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Action Figures and Men

Christopher Barlett,^{1,3} Richard Harris,¹ Sara Smith,¹ and Jennifer Bonds-Raacke²

Three studies were conducted to determine whether action figures contributed to negative body images in the young adult men who handled them. In Study 1 and Study 2, participants were randomly assigned to different conditions to handle action figures with different muscularity levels. The participants were instructed to place the action figures into various positions for a set time limit. Following the action figure manipulation, the participants completed scales to assess aspects of their body images (i.e., self-esteem, body esteem, and body satisfaction). Overall, the results indicate that touching and manipulating the more unrealistically muscular action figures significantly decreased participants' body esteem. In Study 3, we used a more realistic figure whose muscularity was more like an average man's. Following the same procedure as in Study 1 and Study 2, results showed that there was no significant difference between this action figure and the control group on all of the body image scales.

KEY WORDS: action figures; body image; males; toys; self-image.

Negative body image is a very serious problem in today's society. Studies have linked negative body image to eating disorder symptomatology (Bohne, Keuthen, Wilhelm, Deckersback, & Jenike, 2002) and to an increased steroid usage in men (Blovin & Goldfield, 1995). For the purpose of this study, negative body image was defined as: *a way of thinking and feeling about one's body that negatively influences the person's self-esteem, body esteem, and body satisfaction.* This definition is important because it incorporates three components that have been identified in the literature to be linked to body image: self-esteem (Baranowski, Jorga, Djordjevic, Marinkovic, & Hetherington, 2003; Cohane & Pope, 2001), body esteem (McCabe & Ricciardelli, 2003), and body satisfaction (Olivardia, Pope, Borowiecki, & Cohane, 2004; Ricciardelli, McCabe, & Banfield, 2000). Studies have shown that people with negative body image have lower self-esteem, lower body esteem (Bohne et al., 2002), and lower body satisfaction (Sarwer,

Wadden, & Foster, 1998) than those with a positive body image. Therefore, it must be asked: Where does negative body image originate? One obvious answer is family dynamics and peer influences, which research has shown to predict the probability of establishing a negative body image (Kearney-Cooke, 2002; Murray, Touyz, & Beumont, 1995; Phares, Steinberg, & Thompson, 2004; Ricciardelli et al., 2000). Another possible answer is the media, and research has shown that different media categories (i.e., magazines, television shows, and television commercials) may contribute to negative body image development in viewers. A meta-analysis conducted by Groesz, Levine, and Murnen (2002), showed that, over 43 studies, women's body image was significantly more negative after viewing media images of thin characters.

Research on negative body image produced by the media has predominantly been done with women. These studies demonstrate that after viewing media images of thin women, female viewers have lower self-esteem (Smith, 2000), higher anxiety levels, (Lin & Kulik, 2002), lower body satisfaction (Hargreaves & Tiggeman, 2002; Harrison, 2000; Palladino & Pritchard, 2003), and lower body esteem (Ogden

¹Kansas State University, Manhattan, Kansas.

²Briar Cliff University, Sioux, Iowa.

³To whom correspondence should be addressed at Department of Psychology, Bluemont Hall 492, Kansas State University, Manhattan, Kansas 66506-5302; e-mail: cpb6666@ksu.edu.

& Munday, 1996). Likewise, these psychological effects go in the opposite direction after viewing media images of obese women (Strong, 2001). In other words, when women view media images of thin women, their own body image becomes more negative, whereas women who view media images of obese women may report a significant increase in their self-image. All of this research suggests that women are affected negatively by viewing thin women in the media.

As previously stated, research on negative body image has traditionally been thought of as a woman's problem, and, until recently, studies of negative body image have involved only women participants. However, recently researchers have examined negative body image in male populations. These studies have demonstrated that, like women, men also have lower self-esteem (Miller, 2002; Palladino & Pritchard, 2003), lower body satisfaction (Agliaia & Tantleff-Dunn, 2004; Leit, Gray, & Pope, 2002), and lower body esteem (Leit et al., 2002) after viewing certain media images. In addition, lower body satisfaction created by viewing certain media predicts increased exercise to alter body shape (Ricciardelli et al., 2000) and increased steroid usage (McCabe & Ricciardelli, 2004). Studies have suggested that men and women react in different ways to the same media. For example, McCabe, Ricciardelli, and Finemore (2002) showed that men want to increase their muscle tone and women want to decrease their weight after viewing media images that emphasize and display physical appearance of the characters in the images. Kalodner (1997) has shown that women have a higher body concern after viewing media images of thin women, but men do not have these concerns after viewing media images of thin men. This suggests that women are most negatively affected by thin women in the media, whereas men are most negatively affected by muscular men in the media.

This difference between men and women is very important, because it shows that men as well as women are susceptible to feeling badly about their bodies after viewing certain media, but these feelings are triggered by a different type of media image. In fact, Leit, Gray, and Pope (2001) have shown that the idealized male body type is toward the more muscular; society's view of muscles is: "Bigger is better." Women are conditioned to think that: "Thinner is better." Research has shown, in general, that men strive to be heavier in muscle, whereas women strive to be thinner (Furnham, Badmin, & Sneade, 2002).

Another possible origin of negative body image that has not been explored in the literature is toys (i.e., Barbie dolls and action figures). Even though there has not been a direct link between Barbie or action figures and negative body image, research has laid the groundwork for such studies. One study showed that people perceive Barbie as beautiful (Margo, 1997), although her measurements are unrealistic and dangerously so (Turkel, 1998). If Barbie's measurements were extrapolated to that of an average woman, she would lack the necessary 17–22% body fat for menstruation, and her measurements would be 39–21–33 in., which is unattainable (Turkel, 1998). The probability of a woman attaining Barbie's measurements is less than 1 in 100,000 (Norton, Olds, Olive, & Dank, 1996). A recent study showed that action figures are getting more muscular over time (Pope, Olivardia, Gruber, & Borowiecki, 1999). Pope et al. (1999) standardized and measured the muscles of different action figures over time and compared them to "average" men (Australian lacrosse players). The results are represented in Table I, which clearly shows that the 1998 G.I. Joe was more muscular than its earlier 1973 counterpart. In addition, Table I demonstrates that some action figures, such as the 1998 Wolverine, for example, have a bicep measurement equal to the waist measurement and a chest that is twice the size of the waist. This type of muscularity is unrealistic, and, like Barbie's measurements, cannot be accomplished. However, these toys are available for children to play with, touch, and examine.

Table I. Measurements of Representative Action Figures Extrapolated to a Height of 70 in.

Toy, date	Waist	Chest	Bicep
"Reference Group" ^a	33.3	34.2	11.8
"Average Man" ^{b,c}	29.6	36.3	11.8
G.I. Joe (1973) ^c	31.7	44.4	12.2
G.I. Joe Extreme (1998) ^c	36.5	54.8	26.8
Wolverine (1998) ^c	33.0	62.0	32.0
WWE Flex'ems (2003) ¹	27.0	65.0	25.0
WWE Tag-Teamers (2003) ¹	30.0	48.0	20.0
Battle Action Hulk (2004) ²	50.5	72.7	32.3
Rapid Punch Hulk (2004) ²	41.5	65.0	31.0
Ken (1988) ³	26.2	35.0	11.6

Note. Differing superscript numbers dictate in which study the action figures were used.

^aAdapted from Norton et al. (1996), based on college students.

^bAdapted from Pope et al. (1999), based on Australian lacrosse players.

^cMeasurements adapted from Pope et al. (1999).

Overview of the Current Research

Therefore, the goal of the current research was to investigate whether action figures contribute to negative body image in men. Three empirical studies were conducted to explore whether there is a link between playing with action figures and negative body images. We predicted, for all three studies, that the more muscular the action figure, the more negative the body image the participants would report. In Study 1 we explored the effects of two action figures of different muscularity levels, but of the same height. In Study 2 we explored the effects of two action figures of the same muscularity levels, but different height. In Study 3 we examined the effects of a more realistic toy on the body image of male participants.

STUDY 1

The purpose of Study 1 was to determine whether playing with action figures can significantly affect the body image of those who handle them. We predicted that there would be a significant difference in measures of body image components as a result of the type of action figure handled. More specifically, participants were expected to have a more negative body image after touching action figures than would those participants who did not touch them. We also expected that the more muscular the action figure, the more negative the body image the participants would report.

In order to select the proper action figures, a pilot study was conducted to determine how muscular and how realistic certain action figures were. Five action figures were selected: WWE Flex'ems, WWE Tag-Teamers, Battle Action Hulk (Big Hulk), Rapid Punch Hulk (Little Hulk), and Ken. Participants ($N = 19$) rated each of the five action figures for muscularity and realism on a 5-point Likert scale that ranged from 1 (*not a characteristic*) to 5 (*definitely a characteristic*). A one-way analysis of variance (ANOVA) was conducted to compare the mean scores on the manipulation check for each action figure on the aforementioned dimensions. These results showed significant differences on the realism dimension, $F(4, 85) = 80.98, p < .001, \eta^2 = .79$, power = 1.00, and the muscularity dimension, $F(4, 85) = 80.71, p < .001, \eta^2 = .79$, power = 1.00. Bonferroni post hoc analyses were conducted, and showed that all the action figures differed significantly ($p < .001$) from each other on the muscularity dimension,

except for the two Hulk action figures. On the realism dimension, the results indicate that there were two clusters of action figures: the unrealistic action figures (WWE Flex'ems, Big Hulk, and Little Hulk) and the realistic action figures (WWE Tag-Teamers and Ken). The two clusters differed significantly from one another ($p < .001$), whereas figures within each cluster did not significantly differ from each other.

Method

Participants

Participants were 82 male students at a large public university in the Midwest. Their mean age was 18.9 years, with a standard deviation of 1.2 years; 72.6% of the participants were freshman, and the majority of the participants were White (89.2%). All participants received course credit for their General Psychology class.

There were three groups in Study 1: one control group and two experimental groups. The control group ($n = 32$) was only given the body image measures to complete, and their scores served as a baseline measure for which the two experimental groups could be compared. The first experimental group was the highly muscular group ($n = 22$); they manipulated the extremely muscular action figures and then completed the measures. The second experimental group was the moderately muscular group ($n = 28$); they manipulated moderately muscular action figures and then completed the questionnaires.

Materials

Based on the results of the pilot study, we used two types of action figures that differed significantly on the realism dimension. The first was designated as the highly muscular group, and these were WWE Flex'ems. Based on the standardization procedure of Pope et al. (1999), these figures' waists measured 27 in., their biceps measured 25 in., and their chests measured 65 in. The second set of action figures was designated as the moderately muscular group, and these were WWE Tag-Teamers. Their waists measured 30 in., their biceps measured 20 in., and their chests measured 48 in. As a result of the difference in the muscle size, they were designated as either highly muscular or moderately muscular. These action figures were carefully selected in such a way that they were similar in height, both had their shirts off, and they wore similar clothing. Table I contains the measurements for these action figures.

Questionnaires

A demographic questionnaire assessed participants' age, ethnicity, and year in school, as well as sports involvement, exercise habits, and whether they viewed professional wrestling (WWE) on television.

We adapted the Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987) to measure men's body satisfaction. The original BSQ was designed to measure body satisfaction in women. Therefore, this measure had to be adapted in such a way that the emphasis of the questions was on muscularity rather than thinness. For example, the original BSQ has a statement that reads "Have you become afraid that you might become fat or fatter?" That question was adjusted to read "Have you become afraid that you might become non-muscular?" The result was the "Adjusted BSQ," which consists of 24 items that utilize a Likert scale that ranges from 1 (*never*) to 6 (*always*). The total range of possible scores on this scale is 24–144; the higher the score, the higher the body dissatisfaction. The reliability of this scale for the present study was $\alpha = .87$.

The Rosenberg Self-Esteem Scale (RSE) was used to measure self-esteem (Rosenberg, 1965). This scale consists of 10 items that are scored on a Likert scale that ranges from 1 (*strongly disagree*) to 4 (*strongly agree*). An example item for this scale is: "I often feel that I am better than most people." The total possible range of this scale is 10–40, and it is scored such that higher scores indicate an elevated level of self-esteem. The reliability of this scale in the present study was $\alpha = .78$.

The Male Body Image and Esteem Scale (MBIES) was used to measure body esteem (Markunas, Christopher, Nelson, & Miller, 2003). This scale consists of 20 items that are scored on a Likert scale format that ranges from 1 (*not a characteristic*) to 7 (*extreme characteristic*). An example item is: "I like to have my picture taken." The total range of possible scores on this scale is 20–140; the higher the score, the higher the body esteem. The reliability for this scale for the present study was $\alpha = .88$.

Procedure

Three participants at a time came to the laboratory for a study on "Playing with Action Figures." All of the participants were randomly assigned to one of the three conditions. The participants in each experimental condition were given three identical action

figures. They were then instructed to manipulate the action figures for 30 min based on a list of possible positions. The list of positions included 13 positions in which all three of the action figures could be placed while standing up by themselves. An example of such a position is: "Fig. 1 faces Fig. 2; Fig. 3 lies on the ground hurt." If the participants finished all 13 positions before the 30 min subsided, the participants were instructed to repeat the series of manipulations. After the 30 min were up, the participants completed the questionnaires in the following order: MBIES, RSE, Adjusted BSQ, and demographic. When the questionnaires were completed, the participants were thanked and fully debriefed. The entire procedure took approximately 45 min. A1

Results and Discussion

Prior to the main analyses, correlations were calculated to determine how the body image components measured by the three questionnaires were related. The results show that the BSQ was not significantly correlated with the MBIES, $r = .20$, $p > .05$, but was significantly correlated with the RSE, $r = -.26$, $p < .05$. The MBIES was also significantly correlated with the RSE, $r = .44$, $p < .05$. Thus, the BSQ and the MBIES measured two different constructs, although self-esteem was correlated with each scale.

A MANOVA was conducted to determine the effect of the condition (e.g., control, highly muscular, and moderately muscular) on the three dependent variables of self-esteem, body satisfaction (BSQ), and body image esteem (MBIES). Data were first transformed to eliminate outliers, which resulted in 30 participants in the control group, 19 participants in the highly muscular group, and 24 participants in the moderately muscular group. To identify and eliminate extreme outliers, schematic box plots were produced, and those participants whose scores were outside of the outer fences (three times the fourth spread) were eliminated. Overall, MANOVA results were marginally significant, which indicates that the size of the action figure moderately affected the scores on the dependent measures, Wilks $\Lambda = .84$, $F(3, 67) = 1.99$, $p = .07$, $\eta^2 = .08$, power = .71. See Table II for mean scores on the three scales for each condition.

One-way univariate ANOVAs and post hoc tests were conducted as follow-up tests. ANOVA results indicate that scores on the MBIES significantly differed across conditions, $F(2, 70) = 3.25$, $p < .05$,

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Table II. The Mean Scores on the Different Scales for Each Condition for Study 1, Study 2, and Study 3

Condition	MBIES ^a	BSQ ^b	RSE ^c
Control	91.86 ¹	55.55	33.75
WWE Tag-Teamers (Moderate)	94.18 ¹	60.54	32.64
WWE Flex'ems (Muscular)	81.68 ²	52.42	33.42
Battle Action Hulk (Big Hulk)	76.16 ²	56.76	33.24
Rapid Punch Hulk (Little Hulk)	80.12 ²	53.23	32.34
Ken ^d	89.20	61.81	33.00

Note. Means with different superscript numbers indicate significant differences ($p < .05$).

^aHigher scores on the MBIES represent higher levels of body esteem.

^bHigher scores on the BSQ represent higher levels of body dissatisfaction.

^cHigher scores on the RSE represent higher levels of self-esteem.

^dData from Ken were only included in the analyses for Study 3. In addition, the data from Study 3 were not included in any previous analyses because of the differences between an action figure and a doll.

$\eta^2 = .09$, power = .60. Post hoc tests indicate that the highly muscular group differed significantly ($p < .05$) from both the moderately muscular group and the control group, which did not differ from each other. Additional one-way univariate ANOVA procedures resulted in non-significant ($p > .05$) differences between the means on the other two dependent measures.

These results indicate that, overall, manipulating action figures did have a significant effect on body esteem, as measured by the MBIES, but not on self-esteem or body satisfaction. Subsequent analyses revealed that the highly muscular group had significantly lower levels of body esteem than did either of the two other groups. This suggests that playing with the most muscular action figures contributed to lower levels of body esteem than were observed in the other two conditions.

STUDY 2

Study 2 was designed to determine if the size of different action figures had an effect on body image. We hypothesized that the participants who handled with the action figures would report more negative body image than would participants who did not handle the action figures. We expected that there would not be a difference between the two experimental groups because their action figures had the same levels of muscularity but different heights. This test was necessary in order to rule out the possibility that the height of the figure, rather than its

muscularity, produced the negative effect on body esteem (although height was not an issue in the first experiment).

Method

Participants

There were 81 male participants in this study; all were students at a large midwestern university. The mean age of these participants was 19.36 years with a standard deviation of 1.93 years. All received course credit for their General Psychology class. Similar to Study 1, most (70.4%) of the participants were freshman, and the majority of the participants were White (86.4%).

Materials

Two action figures of different heights but the same unrealistic muscularity levels were used. The first was the Battle Action Hulk, whose height was measured at 13.5 in. The second was Rapid Punch Hulk, whose height was measured at 6.75 in. Thus, the Battle Action Hulk was deemed Big Hulk, and the Rapid Punch Hulk was deemed Little Hulk. Following the standardization procedures used in the first study, the Big Hulk has a waist that measures 50.5 in., biceps that measure 32.3 in., and a chest that measures 72.7 in. The Little Hulk had a waist that measures 41.5 in., biceps that measure 31 in., and a chest that measures 65 in. Although the exact measurements are not equal, these action figures were used because they most closely resemble each other's muscle size, and they looked very similar with their green skin color, absence of a shirt, and the same clothing. Table I displays the size of the body parts for these two action figures.

Questionnaires

As in Study 1, the following questionnaires were used to measure the three components of body images: the Male Body Image Esteem Scale (MBIES; Markunas et al., 2003), the Adjusted BSQ, which is our variation of the original BSQ (Cooper et al., 1987), and the RSE (Rosenberg, 1965). For the present study, the reliability for the MBIES was $\alpha = .91$, the reliability for the BSQ was $\alpha = .94$, and the reliability for the RSE was $\alpha = .75$. In addition, a demographic questionnaire asked for the same information as in Study 1.

Procedure

Participants were randomly assigned to one of the two experimental conditions, each which was given a Hulk action figure. The Big Hulk action figure condition had a sample size of 25 male participants, and the Little Hulk action figure condition had a sample size of 26 male participants. The data from the Study 1 control group (participants who only completed the three questionnaires) were also used in the present study. The participants in the two experimental conditions were given two action figures to manipulate into 12 possible positions,⁴ as in Study 1, for 20 min.⁵

Results and Discussion

Prior to the main analyses, correlations were calculated to determine the relationships between the three scales. As in Study 1, there was a significant relationship between the MBIES and the RSE, $r = .24$, $p < .05$; however, it was not significantly correlated with the BSQ, $r = .01$, $p > .05$. In addition, the BSQ was significantly correlated with the RSE, $r = -.24$, $p < .05$. This result replicates the correlations in Study 1, which suggests that self-esteem is related to both body esteem and body satisfaction, but body esteem is not related to body satisfaction.

A MANOVA was conducted to determine the effect of the condition (control, Big Hulk, and Little Hulk) on the three dependent variables of self-esteem, body satisfaction (BSQ), and body image esteem (MBIES). The results show that there was a marginal difference between the conditions such that the height of the action figure affected the scores on the dependent measures, Wilks $\Lambda = .86$, $F(2, 76) = 2.00$, $p = .07$, $\eta^2 = .07$, power = .71. See Table II for mean scores on the three scales for each condition.

One-way univariate ANOVAs and post hoc tests were conducted as follow-up tests. ANOVA results indicated that scores on the MBIES significantly differed across conditions, $F(2, 76) = 4.74$, $p < .05$, $\eta^2 = .11$, power = .77. Specifically, post hoc tests revealed that the control group differed significantly

from the Big Hulk condition ($p < .05$) and the Little Hulk condition ($p < .05$), which did not differ from one another. ANOVA results indicated no significant differences among the three conditions on either the BSQ or the RSE ($p > .05$).

Overall, these results replicate Study 1 and indicate a significant effect of playing with action figures on the body image esteem measure. The two Hulks did not differ significantly from one another; however, the control group differed significantly from the two hulk groups. Combined with the results of Study 1, our data suggest that manipulating action figures negatively affects male body esteem, independent of the height or overall size of the action figure.

Additional analyses were performed to get an overall understanding of the effects of action figure manipulation on men's body images. In these analyses, we combined the results from Study 1 and Study 2 in an attempt to determine the effects and relationship between all of the action figures used in the previous two studies.

Prior to the main analyses, correlations were calculated to determine how the three scales were related to each other. These results were similar to those in Study 1 and Study 2 such that the BSQ was not significantly correlated with the MBIES, $r = .03$, $p > .05$, but it was significantly correlated with the RSE, $r = -.38$, $p < .05$. The MBIES was, also, significantly correlated with the RSE, $r = .39$, $p < .05$. These results indicate that across Study 1 and Study 2, body satisfaction and body esteem were not related to one another, even though both were significantly related to self-esteem.

A MANOVA was conducted to determine the overall effect across Study 1 and Study 2 of the five different conditions on the three dependent measures. These results show that there was a significant difference between the different conditions and the mean scores on the dependent measures, Wilks $\Lambda = .80$, $F(4, 114) = 2.23$, $p < .01$, $\eta^2 = .07$, power = .91. This suggests that there was a difference in the body image of the participants depending on to which condition they were assigned. See Table II for mean scores on the three scales.

In addition, one-way univariate ANOVAs and post hoc tests were conducted to determine the effects of the five different conditions for each of the three dependent measures. These ANOVA results indicate that there was a significant difference on the MBIES for the five different groups, $F(4, 119) = 4.85$, $p < .001$, $\eta^2 = .14$, power = .95. Specifically, the post hoc tests indicate that there was a significant

⁴The positions were created based on the flexibility of the action figures. Therefore, the positions in Study 1 were not those used in Study 2.

⁵Study 1 observations suggested that 30 min may be too long a duration. Participants were able to place the action figures into the positions multiple times. Hence, a 20 min time frame was implemented.

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difference ($p < .05$) between the unrealistic muscular action figures (WWE Flex'ems, Big Hulk, and Little Hulk) and the more realistic action figures (WWE Tag-Teamers). These results suggest that after participants handled the unrealistic action figures, they had significantly lower body esteem levels. This result is consistent with the cluster hypothesis mentioned earlier. As in previous analyses, the other two dependent measures (RSE and BSQ) did not produce significant effects ($p > .05$).

STUDY 3

Study 1 and Study 2 provided evidence that manipulating and handling the most unrealistically muscular action figures produced significantly lower levels of body esteem than found in the control group and the more realistic muscular action figure group. However, even the moderately muscular action figures may have been too unrealistic or too muscular. Therefore, the purpose of Study 3 was to see whether a more realistic toy, such as Ken, would produce the same results as the wrestlers and the Hulk action figures did. We hypothesized that handling a Ken figure would not contribute to negative body image levels, because Ken has a more realistic body.

Method

Participants

There were 55 male students in the study, all of whom were students at a large midwestern university. Their mean age was 18.9 years, with a standard deviation of 1.4 years. All participants received course credit for their General Psychology class. Most of the participants were freshman (70.9%), and the majority of the participants were White (90.9%).

Materials

Mattel's (1986) Ken was used as the figure for this study. Following the standardization procedure as in Study 1 and Study 2, Ken's chest size was measured at 35.0 in., his waist size was 26.2 in., and his biceps size was 11.6 in. The Ken dolls did not have any clothes on in order to make sure that participants would fully gauge the muscularity level of Ken. See Table I for these measurements. Two interesting facts emerge from Table I. The first is that

Ken's muscle size is slightly less than the Australian lacrosse players' muscle size (Pope et al., 1999). The second is that the size of Ken's muscle is significantly less than all of the action figures, which makes Ken a more realistic toy than the action figures.

Questionnaires

The same three questionnaires were used: the Adapted Body Shape Questionnaire (BSQ), the MBIES, the RSE, and the demographic questionnaire.

Procedure

The procedure as in Study 1 was used. Participants ($n = 25$) were to place the three Ken dolls into the 13 possible positions for 30 min, then complete the questionnaires. The same control group in Study 1 was used. After the participants had completed all of the questionnaires, they were thanked and fully debriefed.

Results and Discussion

We conducted *t*-tests to determine whether there was a significant difference between the Ken group and the control group on the three dependent measures. Because Ken is a doll and does not have some of the same features as the other action figures (i.e., no clothes, lack of arm and leg flexibility), *t*-tests were the most appropriate statistical analysis to use because it would not be beneficial to include Ken in the multivariate analyses utilized in the previous studies. These results indicate no significant differences between the two groups on any of the dependent measures ($p > .05$). These results support our hypothesis. Ken offers a more realistic representation of an average man's body, therefore handling a Ken doll did not negatively contribute to any of the components of body image that we measured.

The results from the *t*-tests are not surprising for two reasons. The first is that Ken's muscle size is slightly less than the "average" man's muscle size (i.e., the "average" lacrosse player from Pope et al., 1999), and the past literature shows that men are more prone to negative feelings about their bodies when they are exposed to muscular stimuli. Second, Ken is not an action figure, but rather a doll, and therefore did not have some of the features that the action figures did. For example, Ken did not have any

clothes on, whereas all the action figures had clothes painted on them, and Ken did not have as many joints as the action figures did, and so was not that flexible. Therefore, handling Ken did not have the same effect as handling an action figure did, but we used him because of his more realistic body size.

GENERAL DISCUSSION

In the current research, we investigated whether or not action figures can contribute to negative body image in the men who touched and handled them. We hypothesized that playing with action figures would make men feel worse about their bodies than not playing with action figures, and that the more muscular the action figure, the more negative the body image the participants would report.

Overall, the results confirmed our hypotheses, and suggest that handling the highly muscular action figures did negatively affect the body esteem of the participants. Results indicate that male participants who manipulated the most unrealistically muscular action figures reported significantly lower mean scores on the MBIES. This suggests that body esteem does significantly decrease as a result of interacting with unrealistically muscular action figures. This result remained consistent regardless of the height of the action figures.

One finding from these three studies that is worth highlighting is the fact that handling the unrealistic action figures produced significantly lower mean scores on the body esteem scale. This is important to note because the present studies have consistently demonstrated that only body esteem was negatively affected after handling the unrealistic action figures, even though there were two other scales utilized that measured overall self-esteem and body satisfaction. Therefore, these studies identified the specific psychological construct (i.e., body esteem) that is impacted by handling the unrealistic muscular action figures.

Like most research, our studies do have their limitations and shortcomings. The first limitation is that we did not use average looking action figures; however, current toy producers do not make such action figures. One possible solution would be to use action figures of the 1970s or the 1980s as realistic action figures. However, according to Pope et al. (1999) and Table I, even these more realistic action figures are significantly more muscular than an "average" person.

Another limitation is that we adapted the original BSQ, which may have negatively affected the reliability and the validity of this scale. There are other scales that have been developed to measure body satisfaction that can be used for men, such as the Body Dissatisfaction Index (BoDi; Garner & Olmsted, 1984). Most body image scales were validated using either both men and women, or just women (Thompson & Van Den Berg, 2002). This is problematic because, as mentioned earlier, men strive for muscularity, whereas women strive for thinness. Therefore, the scales that are needed for this type of study need to be validated and used only with men.

A final limitation is that our demographic questionnaire did not assess the sexual orientation of the participants. This is an important variable for future researchers to investigate. Research has shown that homosexual men score significantly lower on muscularity scales than heterosexual men do (Silberstein, Mishkind, Striegel-Moore, Timko, & Rodin, 1989). Therefore, future researchers should assess the sexual orientation of participants in order to control statistically for this variable.

The results of our studies suggest a wide variety of future research. Additional studies could compare different scales to measure body image after the same task. Perhaps scales such as the Body Dissatisfaction Index or the Situational Inventory of Body Dysmorphia (Cash, 2002) would produce significant effects that would provide a more comprehensive picture of the effects of action figures on body image. Future researchers should also employ more realistic or non-muscular action figures, if any can be found. In Study 3 we utilized Ken, but Ken is a doll, not an action figure. One possible example of an action figure that might be used is Golum from the popular book and movie *Lord of the Rings*. However, this particular action figure may not look human enough to cause direct comparisons to men's own bodies.

Future researchers should also conduct studies with children of different ages, in order to investigate how action figures affect the body image of the age group that actually plays with action figures. We might hypothesize that as boys get closer to puberty, they would show trends similar to the young men in the current studies. Researchers might also apply this research paradigm to Barbie and girls. However, in order to do this an obese or even average version of Barbie would have to be used for a comparison group, and such a doll does not exist.

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A1: Au: Please provide Figs. 1, 2, and 3.