

## **Weight Status and the Discrepancy between Perceived and Ideal Body Images among Elementary Students**

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### **Abstract**

Addressing overweight and obesity among children continues to be a high-priority public health issue. The purpose of this study was to assess children's actual weight status, and to learn about variables that may influence discrepancies between their perceived and ideal body types. Results showed that while many children were overweight, few identified their body type as "overweight." Most children indicated a difference between their perceived and ideal body types, favoring smaller or "too thin" body types. The findings indicate that children may benefit from continual nutrition and physical education, as well as guidance related to realistic body types.

### **Keywords**

overweight, child, body type

### **Introduction**

The American Association of Family and Consumer Sciences (AAFCS) has launched a new initiative, "FCS Fit," which aims to boost the health and wellness of children and families (AAFCS, 2017). While the overarching theme of "fitness" is broad for AAFCS, the purpose of this study was to look at "fitness" from a more psychosocial perspective (perceived and ideal

body image) with relation to weight status among youth. Addressing overweight and obesity among children continues to be a high-priority public health issue, and one that AAFCS highlights regularly in webinars and conferences. Although physical-health consequences related to obesity have been well documented (Birken, 2014; Daniels, 2006; Lang, 2012; Larsen, 2006), perceived body image in the elementary school population has not been thoroughly examined. The purpose of this study was to assess children's actual weight status, and to learn about any possible discrepancies between perceived and ideal body images among elementary students. Results demonstrated that despite being overweight themselves, children still favored smaller body types. In fact, the children favored body types that were smaller than body types representative of a healthy weight.

Today's youth continue to struggle with maintaining a healthy body weight. In 2011-2012, 32% of youth (ages 2 years to 19 years) in the United States were either overweight or obese, and 17% of youth were obese (Ogden, 2012). According to Ward and Erinosho (2012), childhood obesity continues to be a relentless public health issue with rates of childhood obesity having almost tripled since the 1980s. Results from The National Health and Nutrition Examination Survey (NHANES), reported by Ward and Erinosho (2012), indicated 27% of preschool children from the young ages of 2 to 5 years old were already facing obesity. Community educators, parents, and the healthcare industry face challenges in addressing concerns due to the early onset of obesity among children.

Research over the last decade has clearly established that youth who are either overweight or obese are at higher risk for developing physical and psychosocial problems related to their weight status (Ward, 2015; Birbeck, 2003; Heron, 2013; Stice, 2002). Current research further indicates that overweight youth tend to report a more negative body image than youth who are not overweight. Because previous research has indicated that a negative body image is related to feelings of emotional distress, anxiety, and depression, it is important to understand children's perceptions of body images, and ages where perception may shift to an unhealthy ideal body type so that more effective support may be offered to youth who struggle with weight management.

### **Review of the Literature**

Although progress has been made toward reducing the prevalence of childhood obesity, it remains a concern among the healthcare community, educators, and parents. Research findings from the 2014 National Center for Health Statistics (HCHS) reported that in the United States, more than one-third of adults, and approximately 17 percent of children (or 12.7 million children) and adolescents are obese. Further, the negative outcomes for an obese child or young person are all-encompassing including numerous physical and health-related consequences as well as countless psychosocial problems including body image distortions (Ward, 2015; Birbeck, 2006).

### *Physical Consequences of Obesity*

Even with decades of research, and countless efforts to increase public awareness, childhood obesity and its physical complications continue to extend into adulthood and reduce life expectancy (Moglia, 2013). Research continues to document the multitude of physical risk factors of obesity (Mahmood, 2015). This list of health-related risk factors that obese children and adolescents will likely face in adulthood is far reaching in the life of each child and adolescent. The most common risk factors include heart disease, elevated blood pressure, high cholesterol, diabetes as well as musculoskeletal, endocrine, and respiratory system difficulties (Moglia, 2013; American Academy of Pediatrics, 2014; Robinson, 2011).

These physical outcomes can be overwhelmingly difficult for an obese individual at any age. For a child or young person who is obese, this means facing health-related consequences including the pain, difficulty, challenges, and limitations of elevated health risks throughout their entire lifespan (Birbeck, 2006). Today's obese children and youth are displaying health-related risk factors that were formerly only seen in adults (Lang, 2012; Mahmood, 2015).

### *Psychosocial Consequences of Obesity*

In addition to extensive physical and health-related challenges, negative psychosocial consequences are also inevitable for obese children and youth. Many believe the psychosocial impact of obesity to be equally severe to the negative physical outcomes. Mahmood (2015), for example, cautions researchers on the profound psychological effects of obesity and overweight "which should not be underestimated" (p. 7). Widespread psychosocial conditions of obesity have been identified as increased levels of sadness, loneliness, and anxiety as well as greater likelihood of exhibiting body image distortions, eating disorders, and depression (Heron, 2013; Moglia, 2013; Robinson, 2011; Stice, 2002). Obese children have also been found to have lower levels of self-esteem, and are more likely to be socially isolated (Robinson, 2011). At a surprisingly early age, children and adolescents identify obesity with negative personal characteristics including laziness, lower intellectual ability, and body image dissatisfaction (Birbeck, 2006; Robinson, 2011). As a result, it is imperative to address psychosocial issues and educate children about stereotypes and healthy lifestyles.

### *Defining Body Image*

Because body image and body distortions are commonly linked to obesity, it is important to define "body image." For the purpose of this study, body image has been defined as how we perceive our bodies or what we believe to be true about our appearance including our height, shape, and weight (Cash, 2012). In both the fields of medicine and psychology, the term "body image" refers to an individual's emotional attitudes, beliefs, and opinions about their bodies (Cash, 2012).

The concept of an “ideal body image” is deeply embedded in our social and cultural context, which is fluid, ever changing, and emerging over time (Birbeck, 2003). Over the past 50 years, the American culture has promoted an increasingly thin body image as ideal. As a result, some children and adolescents develop serious health-related issues such as eating disorders and depression (DeLeel, 2009; Olive, 2014).

#### *History and Current Directions in Body Image Research*

Historically, research studies related to body image awareness have been primarily limited to both adolescent and adult females (Birbeck, 2006). Cash and Smolak (2012) suggest that recent research related to body image is now inclusive of children, boys, men, and diverse cultures. It is no longer isolated to female teenagers, but instead is reflective of the widespread interest among researchers towards a variety of diverse target populations throughout the life cycle. Research has also begun to reveal how children as young as seven years of age are reporting how unhappy they are with their body makeup (Dohnt, 2005). Birbeck and Drummond (2003) found that, among their study population of children seven to 10 years of age, one out of four children reported that they had dieted to lose weight.

Since the 1990s, studies have documented the increasing occurrence of body image distortions as a dangerous health issue impacting both adolescents and adults (Ogden, 2012). According to Stice (2002), a negative self-image of one’s body is a risk factor that can snowball into harmful psychosocial outcomes related to obesity, including the possibility of eating disorders. In recognition of this, since the new millennium, research related to body image has continued to flourish. According to Cash and Smolak (2011), the most significant indication of the growing interest and emphasis on body image is evidenced by the founding of a scientific peer-reviewed journal titled *Body Image: An International Journal of Research*, which began in 2004. This quarterly journal disseminates high-quality body image research from behavioral and medical science perspectives.

#### *Body Image Influences*

Some factors that contribute to the development of a person’s body image include the following: food choices and food intake, physical activity levels and frequency of activity, parental obesity, parental modeling, and an individual’s eating patterns (Hart, 2015). Most research focuses on variables that harm or contribute to a negative body image. Conversely, Homan and Tyika (2015) explored variables that may serve to protect body image. The process of developing a harmful versus protective body image has been described by Cash (2012) as the unfolding of “person-environment-behavior transactions” (p. 40). These transactions begin in childhood, as early on as preschool. Therefore, the purpose of this study was to explore the relationship

between perceived and ideal body images among younger children, particularly how their body image relates to their body mass index (BMI).

## **Method**

A cross-sectional research design was used to assess differences in perceived and actual body image among boys and girls across the elementary school years. The study was approved by the university's Institutional Review Board (IRB) committee and the primary school's principal.

### *Sample Frame*

Opportunity sampling was used to recruit participants from each grade level (pre-kindergarten through third grade) at a predominantly low socio-economic status (SES) suburban school. A total of 176 students participated in the study (Table 1). The researcher contacted the school and discussed the purpose of the study and its procedures with the principal. Once permission was obtained to conduct the study in the school, the researcher and assistants met with teachers to discuss the participation of the students in their respective classes. They mutually agreed that collecting data in the morning before classes began would be optimal in order to keep classroom disruption to a minimum. The researcher then sent a parent/guardian letter home with each student regarding the study's purpose, method of data collection, and request for consent to participate. Students who had the consent of their parent/guardian to participate in the study were also required to give verbal assent before participating in the data collection activities.

### *Data Collection*

Using Thompson and Altabe's (1991) "Figure Rating Scale," the researcher and assistants asked each participant to identify the picture that looked most like him or her, and to identify the picture that he or she would most likely want to resemble (Figure 1). Once the participants finished with the task, a research assistant walked them into a more private area to have their height and weight measured. Body mass index (BMI) was then calculated for each participant. Participants with a BMI greater than or equal to the 95th percentile from the sex- and age-specific growth charts developed by the Centers for Disease Control and Prevention (CDC, 2007) were considered obese, and participants with a BMI at or above the 85th percentile and lower than the 95th percentile were considered overweight. The participants were also asked to indicate their age and grade (Table 1). After all of the data were collected, the researchers debriefed the children about the study and discussed the importance of being healthy. The researchers addressed any questions that the children raised and sent home a debriefing note for their parents or guardians to read.

## Results

### *Description of the Sample*

Of the 176 students who participated in the study, 164 (93%) completed all components. Parents or guardians of the participating children signed the study's consent form, and the children gave their assent on the day data were collected. Of the participants, 95 were male, and 81 were female. The majority of the participants were African American (74.4%). The pre-kindergarten class had the least number of participants ( $n= 19$ ), and the first grade class had the highest number of participants ( $n= 48$ ). There were a fairly even number of boys and girls in each grade represented. Almost 30 percent of the participants were overweight, and 12% were obese (Table 1).

### *Statistical Analyses*

Chi-square analyses were performed on the following pairs of variables: gender and overweight status, gender and obesity status, ethnicity and overweight status, and ethnicity and obesity status. Of all the pairs, the only significant relationship found was between the gender and overweight status variables ( $X^2 = 11.99, p < .05$ ). In this sample of children, females were more likely to be overweight than males.

### *Paired Samples t-test Analysis*

A paired samples *t*-test was used to determine whether or not there were significant mean differences between the following pairs of variables: gender and desired body image, gender and current body image, overweight status and current body image, overweight status and desired body image, obesity status and current body image, obesity status and desired body image, and current body image and desired body image. Of all the pairs, the variables boasting significantly different means were current body image and desired body image ( $t = 3.19, df = 162, p < .01$ ). The participants in this study reported higher rating numbers in terms of current body image ( $M = 3.24, SD = 1.70$ ) as opposed to desired body image ( $M = 2.67, SD = 1.61$ ).

## Discussion

Results from this study support previous research that indicates elementary school children struggle with weight management. Although all grade levels had a 20% or higher prevalence of overweight/obesity, the preschool children showed the highest rate, with 53% falling under the category of overweight/obese. This indicates that there is still a need for prevention and intervention regarding weight management, and that younger children need to be a stronger focus point of these interventions.

With regard to body image, the findings also support previous research, which suggested that a smaller body figure is more preferable than a larger body figure (Cash, 2012). In one study of 37

children between the ages of 3 years and 7 years, researchers found that 28 children (76%) chose the thin and average silhouettes as the ideal body shapes. The least desirable of body figures was the silhouette that indicated obesity (62%) (Kościcka, 2016). Heron (2013) reported that there is higher level of body dissatisfaction among children who are overweight versus their healthy weight peers. That was echoed in this study as well (Table 3). Of the overweight girls, 47% indicated a body figure preference of one or two (Figure 1). However, for the overweight boys, only 12% indicated a body figure preference of one or two. Instead, the majority of the overweight boys indicated a preference for figures four or five, which are in the middle of the spectrum (healthier) in terms of body weight. This may indicate that males were more comfortable with a healthy body type than the female participants.

### *Limitations*

The study did have some limitations, which must be addressed. First, the study was composed of opportunity sampling. Due to this, the results are not generalizable to the greater population. Future studies should take into account recruiting diverse races/ethnicities when assembling their sample population. However, the study still acquired rich data from over 100 elementary students, which can be a difficult feat to accomplish when tailoring research to vulnerable populations, specifically preschool children.

A second limitation was that the data were based heavily on self-reports. Whenever this form of data collection is introduced to a study, there is always the risk of response bias from the participants, who may answer the questions based on how they believe the researcher would want them to. Nevertheless, self-reported data collection is a widely accepted practice in research. The study used other methods such as collecting each participant's height and weight prior to engagement in the study, in order to corroborate the participants' responses about their actual body weight.

### **Conclusion**

Perceived body image is extremely pivotal to a person's self-esteem, especially during one's younger years. Results from the study bring attention to the dire need to educate younger children on body image. It can be difficult for young children to ascertain a realistic view of what a "healthy" body image is, and many times they allow the media and society to determine that for them. Instead of idealizing "too thin" types of body figures, which many of the study participants did, health professionals must show children that healthy body images come in sizes greater than zero. The study demonstrated that there is a significant discrepancy among participants in terms of their current body size and their ideal body size. Future research can build on this finding and see if this discrepancy is significant among older children and whether other variables such as race and ethnicity influence the observed dichotomy. By doing so, health

professionals will be able to tailor their body image interventions to diverse groups which will allow for them to reach out to a wider range of children struggling with weight management.

Table 1.

*Description of participants by grade, age, and weight status*

[Table 1 Summary: There was a fairly even distribution of participants across the grade levels.]

Grade	Pre-K	K-garten	First	Second	Third
Boys	7	16	32	21	19
Girls	12	24	16	16	13
Total Participants	19	40	48	37	32
Overweight	7	6	7	6	8
Obese	3	2	5	3	4
Total Overweight or Obese Participants	10	8	12	9	12

Table 2.

*Body image ratings*

[Table 2 Summary: Across all participants, the majority selected Figures 1, 2, and 3 as their Actual and Ideal body types.]

Fig.#	Actual Overall	Ideal Overall	Actual Pre-K	Ideal Pre-K	Actual K	Ideal K	Actual 1	Ideal 1	Actual 2	Ideal 2	Actual 3	Ideal 3
1	39	49	7	4	9	13	15	15	4	10	4	7
2	18	38	1	2	3	5	8	9	2	13	4	9
3	26	30	1	1	6	6	4	10	10	5	5	8
4	46	25	4	4	7	4	9	9	13	3	13	5
5	21	11	4	3	8	4	2	1	4	2	3	1
6	5	4	1	2	0	2	3	0	0	0	1	0
7	8	6	1	3	3	2	3	1	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0



Table 3.

*Body ratings reported by overweight students*

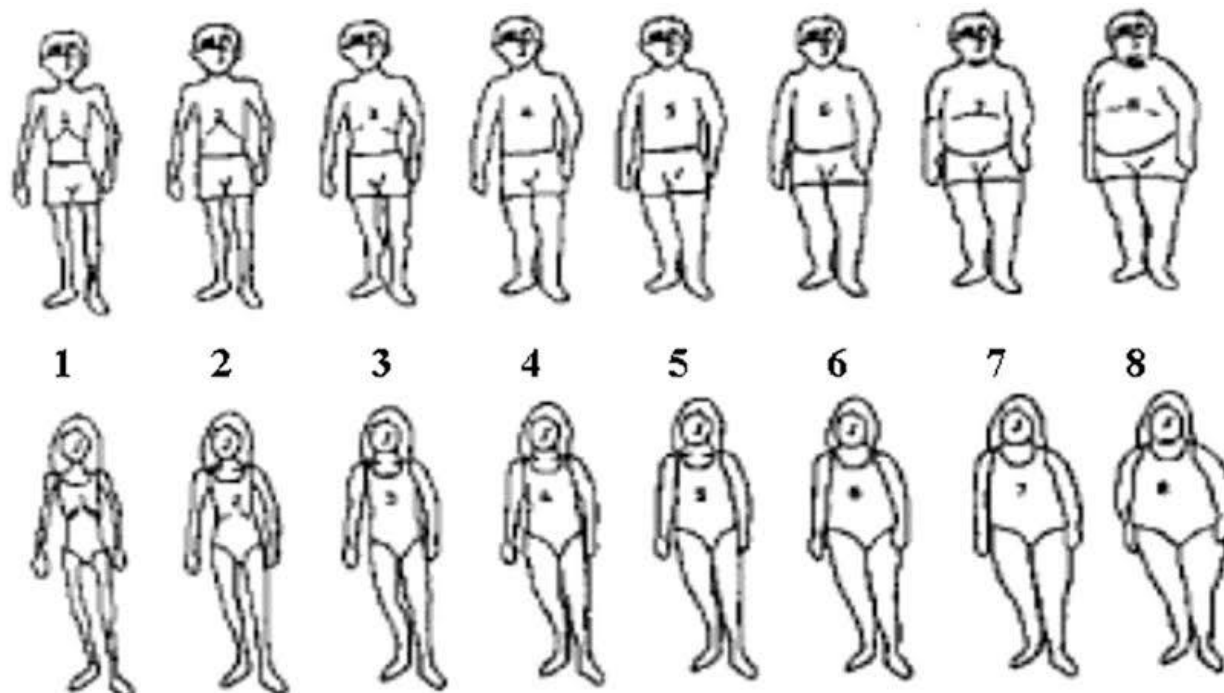
[Table 3 Summary: Among all participants who were either overweight or obese, the majority selected Figure 2 as their Ideal figure.]

Fig.#	Actual Ovwt	Ideal Ovwt	Actual Ovwt Girls	Ideal Ovwt Girls	Actual Ovwt Boys	Ideal Ovwt Boys
1	9	9	8	7	1	2
2	1	10	1	9	1	1
3	3	4	2	3	1	2
4	10	6	6	1	4	5
5	7	2	7	2	0	0
6	2	2	0	2	2	0
7	2	1	1	1	1	0
8	0	0	0	0	0	0

Figure 1.

*Figure rating scale*

[Figure 1 Summary: Body figures participants chose from for the study.]

**References**

American Academy of Pediatrics. (2014). Chronic sleep curtailment and adiposity. *Journal of Pediatrics*, 133(1), 1013-1022.

American Association of Family & Consumer Sciences (AAFCS). (2017). Retrieved from <http://www.aafcs.org/> Birbeck, David, & Drummond, Murray. (2003). Body image and the pre-pubescent child. *Journal of Educational Enquiry*, 4(4), 117-127.

Birbeck, David, & Drummond, Murray. (2006). Very young children's body image: Bodies and minds under construction. *International Education Journal*, 7(4), 423-434.

Birken, Catherine, & Hamilton, Jill. (2014). Obesity in a young child. *CMAJ: Canadian Medical Association Journal*, 186(6), 443.

Cash, Thomas, & Smolak, Linda. (2012). *Body Image: A Handbook of Science, Practice, and Prevention*, 2nd ed. New York: The Guilford Press.

Centers for Disease Control and Prevention, (2007). Use of World Health Organization and CDC Growth Charts for Children Aged 0--59 Months in the United States. Retrieved from: <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5909a1.htm>

Daniels, Stephen R. (2006). The Consequences of Childhood Overweight and Obesity. *Future of Children*, 16(1), 47-67.

DeLeel, Marissa L., Hughes, Tammy L., Miller, Jeffrey A., Hipwell, Alison, & Theodore, Lea A. (2009). Prevalence of eating disturbance and body image dissatisfaction in young girls: An examination of the variance across racial and socioeconomic groups. *Psychology In The Schools*, 46(8), 767-775.

Dohnt, Hayley, & Tiggeman, Marika. (2005). Peer influences on body dissatisfaction and dieting awareness in young girls. *British Journal of Developmental Psychology*, 23, 103-116.

Hart, Laura, Samiano, Stephanie, Cornell, Chelsea, & Paxton, Susan. (2015). What parents know and want to learn about healthy eating and body image in preschool children: A triangulated qualitative study with parents and early childhood professionals. *Biomedical Central Public Health*, 15, 596-605.

Heron, K. E., Smyth, J. M., Akano, E., & Wonderlich, S. A. (2013). Assessing Body Image in Young Children. *SAGE Open*, 3(1), 215824401347801. doi:10.1177/2158244013478013

Homan, Kendra, & Tylka, Tracy. (2015). Self-comparison and appearance self-worth's inverse relationship with body appreciation. *Body Image* 15, 1-7.

Lang, Kellie. (2012). Parents of obese children and charges of child abuse: What is our response? *Pediatric Nursing*, 38(6), 337-340.

Lang, I. A., Kipping, R. R., Jago, R., & Lawlor, D. A. (2011). Variation in childhood and adolescent obesity prevalence defined by international and country-specific criteria in England and the United States. *European Journal Of Clinical Nutrition*, 65(2), 143-150.

Larsen, L., Mandleco, B., Williams, M., & Tiedeman, M. (2006). Childhood obesity: Prevention practices of nurse practitioners. *Journal of The American Academy Of Nurse Practitioners*, 18(2), 70.

Mahmood, Lubna. (2015). The childhood obesity epidemic: A mini review. *International Journal of Medicine and Public Health*, 5(1), 6-9.

Moglia, Paul, and Dill, Kenneth. (2013). *Magill's Medical Guide*. Salem Press.

Ogden, Cynthia, Carroll, Margaret, Kit, Bryan, & Flegal, Katherine. (2012). Prevalence of childhood and adult obesity in the United States, 2011-2012. *Journal of the American Medical Association*, 311(8), 806-814.

Olive, L., Byrne, D., Cunningham, R., & Telford, R. (2014). Depression and body image in children: Is physical activity beneficial and how is this translated into clinical practice? Lifestyle of our kids study. *Journal Of Science & Medicine In Sport*, 18, e114.

Robinson, Georgina, Rizzolo, Denise, & Sedrak, Mona. (2011). Childhood obesity: Complications, prevention strategies, treatment. *Journal of the American Academy of Physician Assistants*, 24(12), 58-63.

Stice, Elizabeth. (2002). Risk and maintenance factors for eating pathology: A meta-analytical review. *Psychological Bulletin*, 128, 825-848.

Thompson, J. K., & Altabe, M. N. (1991). Psychometric qualities of the figure rating scale. *International Journal of Eating Disorders*, 10(5), 615-619. doi:10.1002/1098-108x(199109)10:5<615::aid-eat2260100514>3.0.co;2-k.

Ward, Dianne, & Erinosh, Temitope. (2015). Promoting healthy weight development in child care centers: A review of the NAPSACC program. In *Health and Education in Early Childhood: Predictors, Interventions, and Policies*, Cambridge University Press, 369-391.