Associations Between Media Representations of Physical, Personality, and Social Attributes by Gender: A Content Analysis of Children's Animated Film Characters

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This study conducted a content analysis of 130 characters from 24 recent popular animated children's films and examined the associations between physical appearance, personality, and social attributes by gender. We found that physical attractiveness was associated with having more friends and receiving more affection among male characters, and negatively associated with weight status among females. Also, wearing close-fitting clothes was associated with attractiveness among females and with popularity, musculature, and strength among males. However, being muscular, stronger, and taller was associated with less intelligence among males. Regarding gender-stereotyped body ideals, female characters were portrayed as slimmer and attractive more frequently than males, who tended to be larger, muscular, and stronger. Results suggest that mainstream media's narrow and stereotypically gendered appearance standards are prevalent in content aimed at children and highlight the need for continuing research examining their impact on children's body image and gender development.

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In today's media-saturated society, we are continually exposed to mainstream beauty ideals and associated messages that determine what types of bodies are culturally accepted and what personal qualities and traits are associated with them (Klein & Shiffman, 2005). Literature demonstrates that among adults, exposure to such media imagery is associated with negative body image outcomes such as body dissatisfaction, a key risk factor in the development of eating disorders (Shroff & Thompson, 2006). An increasing number of studies show similar associations between media exposure and body image concerns among adolescents (Harrison & Hefner, 2006; Moriarty & Harrison, 2008) and children (Dohnt & Tiggemann, 2006; Grabe, Ward, & Hyde, 2008; Levine & Chapman, 2012).

Experimental studies show that even short exposure to appearance-focused media imagery can shift perceptions of the ideal body among both adults (Boothroyd, Tovee, & Pollet, 2012) and children (Dittmar, Halliwell, & Ive, 2006). Longitudinal evidence also confirms that the internalization of media's narrow and often unrealistic body ideals can have a negative impact on body image and eating behaviors (Grabe et al., 2008; Hausenblas et al., 2013), including among very young children (Rodgers, Damiano, Wertheim, & Paxton, 2017). Furthermore, internalization of such ideals may also lead to stigmatization toward people with heavier or larger bodies (Puhl & Latner, 2007). Indeed, evidence suggests that women and children may be particularly susceptible to environmental mechanisms that reinforce weight stigma (Brewis, 2014). Thus, children can assume that being thin is good, whereas having a larger or heavier body is unacceptable (Meers, Koball, Wagner, Laurene, & Musher-Eizenman, 2011). Consequently, they may develop unrealistic ideas about a "normal" body size and shape.

Very young children may be especially vulnerable to media's messages and beauty standards (Harriger, 2012): Their emerging cognitive, social, and emotional development and lack of experience means that they have difficulties in understanding these messages (Hutchinson & Calland, 2011; Simpson, Kwitowski, Boutte, Gow, & Mazzeo, 2016) and in differentiating between reality and fantasy (Calvert & Wilson, 2011; Harriger, 2012; Hayes & Tantleff-Dunn, 2010). At the preoperational stage of development (2–7 years), children tend to focus on concrete and perceptually salient aspects of a stimulus (Piaget, 1929). This characteristic, known as centration, means that young children are more likely to be influenced purely by a character's physical appearance than children at a later developmental stage (Calvert & Wilson, 2011). For example, they may find it difficult to conceive that characters who look similar may not have the same personality attributes (Calvert & Wilson, 2011). This could explain how preschoolers already show weight bias by attributing more negative adjectives to larger bodies (Harriger, Trammell, Wick, & Luedke, 2019).

Scarce studies show that media content aimed at young children often contains messages that convey the same narrow appearance standard and body ideals found in media content aimed at adults (Harriger, Serier, Luedke, Robertson, & Bojorquez, 2018; Herbozo, Tantleff-Dunn, Gokee-Larose, & Thompson, 2004). Content analyses of children's films have found the presence of weight stereotypes, where heavier or larger figured characters tend to display perceived negative traits (e.g., antisocial, evil behavior, low intelligence, and unfriendliness). Slimmer characters, however, tend to display positively perceived qualities, such as popularity, success, kindness, sociability, happiness, and romantic desirability

(Bazzini, Curtin, Joslin, Regan, & Martz, 2010; Harriger et al., 2018; Herbozo et al., 2004; Klein & Shiffman, 2005, 2006). Furthermore, these studies found that heavier or larger characters are more likely to be depicted as unattractive, whereas slim characters, particularly female, are generally portrayed as attractive. Such depictions may encourage weight-based bias among children, especially toward overweight females (Marx, Kiefner-Burmeister, Roberts, & Musher-Eizenman, 2019).

Apart from weight stereotypes, studies have demonstrated the presence of gender-stereotyped messages in children's animated films (England, Descartes, & Collier-Meek, 2011), which reflect the existing stereotypical role models in society (Gökçearslan, 2010). Male characters are typically depicted as physically strong, athletic, and brave, whereas female characters are usually portrayed as weak, helpful, thin, and good-looking (Aley & Hahn, 2020; England et al., 2011). These media messages can influence children's own gender identity development as they learn from the social environment how they are expected to be and behave depending on their gender (Aley & Hahn, 2020; Lemish, 2015). Research shows that from early ages, children can recognize gender stereotypes in the media, and those who are exposed to these stereotyped messages are more likely to endorse them (Aubrey & Harrison, 2004; Coyne, Linder, Rasmussen, Nelson, & Collier, 2014).

Two theoretical approaches that attempt to explain how media influences children's lives are social learning theory and cultivation theory. Social learning theory posits that children learn by observing other people's behaviors (Bandura, 1977). This includes behaviors or attitudes of real people (i.e., parents, friends) and those of people or characters presented in the media. Fantasy characters who typically populate animated films may be particularly attractive role models for children (Calvert & Wilson, 2011), especially for very young children, who tend to engage in fantasy play and create imaginary companions (Woolley & Gilpin, 2020). Indeed, studies have found that children were more likely to identify with, and aspire to look like, animated characters than their own friends or relatives (Hayes & Tantleff-Dunn, 2010).

Cultivation theory similarly attempts to explains how media exposure directly shapes people's understandings of the real world (Gerbner, Gross, Morgan, & Signorielli, 1980). Repeated exposure to the same messages leads people to believe that these represent real life. For example, when individuals are repeatedly exposed to appearance stereotypes (e.g., large or heavy characters are depicted as unattractive and antisocial, females are depicted as weak and thin), they will be more likely to assume that such stereotypes reflect the real world (Aubrey & Harrison, 2004).

To our knowledge, only one study has examined appearance-related messages in recent children's animated films. Employing a similar methodology to that used by Herbozo et al. (2004), Harriger et al. (2018) found that among all types of media, feature-length animated films placed the most emphasis on appearance and physical attractiveness. However, their study only counted the presence or absence of a characteristic in each film and not their prevalence among the characters or the relationships between the measured traits. The present study extended this previous research in two ways: First, we conducted a content analysis of characters in more recent children's films (2006–2018), and second, we examined associations between physical appearance, and displayed personality and social traits by character gender. We hypothesized that characters would reflect media's gender stereotypes, with female characters being displayed as thinner and weaker, and males displayed as more muscular and stronger. We further

hypothesized that larger figured characters would be associated with less positive or desirable personality and social characteristics, whereas slimmer than average characters would be associated with more positive qualities and behaviors, such as being popular, friendly, kindhearted, or intelligent.

Method

Film and Character Sample Selection

Because of the large number of films aimed at a child audience (i.e., all ages admitted) released during 2006–2018, a set of inclusion criteria was established to select the films and characters:

1. Films had to be included within the first 100 films of the "Animation" list from Box Office Mojo in June 2018. This list contains the top grossing films in order of popularity.
2. Films had to be the highest grossing ones released between 2006 and 2018; films released before 2006 were analyzed in previous studies (Herbozo et al., 2004; Klein & Shiffman, 2006).
3. Films must contain at least three human-shaped characters, as established by Bazzini and colleagues (2010).
4. Characters such as animals, cars, or toys were not included unless they had an obvious human aspect or shape. Only characters with an important influence in the film's plot were selected— that is, with a visual or verbal presence that gave enough information to categorize the character in all variables.
5. Only the highest grossing film from the same saga was selected (e.g., three films of the *Shrek* saga were included in the ranking, but only the highest grossing one was selected).

Taking these inclusion criteria into account, 130 characters from 24 children's films were selected for analysis, with a mean of five characters per film. See Table 1 for the film titles and year of release.

Table 1. Film Titles and Years of Release.

Year of release	Film title
2006	*Monster House*
2007	*Ratatouille*
2007	*Shrek the Third*
2009	*Cloudy With a Chance of Meatballs*
2009	*Up*
2009	*A Christmas Carol*
2010	*Tangled*
2010	*Megamind*
2010	*Toy Story 3*
2010	*How to Train Your Dragon*
2012	*Wreck-It Ralph*
2012	*Brave*
2013	*The Croods: A Prehistoric Adventure*
2013	*Despicable Me 2*
2013	*Epic*
2013	*Frozen*
2014	*Big Hero 6*
2014	*Mr. Peabody & Sherman*
2015	*Inside Out*
2015	*Hotel Transylvania 2*
2016	*Trolls*
2016	*Vaiana*
2017	*The Boss Baby*
2017	*Coco*

Measures

Following previous studies' guidelines (Bazzini et al., 2010; Herbozo et al., 2004; Klein & Shiffman, 2006), 18 variables were defined and grouped into five categories (Table 2). These categories reflect general features of characters, physical appearance, physical abilities, cognitive and psychological features, and interpersonal relationships.

In the same manner as Klein and Shiffman (2005, 2006), we categorized characters' physical attractiveness as average unless there was clear evidence that their physical appearance led them to be labeled as attractive or unattractive, such as being judged, admired, or valued because of their appearance. Thus, this categorization was made based on the comments of other characters and noticeable traits of a character, rather than how the character sees himself or herself (e.g., feelings or self-evaluations that the character makes of his or her own physical attractiveness). Also, following the methodology from Klein and Shiffman's 2006 study, we coded body size (weight status) and physical appearance (attractiveness) as separate variables because body sizes other than thin can be portrayed as attractive (Halliwell & Dittmar, 2004).

Table 2. Categories and Description of Coded Variables.

Variables & Codes	Categories & Description
	General features
Gender	
Male/female	
Type of character	By default. All characters were determined as minor unless the conditions
Protagonist/minor/	indicated a high relevance of the character in the plot as protagonist or
antagonist	antagonist.
Age group	
Child or adolescent/adult/elderly	
Couple	
Yes/No	
	Physical appearance
Weight status	
Thinner than average	Noticeably thinner than other characters. Others talk about the character's thinness or allude to it.
Average	By default.
Larger than average	Noticeably larger than other characters. Others talk about the character's body size or allude to it.
Height	
Short	Noticeably shorter than other characters. Others talk about the character's shortness or allude to it.
Average	By default.
Tall	Noticeably taller than other characters. Others talk about the character's tallness or allude to it.
Physical attractiveness	
Unattractive	Character is judged or spoken to negatively because of his or her physical appearance. Other characters talk about his or her appearance by emphasizing his or her ugliness.
Average	By default. Character is not admired or valued by others because of his or her physical appearance.
Attractive	Character is admired or valued highly by others because of his or her physical appearance. The film usually focuses on his or her body.
Musculature	
Not muscular	Muscles are not portrayed or showed. Others even talk about the character's lack of musculature.
Average	By default. Character is portrayed as neither very muscular nor as noticeably lacking muscles, and nobody talks about the character's muscles.
Muscular	More muscled than others. Others talk about the character's muscles and strength.

Clothing	
Loose fitting	Clothing is large or baggy and so obscures the size and shape of the character's body.
Average fitting	By default.
Close fitting	Clothing is tight fitting or skimpy and so allows the character's body size and shape to be clearly seen.
Skin color	Character's skin color is White. "Other skin colors" refers to any other color.
White/other skin colors	
Physical abilities	
Strength	
Weak	Shows physical weakness when doing activities involving strength.
Average	By default.
Strong	Displays a great strength in situations that require it.
Physical disabilities or problems	Motor disability (e.g., limp, limited mobility of limbs, lack of limbs), vision, or hearing impairment, muteness, etc. Characters use elements that show a
Yes/No	physical disability (e.g., crutches, wheelchair, glasses).
Cognitive and psychological features	
Intelligence	
Unintelligent	Displays a silly behavior. Others point at character's lack of intelligence, or even make fun of it (e.g., in any context in which the character does not know how to answer questions or performs poorly).
Average	By default.
Very smart	Audacious character (e.g., knows what to answer for a given question, earns a lot of knowledge, performs properly, and is usually flattered because of his or her wisdom).
General behavior	
Violent	Shows signs of violence.
Antisocial	Isolated character who does not want to talk to anyone or be in contact with others.
Kindhearted	Helps others and gets involved with them.
Other behavior	Any different behavior not previously described.
Interpersonal relationships	
Friends	
Few or none	Has few or no friends (e.g., plays alone, sits alone, or does not receive any party invitations).
Average group of friends	By default. Character has a little group of friends.
A lot of friends	Compared with others, character has a bigger group of friends.

Affection	
Never	Never receives displays of affection from others.
Sometimes	Sometimes receives displays of affection from others.
Usually	Frequently receives displays of affection from others (e.g., hugs, kisses, compliments).
Mockery	
None	No one makes fun of the character.
Mockery about appearance	Some characters make fun of the character's weight status or any body part.
Mockery about personality or activity carried out	Some characters make fun of the character's mood, behavior, or skill when doing some activities (physical or not).
Popularity	
Unpopular	Is not very popular, has no friends.
Standard	By default. There are no signs of being unpopular or very popular.
Very popular	Admired by many (e.g., others want to spend time or play with the character, or the character is invited to parties).

Procedure

Following the Delphi method, a codebook with 17 initial variables was collated and sent to six experts in content analysis and physical appearance or body image. They indicated whether variables were adequate or inadequate to achieve the aim of the study. Additionally, they could suggest new variables to include. After their assessment, we used the Aiken's (1985) formula to obtain the content validity index (CVI) of each variable. The maximum value (+1) was obtained in nine variables, 0.83 in seven variables, and 0.75 and 0.60 in the variables "job/role" and "rapidity/agility," respectively. Because the minimum CVI required to maintain the variables was 0.83, the latter two were removed. Three new variables were added following the experts' recommendations: skin color, clothing, and couple. Therefore, we obtained 18 final variables. Throughout the process, study authors met on several occasions to reach a consensus regarding the final criteria for the analyses and codification of the films.

Once the CVI of all the variables was established, two researchers (one female and one male) separately watched the same four films chosen randomly. Their coded responses to the films were analyzed to obtain the interrater reliability through Cohen's kappa. This reliability was calculated at the beginning of coding to ensure that there was not coder drift. According to Landis and Koch's (1977) criteria, categories had a moderate to very good reliability, with scores ranging between 0.49 and 0.93, and an average score of 0.68 (Table 3). Because the kappa scores were appropriate, the remaining 20 films were divided between the two researchers and watched in their entirety. The films selected for the interrater reliability test were also included in the statistical analyses by choosing each observer's scores randomly.

Table 3. Interrater Reliability of Each Category.

Category	Cohen's Kappa
General features	0.93
Physical appearance	0.68
Physical abilities	0.82
Cognitive and psychological features	0.49
Interpersonal relationships	0.53

The characters were coded during film viewing. Although some of them changed certain aspects throughout the film (e.g., behavior, popularity), they were always coded with the main characteristics that films were relaying about the characters because these are the ones that best define and typify the characters.

Statistical Analysis

SPSS 24 software was used for statistical analyses. Descriptive analyses included the frequency of each variable's options for all characters and by gender. Proportions of each variable's options were also compared by gender through z tests with Bonferroni corrections. Spearman's correlations were conducted for assessing relationships between ordinal variables (i.e., age group, weight status, height, physical attractiveness, musculature, intelligence, friends, affection, mockery, and popularity). Clothing was also considered as an ordinal variable after excluding characters without clothing ($n = 5$). For associations between categorical variables or between categorical and ordinal variables, chi-square tests were conducted. Chi-square tests with up to 22.2% of their cells showing an expected cell count < 5 were considered as valid, despite the loss of statistical power (Field, 2013). These cases were appropriately noted. For those tests that used variables with only two categories (i.e., 2 x 2 tables), p values from Fisher's exact tests were used (Field, 2013). A Bonferroni correction was employed when comparing the cells' prevalence in statistically significant chi-square tests.

Results

Descriptive Results

Refer to Table 4 for prevalence of all measured characteristics, expressed as percentages, of all assessed film characters and by gender.

Table 4. Percentages for Prevalence of Variables for All Characters and by Gender.

Category	Variables	Codes	% all	% male	% female
General features	Gender		100*	64.6	35.4
				% within male	% within female
	Type of character	Protagonist	48.5	45.2	54.3
		Minor	42.3	40.5	45.7
		Antagonist	9.2*	14.3	0
	Age group	Child or adolescent	28.5	26.2	32.6
		Adult	60.8	61.9	58.7
		Elderly	10.8	11.9	8.7
	Couple	Yes	15.4	13.1	19.5
		No	84.6	86.9	80.4
Physical appearance	Weight status	Slimmer than average	13.1	11.9	15.2
		Average	66.2	61.9	73.9
		Larger than average	20.8*	26.2	10.9
	Height	Short	12.3	11.9	13
		Average	68.5	63.1	78.3
		Tall	19.2*	25	8.7
	Attractiveness	Unattractive	10.8	13.1	6.5
		Average	75.4	76.2	73.9
		Attractive	13.8	10.7	19.6
	Musculature	Not muscular	7.7	7.1	8.7
		Average	81.5	78.6	87
		Muscular	10.8	14.3	4.3
	Clothing[a]	Loose fitting	6.4	7.5	4.4
		Average fitting	76.0	75	77.8
		Close fitting	17.6	17.5	17.8
	Skin color	White	73.1	72.6	73.9
		Other skin colors	26.9	27.4	26.1
Physical abilities	Strength	Weak	6.9*	8.3	4.3
		Average	77.7*	71.4	89.1
		Strong	15.4*	20.2	6.5
	Physical disabilities	Yes	3.8	4.8	2.2
		No	96.2	95.2	97.8
Cognitive and psychological features	Intelligence	Unintelligent	3.8	4.8	2.2
		Average	73.8*	66.7	87
		Very smart	22.3*	28.6	10.9
	General behavior	Violent	6.9	9.5	2.2
		Antisocial	17.7	15.5	21.7
		Kindhearted	59.2	61.9	54.3
		Other behavior	16.2	13.1	21.7

Interpersonal relationships	Friends	Few or none	25.4	23.8	28.3
		Average group of friends	54.6	54.8	54.3
		A lot of friends	20.0	21.4	17.4
	Affection	Never	36.9	40.5	30.4
		Sometimes	50.8	48.8	54.3
		Usually	12.3	10.7	15.2
	Mockery	None	76.2	71.4	84.8
		Mockery appearance	13.1	14.3	10.9
		Mockery personality/activity	10.8	14.3	4.3
	Popularity	Unpopular	14.6	16.7	10.9
		Average	58.5	53.6	67.4
		Very popular	26.9	29.8	21.7

Note. n_{males} = 84; $n_{females}$ = 46.
[a]N = 125; n_{males} = 80, $n_{females}$ = 45.
*Significant differences in prevalence by gender (p < .05).

General Features of the Characters

Of the 130 characters analyzed, a significant majority were categorized as male (n = 84 vs. female, n = 46). Almost two thirds of characters were portrayed as adults (60.8%), and most of them were single (84.6%). Characters of color (including unnatural colors such as blue, red, and green, as seen in the film *Inside Out*) were in the minority (26.9%) relative to those depicted as White (73.1%). A total of 48.5% of characters were protagonists. Only 9.2% were antagonists, none of whom were female; this was the only statistically significant gender difference in prevalence within these categories.

Physical Appearance and Physical Abilities

Most characters (66.2%) were depicted as having an average body size. However, male characters were displayed as large or heavy significantly more frequently than females (26.2% and 10.9%, respectively). There was also a statistically significant gender difference for height, with male characters represented as tall more frequently than females (25% and 8.7%, respectively). Males were also depicted as muscular (14.3%) more frequently than females (4.3%). Prevalence of portrayed attractiveness was higher among female characters in comparison with males (19.6% and 10.7%, respectively). However, gender differences for these latter two characteristics did not reach statistical significance.

More than two thirds of characters displayed average physical strength, while 15.4% displayed a lot of strength. There was a statistically significant higher prevalence of both strong and weak characters among males (20.2% and 8.3%, respectively) relative to females (6.5%, and 4.3%, respectively). An overwhelming majority of characters (96.2%) did not show any kind of physical disability, and there were no gender differences in prevalence.

Cognitive and Psychological Characteristics

Most characters (73.8%) displayed average intelligence, although there was a significantly higher prevalence of above-average intelligence among male characters relative to females (28.6% vs. 10.9%, respectively). More than half of all characters (59.2%) displayed kindhearted behaviors in both males and females (61.9% and 54.3%, respectively). A very small minority of characters displayed violent conduct, and within those, such behaviors appeared more common among males (9.5%) than females (2.2%). However, there were no significant differences by gender on any of the behavior categories.

Interpersonal Relationships

More than half of the characters (54.6%) had an average-sized group of friends, a quarter of them (25.4%) had fewer than three friends, and the remainder had a lot of friends (20%). Nearly half of the characters received some display of affection, while more than a third did not receive any (40.5% among males, 30.4% among females). A few characters were mocked by other characters because of their physical appearance (14.3% males and 10.9% females) or their personality and/or actions (14.3% males and 4.3% females). Regarding popularity, 26.9% of characters were depicted as very popular, with slightly higher frequency among male (29.8%) versus female characters (21.7%). There were no significant gender differences on prevalence of any of these variables.

Associations Between Physical Appearance and Personality and Social Attributes by Gender

A total of 29 significant associations were found between all the variables. However, because this study's focus is on the relationships between idealized and gender-stereotyped physical appearance, and personality and social attributes of characters, we present the correlations between variables separately for male and female characters (see Table 5). Refer to Appendix for all correlations between all variables for the whole sample.

Among male characters, physical attractiveness was significantly and positively associated with number of friends ($r_s = .288$; $p < .01$) and positive displays of affection ($r_s = .264$; $p < .05$). Among female characters, physical attractiveness was significantly associated with clothing ($r_s = .345$; $p < .05$), such that characters wearing close-fitting clothes were more likely to be perceived as attractive. Also, physical attractiveness was negatively associated with weight status ($r_s = -.398$; $p < .01$) in females. Among male characters, however, weight status was positively correlated with strength ($r_s = .240$; $p < .05$) and clothing type ($r_s = .221$; $p < .05$), such that larger characters were more likely to be portrayed as strong and to wear close-fitting clothes.

Table 5. Spearman's Correlations Between All Characteristics and Significant Chi-Square Results by Gender.

	1	2	3	4	5	6	7	8	9
1. Type of character	-	14.910**[d]	2.427[d]	13.410**[d]	3.895[d]	10.670*[d]	2.375[d]	2.024*[d]	4.465[a]
2. Age group	0.665[d]	-	7.789*[d]	−.089[c]	.053[c]	−.125[c]	.046[c]	.079[c]	2.497[a]
3. Couple	1.992[d]	7.874*[d]	-	0.096[d]	0.111[d]	0.301[d]	0.257[d]	0.501[d]	0.000[e]
4. Weight status	2.877[d]	.030[c]	1.530[d]	-	.184[c]	−.012[c]	.173[c]	.221*[c]	5.386[a]
5. Height	10.733**[d]	.060[c]	1.696[d]	−.288[c]	-	.037[c]	.510***[c]	.200[c]	1.774[a]
6. Physical attractiveness	2.784[d]	−.245[c]	0.793[d]	−.398**[c]	.131[c]	-	.165[c]	.052[c]	1.369[d]
7. Musculature	1.766[d]	−.250[c]	0.566[d]	−.001[c]	−.007[c]	−.092[c]	-	.263*[c]	5.018[d]
8. Clothing	0.204[d]	−.144[c]	2.780[d]	−.059[c]	.124[c]	.345*[c]	.155[c]	-	1.417[d]
9. Skin color	2.791[b]	8.073*[d]	0.087[d]	17.170***[d]	3.789[d]	9.662**[d]	1.917[d]	0.756[d]	-
10. Strength	2.222[d]	.329*[c]	1.365[d]	−.118[c]	.151[c]	.120[c]	.374**[c]	.132[c]	1.664[d]
11. Physical disabilities	1.217[bd]	10.733**[d]	0.249[bd]	0.361[d]	0.284[d]	0.361[d]	0.153[d]	0.292[d]	2.896[bd]
12. Intelligence	1.262[d]	−099[c]	1.678[d]	.141[c]	.159[c]	.057[c]	.196[c]	.031[c]	3.602[d]
13. General behavior	2.713[d]	5.713[d]	2.536[d]	4.773[d]	16.892**[d]	10.114[d]	10.764[d]	13.584*[d]	0.672[d]
14. Friends	12.797*[d]	.028[c]	0.298[d]	.245[c]	−.008[c]	.158[c]	−.014[c]	−.170[c]	6.754*[d]
15. Affection	1.596[d]	.150[c]	5.532[d]	−.074[c]	.190[c]	.137[c]	−.129[c]	−.069[c]	4.569[d]
16. Mockery	0.497[d]	6.400[d]	0.509[d]	5.873[d]	3.443[d]	2.365[d]	1.380[d]	3.663[d]	1.278[d]
17. Popularity	14.172*[d]	.032[c]	2.565[d]	.099[c]	.261[c]	.160[c]	.029[c]	.045[c]	9.281*[d]

	10	11	12	13	14	15	16	17
1. Type of character	1.842[d]	0.812[d]	6.433[d]	30.225*[d]	9.013[e]	13.660*[d]	15.118*[d]	7.831[e]
2. Age group	.033[c]	0.619[d]	-.073[c]	12.713*[d]	.115[c]	−.191[c]	6.841[d]	.083[c]
3. Couple	2.140[d]	0.573[bd]	5.230[d]	5.039[d]	1.686[d]	9.033*[d]	2.134[d]	3.003[d]
4. Weight status	.240*[c]	1.505[d]	−.028[c]	9.634[d]	−.010[c]	−.088[c]	7.269[d]	.094[c]
5. Height	.463***[c]	0.594[d]	−.216*[c]	12.375[d]	−.053[c]	.007[c]	1.641[d]	.110[c]
6. Physical attractiveness	.048[c]	0.905[d]	.014[c]	17.065**[d]	.288**[c]	.264*[c]	13.687**[d]	.152[c]
7. Musculature	.761***[c]	0.644[d]	−.252*[c]	4.682[d]	.080[c]	−.065[c]	3.542[d]	.192[c]
8. Clothing	.329**[c]	4.620[d]	−.091[c]	5.076[d]	.046[c]	−.070[c]	3.237[d]	.240*[c]
9. Skin color	10.928**[d]	0.12[bd]	1.826[d]	1.128[d]	0.109[a]	3.850[a]	0.096[d]	4.540[a]
10. Strength	-	2.458[d]	−.261*[c]	10.587[d]	.111[c]	−.050[c]	3.445[d]	.187[c]
11. Physical disabilities	0.125[d]	-	3.806[d]	2.373[d]	2.617[d]	0.545[d]	4.620[d]	1.092[d]
12. Intelligence	−.018[c]	8.382*[d]	-	17.966*[d]	−.047[c]	.214[c]	5.600[d]	.235*[c]
13. General behavior	13.250*[d]	0.859[d]	5.704[d]	-	7.247[d]	12.828*[d]	7.414[d]	12.367[d]
14. Friends	.118[c]	0.859[d]	.141[c]	9.238[d]	-	.221*[c]	12.949[d]	.425***[c]
15. Affection	−.089[c]	5.695[d]	.423**[c]	14.767*[d]	.136[c]	-	0.647[d]	.303**[c]
16. Mockery	2.073[d]	22.489***[d]	4.119[d]	1.460[d]	1.274[d]	5.388[d]	-	18.296[d]
17. Popularity	−.138[c]	0.495[d]	.177[c]	14.192*[d]	.417**[c]	.299*[c]	9.848*[d]	-

Note. Males above; females below. All correlations are based on n_{males} = 84 and $n_{females}$ = 46, but clothing with n_{males} = 80, $n_{females}$ = 45.
[a]Chi-square. [b]The *p* value from Fisher's exact test (bilateral). [c]Spearman's rho. [d]Not valid chi-square analysis. [e]Almost valid chi-square analysis (22.2% of the total frequencies had expected cell counts < 5).
p < .05. **p* < .01. ***p* < .001.

There were further significant associations between other variables of physical appearance and personality traits, particularly for male characters. Musculature was positively associated with strength in both male (r_s = .761; p < .001) and female characters (r_s = .374; p < .01). Strength was also positively associated with height (r_s = .463; p < .001) and clothing (r_s = .329; p < .01) among males, and with age group among females (r_s = .329; p < .05). Among male characters, musculature was also positively associated with clothing (r_s = .263; p < .05), such that more muscular characters wore more close-fitting clothing. Also, in male characters, close-fitting clothing was significantly related to popularity (r_s = .240; p < .05). Among male characters, intelligence was negatively associated with musculature (r_s = −.252; p < .05), height (r_s = −.216; p < .05), and strength (r_s = −.261; p < .05). Among females, there were no other significant associations between physical appearance and social or personality variables.

Discussion

This study analyzed 130 characters from 24 popular recent children's films and examined associations between physical appearance and other personal, social, and behavioral characteristics by gender. As has been found in previous studies (e.g., Aley & Hahn, 2020), most characters we analyzed were male: Only one third of characters were female, just over half of whom were protagonists, and none were antagonists. This means that children watching these films are predominantly seeing both the "good guys" and "bad guys" as just that— males (Hoerrner, 1996). This might lead children to believe that women are less important than men, and to be more likely to select male characters as role models (Aubrey & Harrison, 2004).

We hypothesized that characters would reflect media's idealized and gender-stereotyped appearance standards, with female characters displaying a thin body type and male characters displaying a muscular body type. As has been found in a recent content analysis of young children's TV shows (Walsh & Leaper, 2019), most of the characters possessed average features. Nevertheless, our results showed that male characters were more likely than female characters to be portrayed as muscular, large, and tall. Females were portrayed more frequently as slimmer than average, and more attractive than average, relative to male characters. These results support our hypothesis and demonstrate the presence of stereotypically gendered characters in children's films, as has been found in earlier research (Harriger et al., 2018; Herbozo et al., 2004).

As noted in previous studies (e.g., Anschutz, Engels, & Van Strien, 2012), some characters in our study appeared to be exaggerated representations of the current beauty ideal of thinness. For example, the characters Rapunzel (*Wreck-It Ralph*), Barbie (*Toy Story 3*), Honey Lemon (*Big Hero 6*), and Sam Sparks and Flint Lockwood (*Cloudy With a Chance of Meatballs*) all displayed unrealistically proportioned and extremely thin bodies. Viewing media content with a high proportion of thin bodies can have detrimental effects on children's body image (Dohnt & Tiggemann, 2006), regardless of whether those bodies belong to real actors (Mastro & Figueroa-Caballero, 2018) or animated characters (Anschutz, Engels, Van Leeuwe, & Van Strien, 2009). Longitudinal studies also confirm that among preschool girls, media exposure predicts later preferences for a thin ideal body, and dietary restraint (Harrison & Hefner, 2006; Rodgers et al., 2017). Indeed, for very young children, exposure to animated characters may have stronger effects than the exposure to real bodies: After watching a few minutes of popular children's films, preschool girls believed that they could be princesses and expressed concern about being overweight (Hayes & Tantleff-Dunn, 2010). In short, although not all

studies have found negative effects from engagement with female stereotypes, such as Disney princesses (Coyne, Linder, Rasmussen, Nelson, & Birkbeck, 2016) and Barbie dolls (Harriger, Schaefer, Thompson, & Cao, 2019), considerable evidence suggests that exposure to characters with idealized body types can influence even very young children's perceptions of and attitudes toward their own body and the bodies of others.

Literature has demonstrated that such body types are related to more positive traits in the media characters (e.g., Harriger et al., 2018). Thus, our second hypothesis was that larger or heavier characters would be associated with less desirable personality traits or social characteristics, and slimmer than average characters would be associated positive qualities and behaviors, such as being displayed as attractive, popular, or intelligent. Because media representations of physical appearance and gender tend to be stereotyped (i.e., muscularity and strength as masculine vs. thinness and kindness as feminine), we examined these associations separately for male and female characters. In contrast to earlier studies (Harriger et al., 2018; Herbozo et al., 2004), we did not find significant relationships between physical appearance and personality or social attributes among females. However, as expected, we found that female characters who were perceived as physically attractive were more likely to be slimmer than average, like in previous studies (Klein & Shiffman, 2005, 2006).

Also, we found that among female characters, those who were more attractive were more likely to wear tight clothing. This finding supports those from previous research: Most female dolls are thin and dressed in body-shaping clothing, endorsing gender stereotypes based on the sexual objectification of female bodies (Boyd & Murnen, 2017). We know that the media appropriate such gender stereotypes to sell lifestyles and products, including clothing (Goodin, Van Denburg, Murnen, & Smolak, 2011), and that children are influenced by such messages: Girls between 3 and 6 years of age were found to believe that having the right clothing or accessories would make them a princess (Hayes & Tantleff-Dunn, 2010). Furthermore, female superheroes tend to be dressed in "sexy" or figure-hugging clothing, whereas male superhero characters are more likely to wear modest or functional clothing (Baker & Raney, 2007). Although attractiveness was not associated with clothing type among the male characters, we did find that wearing close-fitting clothing was positively related to their popularity, musculature, and strength. As far as we are aware, these associations have not been addressed in previous content studies of children's animated films.

Other findings of note were related to differences in associations between characters' appearance and personal attributes that could be understood to reflect gender stereotypes. Among male characters, having a larger and taller than average body and being more muscular were associated with strength. These findings align with previous studies, which found that very young children associated the presence of muscles with higher strength (Drummond, 2012) and believed that larger figures were stronger than slimmer figures (Birbeck & Drummond, 2006). Furthermore, above-average attractiveness among male characters was also associated with having more friends and receiving more affection from other characters. A previous content analysis of Disney films similarly found that attractive characters were more likely to be romantically involved, although the authors did not consider whether that relationship was the same for both genders (Bazzini et al., 2010). Social popularity is particularly important for young people as they are developing their social networks, so reinforcing any association between popularity and being attractive could encourage children to aspire to narrow and unrealistic body size and shape ideals (Robinson, Callister, & Jankoski, 2008).

There were, however, some negative associations between male characters' body types and other characteristics: Muscular, taller, and stronger characters, as opposed to overweight characters, were more likely to be portrayed as less intelligent, as has been found in previous research (Eisenberg, Carlson-McGuire, Gollust, & Neumark-Sztainer, 2015; Klein & Shiffman, 2005, 2006). Our finding could reflect the media's tendency to reinforce a "dumb jock" stereotype, which some authors have argued stems from the idea that athletes are so focused on training that they do not pay attention to their intellectual development (Wininger & White, 2008).

Although findings from the current study do evidence the existence of idealized bodies and stereotyped gender representations in children's animated films, we also found glimmers of hope. In this type of media content at least, it would appear that the characters that children are exposed to are becoming more diverse and focus less on narrow and often unrealistic appearance standards, as has been identified in past studies. The low prevalence in our study of female characters with thin ideal bodies represents a continuing downward trend; this was first pointed out by Harriger and colleagues (2018), who noted lower incidence in their study relative to Herbozo et al. (2004). Unlike previous research (Baker & Raney, 2007), we also found that some female characters were portrayed as muscular and strong, contesting traditional gender stereotypes. However, compared with Harriger and associates (2018), who found prevalence of male and female idealized bodies to be roughly equal, we found a higher incidence of muscular male characters relative to female characters in the films we analyzed. This would suggest that stereotypical gender representations of maleness and male bodies still prevail in the media and may go some way to explaining why incidence of muscularity-oriented body dissatisfaction and body change behaviors are increasing among men worldwide (Thornborrow, Onwuegbusi, Mohamed, Boothroyd, & Tovee, 2020).

Beyond our study's aims, we noted that the films we examined often conveyed verbal messages related to physical appearance and weight. For example, male characters were told, or said to themselves, "Aw, you are a twig, mijo. Have some more [food]" (*Coco*; Anderson, Drumm, Lasseter, Unkrich, & Molina, 2017); "I just have to lose 30 pounds in the next eight hours" (*Trolls*; Shay & Mitchell, 2016); "Oh, that's attractive!" (*Brave*; Lasseter, Sarafian, Andrews, Chapman, & Purcell, 2012); and "You should work on your grip, my dude. It's a bit womanly" (*Epic*; Davis, Forte, & Wedge, 2013). Female characters were told, "Your butt is getting bigger. We thought you were a dragon" (*How to Train Your Dragon*; Arnold, DeBlois, & Sanders, 2010), and in *Shrek the Third* (Durán, Nolan, Warner, Miller, & Hui, 2007), other female characters comment to Fiona that she will have stretch marks as a negative consequence of being pregnant. According to social learning theory and cultivation theory, such messages and stereotypes portrayed in the media impact children's development and shape their understanding of the world. This is especially true for very young children, who are particularly impressionable to new social learning input given their limited cognitive skills (Calvert, 2001).

Our findings must be considered in light of some limitations. First, adult observers assessed the characters and the messages that the films convey; an assessment done by children may have produced different findings. In our analyses, a number of chi-square analyses could not be considered because these did not meet the statistical assumptions. Also, this study did not consider the impact of these films on children's body image. Future studies would do well to examine associations between viewing such films and internalization of appearance ideals and body dissatisfaction among children. Additionally, more studies

are needed to assess the content and impact of newer types of media (e.g., YouTube, children's channels). Finally, as noted earlier, a conspicuous number of verbal comments referenced the same appearance, weight, and gender stereotypes as the visual content. We recommend that future studies include analysis of the verbal content of children's media because this may be further reinforcing narrow appearance standards and potentially damaging stereotypes to young viewers.

Despite discussed limitations, the current study has several strengths. As suggested by Klein and Shiffman (2005), we have provided extensive information about visual media content aimed specifically at children by analyzing the most relevant characters of 24 recent popular children's films in their entirety. First, we measured the frequency of physical, personal, and social attributes of all characters and among male and female characters. We then further examined the relationships between male and female characters' physical appearance, attractiveness, and ascribed personality traits and behaviors. Unlike previous studies that used only dichotomous variables to establish the presence or absence of a message in a film, we analyzed several characters by including variables that contained a number of response options.

To conclude, this study demonstrates that children's films tend to endorse gender stereotypes regarding attractiveness and appearance standards. Through such films, children may learn what behaviors, physical appearance, and roles are associated with each gender. This can shape their understanding of gender, which develops from a young age. Messages from children's films may also influence children's body image and encourage bias by teaching them that certain bodies are associated with positive or negative attributes. The societal reinforcement of associations between certain appearance standards and types of characteristics via both visual and verbal messages results in standards becoming accepted as the desired "norm." Finally, although there seems to be a positive trend toward lower prevalence of gender and appearance stereotypes in these animated children's films, more studies are needed to confirm this and to further examine the influence of such media content on children's body image.

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Appendix

Spearman's Correlations Between All Assessed Characteristics of the Characters and Significant Chi-Square Results.

	1	2	3	4	5	6	7	8	9
1. Gender									
2. Type of character	7.269*[a]								
3. Age group	0.765[a]	14.491**[e]							
4. Couple	0.956[b]	4.280[a]	15.259***[a]						
5. Weight status	4.257[a]	9.545*[e]	−.032[c]	0.380[d]					
6. Height	5.139[a]	8.203[d]	.062[c]	1.180[d]	.086[c]				
7. Physical attractiveness	2.895[a]	12.045*[e]	−.176*[c]	0.646[d]	−.154[c]	.040[c]			
8. Musculature	3.075[d]	3.048[d]	−.031[c]	0.183[d]	.140[c]	.387**[c]	.067[c]		
9. Clothing	0.451[a]	1.602[d]	−.001[c]	2.216[d]	.127[c]	.165[c]	.151[c]	.219*[c]	
10. Skin color	0.025[b]	2.326[a]	3.071[a]	0.044[b]	14.232**[a]	4.755[a]	4.114[d]	6.085*[d]	0.929[a]
11. Strength	5.516[a]	1.283[d]	−.048[c]	0.476[d]	.176*[c]	.399***[c]	.051[c]	.682***[c]	.265**[c]
12. Physical disabilities	0.538[bd]	1.907[d]	0.543[d]	0.085[bd]	1.636[d]	0.743[a]	1.146[d]	0.813[d]	1.305[d]
13. Intelligence	6.350*[d]	7.452[d]	−.062[c]	6.787*[d]	.030[c]	−.100[c]	.000[c]	−.135[c]	−.065[c]
14. General behavior	4.640[a]	31.161***[d]	13.154*[d]	6.993[d]	5.263[d]	13.647*[d]	23.425**[d]	10.897[d]	7.447[d]
15. Friends	0.475[a]	20.063***[e]	.092[c]	1.544[a]	.084[c]	−.031[c]	.236**[c]	.060[c]	−.029[c]
16. Affection	1.481[a]	13.531*[e]	−.076[c]	14.715**[a]	−.089[c]	.042[c]	.236**[c]	−.098[c]	−.017[c]
17. Mockery	3.687[a]	11.447**[e]	7.185[d]	2.855[d]	6.431[d]	2.652[d]	16.271**[d]	1.744[d]	2.531[d]
18. Popularity	2.365[a]	18.635**[e]	.068[c]	5.751[a]	.099[c]	.150[c]	.146[c]	.153[c]	.178*[c]

	10	11	12	13	14	15	16	17	18
11. Strength	9.245*[a]								
12. Physical disabilities	0.452[bd]	2.618[d]							
13. Intelligence	2.093[d]	−.198*[c]	5.064[d]						
14. General behavior	0.260[a]	17.779**[d]	3.423[d]	23.867**[d]					
15. Friends	2.200[a]	.114[c]	2.388[d]	.010[c]	11.294[d]	5.566[d]			
16. Affection	0.237[a]	−.067[c]	0.382[d]	.241**[c]	24.110***[d]	19.435**[d]	.185*[c]		
17. Mockery	0.095[d]	3.580[d]	4.186[d]	7.502[d]	9.187[d]	3.432[d]	12.257*[d]	1.151[A]	
18. Popularity	2.176[a]	.117[c]	1.265[d]	.220*[c]	23.137**[d]	5.201[d]	.422***[c]	.300**[c]	24.225***[d]

Note. All correlations are based on *N* = 130, except clothing (*N* = 125).
[a]Chi-square. [b]The *p* value from Fisher's exact test (bilateral). [c]Spearman's rho. [d]Not valid chi-square analysis. [e]Almost valid chi-square analysis (i.e., 22.2% of the total frequencies had expected cell counts < 5).
*p < .05. **p < .01. ***p < .001.