight highlights the social pressures on women to be thin and helps to explain the high levels of body dissatisfaction and disordered eating among women.
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Keywords: underweight; disordered eating; body mass index; waist-to-hip ratio; curvaceousness

Introduction

The current epidemic of obesity and related metabolic disorders in North America has led to increased public awareness of the health risks associated with excess body fat.[1,2] This knowledge, coupled with our cultural idealization of the ultra-slender female body shape, partly explains the increasing prevalence of dieting and disordered eating in women. Data from the NHLBI Growth and Health Study in the United States indicate that 40% of girls 9 and 10 y of age are trying to lose weight.[3] These statistics are particularly disconcerting since it may be the wrong people who are dieting. Results from NHANES III in the United States suggest that approximately half of girls 12–16 y of age who considered themselves overweight were in fact normal weight, based on their body mass index (BMI).[4] Similarly, in a recent survey of college students, 50% of the young women who were underweight on the basis of their BMI classifed themselves in the overweight category.[5]

Many believe that the ubiquitous images of bodily perfection in the media serve as the prime source of the discontent that many young women have with their bodies. For example, 69% of school age girls indicated that magazine pictures influence their idea of the perfect body shape, while 47% of the girls also reported wanting to lose weight because of these pictures.[6] The effects of media exposure have also been demonstrated experimentally. After viewing images of attractive models, most young women reported an increase in weight concerns, the exception being those who were initially very satisfied with their bodies.[7]

The way in which fat is distributed, especially over the waist and hips, is also a powerful determinant of attractiveness in woman. A number of studies by Singh and colleagues[8–11] have shown that both men and women regard female figures with a low (0.7) waist-to-hip ratio (WHR) as more attractive and healthier than those with a higher WHR who have the same, or even lower, body weight.

Garner and colleagues[12] demonstrated that, although the average weight of woman increased in the years between 1950 and 1978, there was a decrease in the average weights of *Playboy* centerfolds, and a trend towards a less curvaceous

***Correspondence: PT Katzmarzyk, School of Kinesiology and Health Science, York University, 4700 Keele St, North York, Ontario, Canada, M3J 1P3.**
E-mail: katzmarz@yorku.ca
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body form. The latter finding was confirmed in a study that examined the curvaceousness of female models and found a decline from 1950 to 1980.[13] A later study extended the *Playboy* data and showed that the body weights of centerfolds had plateaued over the years 1979–1988, although Miss America contestants had decreased in body size over the same time frame.[14]

The purpose of the present study was to extend the *Playboy* data for the past 20 y (1978–1998) and to compare with previous reports. The BMI of this sample was also compared with present criteria for the classification of underweight.

Methods and results

The ages, heights, weights, waist and hip circumferences of 240 *Playboy* centerfolds from 1978 to 1998 were obtained from their published 'playmate datasheets' (Table 1). The BMI (weight in kg/height in m^2) and WHR were calculated. The mean BMI of the sample was 18.1 kg/m^2 and the mean WHR was 0.68. The prevalence of underweight, based on the recommended cut-off (BMI < 18.5 kg/m^2) of the WHO[1] and the US NIH[2], was 70%. Similarly, 77.5% of the centerfolds had body weights that were more than 15% below their ideal body weight, based on the Metropolitan Height and Weight Tables.[15] There were no trends in either the BMI or WHR over the last 20 y (Figure 1), and correlations between date of publication and BMI ($r = 0.10$, $P = 0.13$) and WHR ($r = 0.11$, $P = 0.11$) were low and not significant. Further, partial correlations, controlling for the age of the 'playmate', between date of publication and BMI ($r = 0.10$, $P = 0.13$) and WHR ($r = 0.10$, $P = 0.12$) were also low and not significant.

Discussion

Wiseman *et al*[14] reported that 69% of playmates from 1978 to 1988 were more than 15% below their expected weights based on their age and height. The present study extends these findings for the years 1978–1998, in which 77.5% of the playmates were more than 15% below their expected weights, and 70% were considered 'underweight' based on their BMI. A recent study of a single year of *Playboy* (February 1994–February 1995) from South Africa also indicated that 72% of playmates had BMI values below 18 kg/m^2.[16] These prevalence statistics are in direct contrast to those for the general population of women in North America. For example, recent data from NHANES III in the United States (1988–1994) indicate that 3.6% of women 20–29 y of age have a BMI ≤ 18 kg/m^2, while 33.1% have a BMI ≥ 25 kg/m^2.[17] Given that the prevalence of obesity among women has been increasing over time,[18] the gap between the male cultural 'ideal' of women, as exemplified in *Playboy*, and the actual weight status of the female population appears to be widening.

Table 1 Descriptive characteristics of 240 *Playboy* centerfolds, 1978–1998

	Mean	*s.d.*	*Minimum*	*Maximum*
Age (y)	23	3	19	35
Weight (kg)	51.8	4.0	42.7	63.6
Height (cm)	169.4	5.3	154.0	180.0
BMI (kg/m^2)	18.1	0.8	15.4	20.5
Waist circumference (cm)	59.6	2.9	50.8	68.6
Hip circumference (cm)	87.6	3.1	80.0	96.5
Waist-to-hip ratio (cm/cm)	0.68	0.03	0.59	0.78

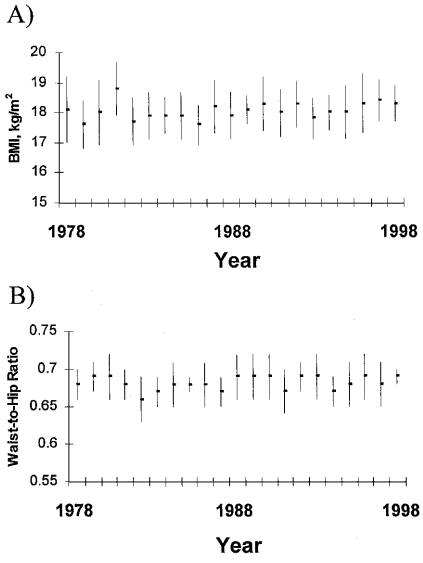

Figure 1 Mean (A) body mass index and (B) waist-to-hip ratio in *Playboy* centerfolds from 1978 to 1998. Error bars indicate 1 standard deviation.

Since the information provided by the playmates on their published datasheets is self-reported, it is possible that body weights and measurements are not strictly accurate. Both the mis-reporting of heights and weights, and the inaccuracy in the sites of measurement for the waist and hip circumference are problematic, and no indication of a standardized measurement protocol is provided. In any event, it is the *perception* of low body weight as the ideal that is of greatest concern.

There are differences in how male and female 'ideals' of body size and shape have changed over time.[19] Magazines targeted towards males, such as *Playboy*, are often used as an index of beauty among males, while *Vogue* or *Ladies Home Journal* are often used to capture the female ideal. Barber has reported that male and female ideals of female beauty are similar; however, they may change differently over time and this has implications for changes in standards of attractiveness, mate selection and perhaps ultimately on the prevalence of eating disorders.[19]

It is our opinion that the women in *Playboy* do not appear to be clinically underweight and malnourished, rather they epitomize the male society's concept of health and beauty. The possible under-reporting of body weight by playmates

may have important health consequences. For example, the portrayal of healthy playmates as having below normal body weights may be misleading, and may be impacting body-image perceptions among young women, as the evidence indicates that body dissatisfaction and disordered eating among young women is linked with images they view in popular magazines. Although the risk of obesity-related diseases is quite low in underweight individuals, they are at increased risk of other clinical disorders, as well as premature mortality,[20] which makes the increasing incidence of disordered eating an important public health issue.

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