Temporal Changes in Anthropometric Measurements of Idealized Females and Young Women In General

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ABSTRACT. This study examined the temporal anthropometric changes in idealized female body images in the media (i.e., Playboy magazine Playmates of the Year, Miss America Pageant winners, and fashion models) and young women in general across eight decades. Overall, all anthropometric measures differed significantly over time. BMI for all women in the idealized groups tended to decline significantly over time, while the BMI for Young Women increased significantly. Models tended to have the smallest bust and hips, Playmates the largest bust, and young women in general the largest waist and hips. The general trend for all groups was to move from a less curvaceous body shape in the early part of the twentieth century to a more curvaceous shape at mid-century and returning to a less curvaceous shape at the end of the century. Idealized women have a body size unlike that of Young Women and the chasm between the media-defined ideal and reality is continuing to diverge. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail*

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Journal of Women & Health, Vol. 41(2) 2005
Available online at http://www.haworthpress.com/web/WH

Digital Object Identifier: 10.1300/J013v41n02_02

KEYWORDS. Body image, idealized beauty, women, media

The fear of obesity and the high premium American culture places on thinness has made many people, particularly females, extremely concerned with their body weight and shape (Groesz, Levine, and Murnen, 2002; Spitzer, Henderson and Zivian, 1999). Negative body image perceptions coupled with an internalized ultraslim idealized body image is learned so early that elementary school children feel being obese is worse than being handicapped (Latner and Stunkard, 2003; Richardson, et al., 1961). A striking number of girls as young as eight and nine report they have voluntarily restricted food intake because they want to be thinner and fear fatness (Neumark-Sztainer and Hannan, 2000). By adolescence, 60 percent or more of American girls report that they have gone on a weight loss diet (Daee, et al., 2002). Among adult women, over half report that they are dissatisfied with their physical appearance (Garner, 1997).

The unrelenting societal pressure to achieve the idealized lean body often convinces people who are at healthy weights to see themselves as fat. For example, among women, nearly half of those who are at a healthy weight believe they are overweight (Bureau of the Census, 1999). At any one time, 40 percent of women are attempting to lose weight (National Institutes of Health [NIH], 1992; Serdula, et al., 1999)–a substantial proportion of those dieting are actually at or below a healthy weight (Institute of Medicine, 1998; Lustig, 1991). Being a desirable weight is valued so highly that about one-quarter of women say they would sacrifice more than 3 years of their lives to be the weight they want (Garner, 1993). In addition, virtually all formerly obese individuals who underwent gastric restrictive surgery said they would rather become blind or deaf, lose a leg, or be disabled than be obese again. They also reported that they would rather be a healthy weight than be morbidly obese multi-millionaires (Rand and MacGregor, 1991).

The media play an important role in defining the 'body beautiful' (Cameron and Ferarro, 2004). However, its definition causes distress in significant numbers of females. For instance, more than half of women report that the mismatch between the media idealized body image and

their actual body shapes and sizes makes them feel insecure about their weight and causes dissatisfaction that compels them to want to lose weight and strive for the media ideal (Cameron, 2004; Garner, 1997). Girls younger than 11 years also report comparing themselves to media images and that "most of the time it makes us feel bad because we don't match up" (Labi, 2001, p. 67) or feel obese (Stice, Spangler and Agras, 1999). These comparisons can dramatically and negatively affect the mental and physical health of females (Stephens, Hill and Hanson, 1994), triggering dieting, disordered eating symptoms, and an extreme drive for thinness (Thomsen, Weber, and Brown, 2001). In fact, Harvard researchers noted a sharp increase in eating disorders among teen-age girls in Fiji in 1998, three years after the introduction of television there (Becker, et al., 2002). Many health professionals who specialize in the treatment of eating disorders agree that chronic, excessive dieting is often a result of a strong cultural expectation of thinness depicted in media images touting extreme slenderness coupled with advertisements promising that this 'ideal' look is attainable by all (Austin, 2001; Stephens, et al., 1994).

Although media images may define beauty, little research has been conducted in recent years to describe either the idealized body image defined by mass media or that of women in the broader population. In addition, little attention has focused on whether idealized body images have varied over time. Thus, the purpose of this study was to extend and expand previous research (Katzmarzyk and Davis, 2001; Morris, Cooper and Cooper, 1989; Owen and Laurel-Seller, 2000; Voracek and Fisher, 2002) by examining the temporal anthropometric changes in idealized female body image in the media and young women in general across eight decades.

METHODS

Anthropometric measurements (i.e., height, weight, and bust, waist, and hip circumferences) were obtained for Playboy magazine centerfold models (N = 49), Miss America Pageant winners (N = 76), fashion models (N = 631), and young women in general (N = 17108) (see Table 1). The Playboy centerfold models included were those selected as "Playmate of the Year." The first edition of Playboy magazine was December, 1953 and the "Playmate of the Year" designation appeared once in 1957 and again in 1960, after which it has continued without interruption. For each year lacking a "Playmate of the Year," the authors

TABLE 1. Sample Size of Miss America Pageant Winners, Playboy Playmates of the Year, Fashion Models, and Young Women in General.

	Decade								
	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s[a]	Total
	N	N	N	N	N	N	N	N	N
Playmates[b]				6	10	10	10	13	49
Miss Americas	7	6	10	9	10	10	10c	14[d]	76
Models	73	218	206	20	29	16	24	45	631
Young Women	268[ef]	1661[g]	7563[h]	852[i]	1357[j]	1331[k]	2208[l]	1867[m]	17,108

[a] Miss Americas and Playmates from 2000 to 2002 were combined with data from the 1990s.
[b] Playmates did not begin until the 1950s.
[c] N = 7 for bust, waist, and hips.
[d] N = 12 for weight and BMI; N = 0 for bust, waist, and hips.
[e] N = 269 for weight, N = 229 for bust, N = 221 for waist, N = 223 for hips.
[f] Reference Bowles, 1932.
[g] Reference O'Brien and Shelton, 1941.
[h] Reference NASA Scientific and Technical Information Office, 1978.
[i] References Daniels, Meyers, and Worrall, 1953.
[j] Reference Clauser, et al., 1972.
[k] Reference McConville, Tebbetts, and Churchill, 1979.
[l] Gordon, et al., 1989.
[m] Reference Centers for Disease Control and Prevention, National Center for Health Statistics, 2001; Kuczmarski, et al, 1997.

selected a representative for that year by first identifying the centerfolds that had complete anthropometric data. For 1954, one centerfold met the eligibility requirements. Of the two centerfolds meeting the eligibility requirements for 1955 and 1956, those who appeared most often (i.e., twice) were selected. One of the three centerfolds meeting the eligibility requirements in 1958 was randomly selected. Anthropometric data published in Playboy magazine or the magazine's website were used in this study.

The Miss America Pageant was held every year from 1922 to 2002, except 1927 to 1933. Anthropometric data for Miss America Pageant Winners were obtained largely from archives at the Atlantic City Press (undated). Data were incomplete for some years and whenever possible, an alternate source was used. Nonetheless, weight data for 2 years (i.e., 1996-1997) could not be located. Bust, waist, and hip data from 1987 onwards were unavailable, thus criteria and methods developed by others (Silverstein, et al., 1986) were used to calculate waist-to-bust (WBR) and waist-to-hip (WHR) ratios using full length photographs of

the winners clad in form fitting clothes. Briefly, two raters independently measured the width of the bust, waist, and hip and ratios between these measurements were computed (interrater reliability = 0.94).

Fashion models included in this study were those who worked in 'high fashion;' that is, those who were featured primarily in top fashion magazines (i.e., Vogue, Elle) or at haute couture fashion shows. Data for these women were obtained primarily from catalogs of models published by leading modeling agencies (e.g., Powers, Ford) and supplemented with data from numerous other sources. Only Models for which complete data were available were included.

Measurements for Young Women were derived from large-scale anthropometric studies conducted by others (see Table 1). The data selected for Young Women were for women in the United States who had mean ages (i.e., age 17 to 28) comparable to the Miss Americas, Playmates, and Models. Data from the 1920s were derived from measurements of college women (Bowles, 1932). Measurements for the 1930s were of women in seven states and were originally used to generate standardized clothing sizes (O'Brien and Shelton, 1941). Data from the 1940s through the 1980s were derived from measurements of U.S. military personnel that were used to design clothing and equipment (Clauser, et al., 1972; Daniels, Meyers, and Worrall, 1953; Gordon, et al., 1989; McConville, Tebbetts, and Churchill, 1979; NASA Scientific and Technical Information Office, 1978). Only height, weight, and BMI were available for the 1990s and these data were gathered as part of the National Health and Examination Survey (Centers for Disease Control and Prevention, 2001; Kuczmarski, et al., 1997).

Data from each of the four groups were analyzed separately, using one-way analysis of variance, to determine the changes in anthropometric measurements that had occurred in the group over the eight decades studied. The Neuman-Keuls test for pairwise comparisons was used to evaluate differences in each group's mean anthropometric measurements over time.

RESULTS

Table 2 reports mean anthropometric measurements for each group studied for each decade. *Height, Weight, and BMI*. The height of Playmates and Models steadily and significantly increased between the earliest and latest measurements, whereas the height of Miss Americas and Young Women remained unchanged. In contrast to the other two

TABLE 2. Significant Changes Over Time in Mean Measurements of Miss America Pageant Winners, Playboy Playmates of the Year, Fashion Models, and Young Women in General

	Decade		
	1920s	**1930s**	**1940s**
	Mean ± SD[a]	**Mean ± SD**	**Mean ± SD**
Height (inches)			
Playmates[b]			
Miss Americas	64.9 ± 1.9	66.3 ± 0.9	67.3 ± 2.6
Models	67.1 ± 1.6ABC	67.5 ± 1.8DEF	68.0 ± 1.6GH
Young Women	64.9 ± 2.2	63.6[d]	63.9 ± 2.4
Weight (lbs)			
Playmates[b]			
Miss Americas	125.9 ± 11.9	120.0 ± 6.3	128.0 ± 8.0
Models	121.6 ± 8.3AB	118.7 ± 9.1C	116.4 ± 6.8DE
Young Women	125.3 ± 16.6	123.0[d]ABCD	131.6 ± 19.9AEF
BMI			
Playmates[b]			
Miss Americas	21.0 ± 1.2ABCDEFG	19.3 ± 0.6A	19.9 ± 1.3BHI
Models	19.0 ± 1.0ABCDEF	18.4 ± 1.0A	17.8 ± 0.9B
Young Women[g]	21.0	21.4	22.7
Bust (inches)			
Playmates[b]			
Miss Americas	33.7 ± 1.8A	33.6 ± 1.6BC	35.1 ± 1.1
Models	33.3 ± 1.3ABCD	32.9 ± 1.4EFGHIJ	33.8 ± 1.0EKLMN
Young Women	33.4 ± 1.9	33.9[d]	35.0 ± 3.0
Waist (inches)			
Playmates[b]			
Miss Americas	25.4 ± 0.7ABCD	25.0 ± 1.4	24.4 ± 1.5
Models	26.0 ± 1.5ABCDEF	25.6 ± 1.3GHIJKL	24.0 ± 1.0AGMN
Young Women	25.7 ± 2.0	26.4[d]	26.4 ± 2.5
Hips (inches)			
Playmates[b]			
Miss Americas	34.7 ± 1.9	35.6 ± 1.3	35.4 ± 1.0
Models	36.1 ± 1.4ABCDEFG	35.5 ± 1.3AHI	34.3 ± 0.9BHJ
Young Women	36.8 ± 2.6	37.44[d]	37.5 ± 2.6
Waist:Bust Ratio			
Playmates[b]			
Miss Americas	0.76 ± 0.04ABCDEF	0.75 ± 0.06GHIJKL	0.69 ± 0.03AG
Models	0.78 ± 0.04ABCDEF	0.78 ± 0.03GHIJKL	0.71 ± 0.02AGMNO
Young Women	0.77	0.78	0.75
Waist:Hips Ratio			
Playmatesb			
Miss Americas	0.73 ± 0.02ABCDEFG	0.70 ± 0.03AHIJ	0.69 ± 0.03BK
Models	0.72 ± 0.04ABCDEF	0.72 ± 0.03GHIJKL	0.70 ± 0.02AGMN
Young Women	0.91	0.91	0.94
Curvaceousness			
Playmatesb			
Miss Americas	4.1 ± 0.1ABC	4.2 ± 0.2DEF	4.3 ± 0.3G
Models	4.0 ± 0.2ABCDEf	4.0 ± 0.2GHIJKL	4.2 ± 0.2AGMN
Young Women	4.2	4.2	4.3

[a] SD = Standard Deviation
[b] Playboy Playmates of the Year designation did not begin until the 1950s.
[c] Means in the same row that are followed by the same uppercase letter differ significantly ($p \leq 0.05$). For example, the height of Playmates in the 1950s was significantly lower than the height of Playmates in the 1970s.
[d] No standard deviation reported.
[e] Standard Error.
[f] As suggested by other researchers, 0.9 kg was subtracted from the body weights because participants wore heavier clothing than in later studies (Flegal, et al, 1997).
[g] The overall F-test indicates that significant differences exist for BMI, however it is not possible to compare each decade because SD are not available for each BMI mean. At a minimum, the largest mean (Decade 8) is significantly different than the smallest one (Decade 1).
[h] Data for bust, waist, and hips were not collected for Miss Americas after 1986.
[i] Data not available.
[j] Ratios for Miss Americas after 1986 were calculated from measurements taken of full-length photographs of Miss Americas in form fitting clothing.

1950s Mean ± SD	1960s Mean ± SD	1970s Mean ± SD	1980s Mean ± SD	1990s Mean ± SD
64.7 ± 1.5[c]ABC	64.7 ± 1.6DEF	66.3 ± 1.3ADGH	68.7 ± 1.7BEG	67.7 ± 2.5CFH
66.9 ± 1.9	66.5 ± 1.1	67.3 ± 1.9	67.2 ± 2.2	66.5 ± 2.8
67.4 ± 1.8IJK	67.8 ± 1.4LM	68.7 ± 1.8ADI	69.4 ± 1.2BEGIL	69.1 ± 2.6CFHKM
64.1 ± 2.3	64.0 ± 2.3	64.2 ± 2.6	64.2 ± 2.5	64.1 ± 0.1[e]
115.0 ± 5.1	115.2 ± 8.2	116.1 ± 7.7	119.7 ± 8.4	121.2 ± 10.6
125.1 ± 9.2	120.8 ± 6.3	117.4 ± 7.4	116.7 ± 7.8	120.1 ± 10.7
115.1 ± 8.0AFG	115.9 ± 9.5BHI	124.5 ± 10.6CDFH	123.0 ± 9.7EGI	120.2 ± 9.6
123.3 ± 14.5EGHI	125.6 ± 15.4[f]F	132.2 ± 19.2BGJ	136.6 ± 18.3CHJK	141.7 ± 1.3[e]DIK
19.4 ± 0.5a	19.4 ± 0.7B	18.6 ± 1.0L	17.9 ± 0.7AB	18.6 ± 0.6
19.6 ± 0.7CJK	19.2 ± 0.6D	18.3 ± 0.3EH	18.2 ± 0.7FIJ	19.2 ± 0.7GK
17.9 ± 1.4C	17.7 ± 1.2D	18.6 ± 1.7GH	18.0 ± 1.4EG	17.8 ± 1.8FH
21.2	21.6	22.6	23.4	24.3
35.5 ± 0.8	36.3 ± 1.3	35.7 ± 1.3	35.6 ± 0.8	35.0 ± 1.6 [h]
35.2 ± 0.8	35.8 ± 0.5AB	35.4 ± 0.8C	34.1 ± 1.6[h]	
34.8 ± 1.9AFKO	33.7 ± 1.3GOPQR	34.8 ± 1.1BHLP	34.6 ± 1.0CIMQ	34.5 ± 1.1DJNR [i]
33.7 ± 2.0	35.0 ± 2.0	34.7 ± 2.5	35.7 ± 2.5	
23.8 ± 0.8A	22.2 ± 1.5ABCD	23.7 ± 1.1B	23.5 ± 1.1C	23.9 ± 1.0D [h]
23.3 ± 1.0A	23.4 ± 0.9B	23.4 ± 1.1C	23.4 ± 1.1[h]D	
22.7 ± 1.6BHMOPQR	23.2 ± 1.3CINOSTU	24.1 ± 0.8DJPS	23.8 ± 0.9AKQT	24.1 ± 0.7FLRU [i]
25.9 ± 1.6	26.3 ± 2.0	28.0 ± 2.7	28.6 ± 2.5	
34.8 ± 1.0	35.7 ± 0.9	35.3 ± 0.8	34.9 ± 1.3	35.0 ± 1.5 [h]
35.4 ± 0.5	36.0 ± 1.3	35.3 ± 0.8	35.2 ± 0.7[h]	
34.7 ± 1.5C	34.5 ± 1.3DI	35.2 ± 0.9EJ	34.8 ± 0.7F	34.8 ± 0.8G [i]
36.9 ± 2.1	37.3 ± 2.3	37.6 ± 2.5	38. 7 ± 2.4	
0.67 ± 0.02A	0.61 ± 0.05ABCD	0.66 ± 0.03C	0.66 ± 0.03B	0.68 ± 0.03D
0.66 ± 0.02BH	0.65 ± 0.03CI	0.66 ± 0.03DJ	0.69 ± 0.03[hj]EK	0.70 ± 0.04[hj]FL
0.65 ± 0.06BHMPQRS	0.69 ± 0.03CINPTUV	0.69 ± 0.03DJQT	0.69 ± 0.03EKORU	0.70 ± 0.03FLSV
0.77	0.75	0.81	0.80	[i]
0.68 ± 0.02A	0.62 ± 0.03ABCD	0.67 ± 0.02B	0.67 ± 0.02C	0.68 ± 0.02D
0.66 ± 0.02CH	0.65 ± 0.04DIK	0.66 ± 0.03EJ	0.67 ± 0.03[hj]F	0.69 ± 0.03[hj]G
0.65 ± 0.05BHMOPQR	0.67 ± 0.03CINOS	0.68 ± 0.03DJP	0.68 ± 0.03EKQ	0.69 ± 0.02FLRS
0.91	0.94	0.92	0.92	[i]
4.6 ± 0.2A	5.0 ± 0.4ABCD	4.5 ± 0.2B	4.4 ± 0.2C	4.3 ± 0.2D
4.5 ± 0.2ADH	4.6 ± 0.3BEGIJ	4.5 ± 0.2CFK	4.3 ± 0.2[h]I	4.2 ± 0.2[h]HJK
4.6 ± 0.5BHMOPQR	4.3 ± 0.2CINOS	4.2 ± 0.2DJP	4.2 ± 0.1EKQ	4.2 ± 0.2FLRS
4.3	4.3	4.0	4.1	[i]

groups, Models and Young Women experienced significant time-related changes in body weight. A comparison of Miss Americas and Young Women indicates that these groups had comparable mean weights (i.e., within 5 pounds or less of each other) until the 1970s, at which

time they diverged: Miss America weights tended to decline, while Young Women weights rose.

A Body Mass Index (BMI) was calculated for each Playmate, Miss America, and Model (BMI = body weight in kilograms/height in meters^2). A mean BMI was calculated for Young Women using mean height and mean weight for each decade. By its very nature, BMI provides a means for controlling for simultaneous changes in body weight and height over time. ANOVA revealed that the BMI for all of the women in the idealized beauty groups tended to decline significantly over time, (except for the 1990s, when it increased slightly) while the BMI for Young Women increased significantly. Among Miss Americas, height increased while weight decreased resulting in a time-dependent significant decline in BMI (Table 3). Playmates experienced a similar decline in BMI as a result of increasing height and decreasing weight. BMI in Models decreased significantly over time because their height more than weight.

Further examination of the BMIs for Miss Americas, Playmates, and Models indicated that the vast majority of women in these groups were at the very low end of what is considered normal weight. Comparable data were not available for Young Women. Of those who were underweight, 26, 39, and 66 percent of the Miss Americas, Playmates, and Models, respectively, had BMIs that dipped below the World Health Organization (WHO) and NIH criterion for underweight (BMI < 18.5) (WHO, 1998; NIH, 1998). A few in the Miss Americas and Playmate groups and more than one-quarter of the Models had mean BMIs so low that they met the American Psychiatric Association's criterion for Anorexia Nervosa (BMI < 17.5) (APA, 2000). *Bust, Waist, and Hip Measurements*. Models tended to have the smallest bust and hip measurements through the decades. Playmates tended to have the largest bust measurement. Young Women tended to have the largest waist and hip measurements. Bust and hip circumferences for Playmates remained steady across the decades; their mean waistline circumference did change significantly. Miss America bust circumferences increased significantly, peaking in the 1960s as did this measurement for Playmates. The waist circumference of Miss Americas tended to be significantly smaller after the 1950s while hip measurements remained unchanged. Models' bustline also tended to increase significantly in the 1920s and 1930s while waist and hips declined significantly in the 1970s through the 1990s.

To describe body shape, WBR and WHR were calculated by dividing waist circumference by bust circumference and dividing waist circum-

TABLE 3. Significant Time-Dependent[a] Changes in Anthropometric Measurements of Miss America Pageant Winners, Playboy Playmate of the Year, Fashion Models, and Young Women in General

	Direction of Change	P-valueType III SS
Height		
Playmates	Increase	0.001
Miss Americas	No change	NS[b]
Models	Increase	0.0001
Young Women	No change	NS
Weight		
Playmates	No change	NS
Miss Americas	Decrease	0.05
Models	Decrease	0.0001
Young Women	Increase	0.01
BMI		
Playmates	Decrease	0.0004
Miss Americas	Decrease	0.001
Models	Decrease	0.0001
Young Women	Increase	0.01
Bust		
Playmates	No change	NS
Miss Americas	Increase	0.0001
Models	Increase	0.0001
Young Women	No change	NS
Waist		
Playmates	Increase	0.0067
Miss Americas	Decrease	0.002
Models	Decrease	0.0001
Young Women	No change	NS
Hips		
Playmates	No change	NS
Miss Americas	No change	NS
Models	Decrease	0.0001
Young Women	No change	NS
Waist-to-Bust Ratio		
Playmates	Increase	0.0002
Miss Americas	Decrease	0.0001
Models	Decrease	0.0001
Young Women	No change	NS
Waist-to-Hip Ratio		
Playmates	Increase	0.0001
Miss Americas	Decrease	0.0001
Models	Decrease	0.0001
Young Women	No change	NS
Curvaceousness		
Playmates	Decrease	0.0001
Miss Americas	Increase	0.0001
Models	Increase	0.0001
Young Women	No change	NS

[a] Time period is 1920s to 1990s for Miss Americas, Models, and Young Women; 1950s to 1990s for Playmates.
[b] Not Significant

ference by hip circumference, respectively. Both WBR and WHR can range from 0.0 to 1.0, with smaller ratios indicating a greater difference in waist and bust or hip measurements, respectively, than larger ratios.

All idealized beauty groups experienced significant changes in both WBR and WHR over time. However, because the weight of Young Women was increasing relative to their height, and neither their hip or bust measurements were changing, WBR and WHR did not change significantly. The WBR changes noted in Miss Americas and Models were the result of a generally increasing bust and decreasing waistline while the WHR changes occurred because the waistline decreased more than the hip circumference increased. On the other hand, Playmates experienced an increase in WBR because their bust circumference was on a slight downward trend and waistline was increasing slightly. A similar effect occurred with the Playmate WHR; that is, over time hip circumference declined slightly, while the waistline rose slightly.

Models tended to have the highest WBR until the 1980s and 1990s when their WBR became similar to Miss Americas. Their WBR tended to decline between the 1920s and the 1950s and then gradually climbed and leveled off at values lower than early decades. Playmates tended to have WBR that were lower than both Miss Americas and Models. In nearly all decades, Young Women had the highest WBR. Both Models and Miss Americas experienced a decline in WHR every decade until the 1950s at which time their WHR tended to rise, though never reaching the highest levels noted in the 1920s and 1930s. With the exception of the 1960s, Playmate WHR was virtually unchanged over time. Young Women had the highest WHR in every decade.

The data were further analyzed to determine a curvaceousness index using the formula adapted from work by Agras and Kirkley (1986): {([(bust/waist)+(hips/waist)]/height])*100}. Relatively lower index numbers reflect a large waist measurement relative to bust and hips which indicates a less curvaceous, more tubular or androgynous body shape. In contrast, relatively higher index numbers indicate a small waist measurement relative to bust and hips, which indicates a more curvaceous (i.e., hourglass) body shape (Morris, et al., 1989). The general trend for all groups was to move from a less curvaceous body shape in the early part of the twentieth century to a more curvaceous shape at mid-century and returning to a less curvaceous shape in the 1990s. Models were most curvaceous in the 1950s, Playmates in the 1960s, Miss Americas from 1950s through the 1970s, and Young Women in the 1970s. Over the decades, Playmates tended to be more curvaceous than Models and Young Women and fairly similar to Miss

Americas. Of the three idealized beauty groups, Models tended to have the lowest curvaceous index across the decades. All three idealized beauty group experienced significant time-dependent changes in curvaceousness index. That is, they were most curvaceous (hourglass shape) in the 1950s and 1960s and least curvaceous in the earliest and latest decades. In contrast, the curvaceousness index of Young Women has remained fairly steady over time.

DISCUSSION AND RECOMMENDATIONS

The limitations of this study must be considered when interpreting the results. One limitation is that data for the idealized beauty groups tended to be self-reported and thus subject to inaccuracy. However, this method is a practical and efficient alternative to actual measurements. In addition, strong correlations between self-reported and measured anthropometric measures have been reported (Kuczmarski, Kuczmarski and Najjar, 2001). A second limitation is that the racial distribution likely differed between the Young Women and idealized women. Racial data were largely unavailable for most of the Young Women; however the idealized women were virtually all Caucasian. Consequently, the idealized body image described may only apply to this racial group. Although this study cannot determine whether the media's portrayal of idealized body image differs among racial groups, the broad emphasis on thinness in Western culture may be sufficiently strong to affect perceptions of body image and satisfaction across racial groups (French, et al, 1995). A third limitation is that the data for Young Women may not be representative of all young women. For instance, college women and military women likely differ in educational attainment and income, as well as differ in the same way from young women in general. However, we took considerable care in selecting data for Young Women that were systematically collected, using methods designed to ensure accuracy from a sample as representative as possible of young women in the United States. Finally, the sample sizes of the groups were unbalanced. However, a sample of Young Women proportionately matched to the idealized groups did not differ in mean results from the group mean used in the analyses.

Despite the limitations, the findings indicate that over the past 80 or so years, Models, Miss Americas, and Playmates have steadily become more slender, which supports the downward trend noted by others (Owen and Laurel-Seller, 2000; Silverstein, et al., 1986). The findings

also indicate that idealized women have a body size that is unlike that of Young Women. With the growing obesity epidemic noted in recent years, the chasm between the media-defined ideal and reality will continue to diverge as the mean BMI of Young Women increases. The mean increase in Young Women's BMI seems to be occurring in tandem with the increase in body image dissatisfaction noted by others (Garner, 1997).

This narrowly defined idealized body image and normalization of the ultraslim body by the media along with numerous recent health messages about obesity is likely to produce cognitive dissonance and increased disordered eating given their juxtaposition to the relentless media messages, primarily through advertising, that encourage us to eat, eat, eat (Byrd-Bredbenner and Grasso, 2000). This dissonance may be particularly profound in females because media messages about eating and physical appearance are more targeted to them than males. For example, food advertisements occur 79 times more often in women's magazines than in men's magazines, and diet food advertisements appear 63 times more frequently. Women's magazines also include 12 times more articles and advertisements focusing on weight, dieting, and body size than men's magazines (Silverstein, et al., 1986). This differential emphasis on female appearance, eating, and dieting may account, at least in part, for the higher incidence of eating disorders in females than males (Ogletree, et al., 1990). In addition, economic rewards attached to media ideals of slender body size coupled with the cost of weight loss treatments may put many young women at a monetary disadvantage relative to the extremely few women who can achieve the idealized media image.

Media images of realistic women are not as likely to induce women to become concerned with their weight as are images of the perfected media standard (Posavac, Posavac and Posavac, 1998). Thus, to promote positive self-perceptions, health professionals likely should encourage media representatives and fashion magazine editors to use models reflecting a broader array of beauty than has been used traditionally (Irving, 1990). In fact, in 2000, the British Medical Association indicated that the media should "adopt a more responsible editorial attitude toward the depiction of extremely thin women as role models" (Morant, 2000, p. 1023).

Can we hope that media will ever more realistically portray women? Recently, some attention has been focused on more normally-proportioned fashion models; however Anna Wintour, editor of Vogue magazine dubbed the 'arbiter of American beauty' stated, "I don't think

you're going to see this trend on the [fashion show] runway" (Betts, 2002, Section 9, p. 8). Social Comparison Theory also indicates that the answer is likely to be no (Festinger, 1954). Advertisers are not likely to depict women in a realistic manner because they do not believe that such images will compel viewers to purchase products perceived to reflect their own, everyday lives and not help them move, in some real or imagined way, across the gap that separates them from the idealized image (Paff and Lakner, 1997). Plus, highly attractive models positively influence attitudes toward the advertisement itself as well as the product and brand (Kamins, 1990). Moreover, advertisers report that using 'real' women weaken sales (Garner, 1997).

The media provide a plethora of opportunities for females to engage in social comparison and these media images are not likely to change greatly in the near future (Betts, 2002). The potential effect of idealized beauty images on psychosocial well-being coupled with evidence of a direct effect of media exposure on eating disorder symptoms points up a need for educational programming, especially for girls in fourth through eighth grades when self-perceptions and body image still may be malleable. Programs could help participants understand how media affects them and how they can exert control over it. Prevention programs should strive to decrease internalization of the thin media ideal, increase body image satisfaction, and help young women learn healthful weight management methods (Martin and Gentry, 1997; Stice, et al., 1994). Programs also could help females develop realistic comparison standards by showing the incongruity of the idealized body and female biology (Martin and Gentry, 1997; Voracek and Fisher, 2002) and revealing fashion photographers 'tricks of the trade' with lighting, cosmetics, and photographic retouching (American Academy of Pediatrics, 2000; Posavac, et al., 1998).

The increasing prevalence of eating disorders, body dissatisfaction, and body image dysphoria among males (Spitzer, et al., 1999), particularly those who are adolescents and young adults, may indicate that males need similar educational programs. Parents also influence the development of weight concerns and weight control practices in children and adolescents (Field, et al., 2001) and thus need access to educational programs to help their children cope, as well as learn parenting skills that promote self-esteem, healthy body images, and appropriate weight control methods. Successful education efforts can positively affect body image and reaction to idealized body types portrayed in the media (Martin and Gentry, 1997; Paquette, Leung and Raine, 2002). At this

time, educational programs appear to hold the greatest potential for helping children develop healthy body images and eating patterns.

Positive images of ultrathin bodies abound in advertising, television, films, and magazines. Although some may dismiss the impact of media as inconsequential or trivial, it is a potent force in shaping our culture and our lives. The media have a strong influence on what we learn, think, and do–it provides a common frame of reference and serves as a primary transmitter of culture (John, 1999; Tiggemann and Pickering, 1996). Thus, it is essential for health professionals to: gain an understanding of the incongruity between reality and how media defines beauty, be cognizant of the effect of these depictions on psychosocial constructs such as body image and satisfaction, and work to influence actively both the portrayal of women in the media and the interpretation of these messages by viewers.

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