The Influence of Famous Athletes on Health Beliefs and Practices: Mark McGwire, Child Abuse Prevention, and Androstenedione

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When Mark McGwire broke Roger Maris’s home run record in September of 1998, he was instantly declared an American hero and held up as a positive role model for teenagers and young adults. The extensive media attention focused on McGwire made the general public aware of his use of a muscle-building dietary supplement, Androstenedione. It also increased the public’s awareness of McGwire’s public service to prevent child abuse. The present research assesses audience involvement with McGwire through parasocial interaction and identification, and the effects of that involvement on audience knowledge of and attitudes toward Androstenedione and child abuse prevention. Results indicate parasocial interaction with an athlete regarded as a public role model likely leads to audience identification with that person, which in turn promotes certain attitudes and beliefs. In this case, parasocial interaction and identification with Mark McGwire was strongly associated with knowledge of Androstenedione, intended use of the supplement, and concern for child abuse. Implications of this research for featuring celebrities in health communication campaigns are discussed.

The year of 1998 will be remembered as one of the greatest baseball seasons and one of the worst political seasons in American history. The baseball training season began in the late winter during a year when the American public was looking for a positive distraction from the negative political turmoil in the country. The baseball season culminated with one of the most exciting Octobers in baseball history, one in which Mark McGwire and Sammy Sosa crushed home run after home run, both breaking Roger Maris’s 37-year
home run record and making them American heroes. The massive public outpouring of attention directed toward McGwire and Sosa brought needed relief from the heat of a presidential impeachment inquiry. Both McGwire and Sosa were highly esteemed and held up as positive role models, representing not only the best of baseball but also representatives of American culture and society.

To the non-baseball fan the mass hysteria about McGwire and Sosa’s feats may be difficult to understand. Sports writer Tom Verducci explains the cultural significance of home runs that led to the extensive media attention given to McGwire and Sosa:

The single season home run record is the most revered mark in sports. It’s engraved on Maris’s tombstone, just 61 in ‘61. The home run is America—appealing to Americans’ roots of rugged individualism and their fascination with the grand scale (September 14, 1998, p. 30).

Very few people thought Babe Ruth’s record of 60 home runs in a single season would ever be broken in this century. Ruth, renowned as one of the greatest players ever to play the game of baseball, also played in a shorter season the today’s season. When Roger Maris eclipsed Ruth in 1961 with 61 home runs, the baseball commissioner put an asterisk by Maris’ name (which was later removed) in the record book since he had more games to hit in than did Ruth. McGwire tied Maris’ record of 61 home runs and then surpassed the record in fewer games than it took Ruth hit 60. In his last 40 games, McGwire hit 23 home runs, blasting five home runs in this last 19 at-bats on his way to a phenomenal total of 70 for the season. McGwire’s feat was amazing until Barry Bonds astounded everyone in October of 2001.

Thus the media attention given to McGwire was not just due to the record he chased, but also due to the way in which he pulverized the record with public grace and humility. McGwire demonstrated patience with the media and fans, acknowledged the efforts of his teammates, and showed genuine friendship and good sportsmanship toward his competitor in the home run race, Sammy Sosa. His words and actions displayed his respect for the man whose record he broke and for the entire Maris family, and demonstrated his love for his parents, his family, and his son, who also served as batboy for McGwire’s team, the St. Louis Cardinals. Media attention to these positive character qualities of McGwire helped catapult him to a celebrity’s status.

Yet the news media also made known to the public two interesting facts about McGwire: (1) he is a strong advocate and supporter of child abuse prevention programs, and (2) he used a muscle-building dietary supplement, Androstenedione. Although the supplement is legally sold in health food stores and Major League Baseball allows players to use Androstenedione, it is banned in some professional sports. Thus McGwire’s use of Androstenedione could be viewed negatively by some of the public.

The purpose of the present study is to assess the degree to which involvement with McGwire might have affected two public health issues: child abuse prevention and the use of Androstenedione. In addition, the study will explore two types of audience involvement with sports celebrities, parasocial interaction and identification, and how involvement with sports celebrities can influence health-related awareness, beliefs and intended behavior. First, we provide a review of relevant theory and research that examines the public’s involvement with famous people celebrities like sports celebrities.

**Review of Literature**

The international proliferation of entertainment media during the past two decades has provided unprecedented public access to knowledge about the lives of celebrities.
Continued public attention to the life and death of celebrities like Marilyn Monroe, John F. Kennedy, Elvis Presley, and Princess Diana demonstrate the power of media to merge fantasy and folklore with historical fact. Boorstin (1961), Campbell (1988), and other scholars believe that in American culture as well as in other heavily mediated societies, celebrities have replaced the traditional heroes of the past. In 1997, for example, several hundred million people watched the worldwide satellite transmission of the funeral of Princess Diana. Many millions wept for Diana as they watched the funeral procession from their homes, coffee shops, bars, hospitals, restaurants, offices, and wherever television reached them. Books about Diana quickly became best sellers as the public gobbled up anything they could learn about her life. Princess Diana is one of the few women in the 20th century whose popularity penetrated every continent in the expanded global marketplace of international fame (Brown, Basil, & Bocarnea, 1998; Payne, 2000). One of the consequences of Princess Diana’s fame was an increase in the public’s awareness of important social issues, most notable the problems of HIV/AIDS (Bearman, 2000; Golden, 2000) and land mines killing civilians in war-torn countries (Dann, 2000; Golden, 2000). In a study of the use of Diana’s image for a road safety campaign, Dann (2000) reported that 84 percent of survey respondents believed the use of Diana’s image would be both persuasive and effective.

Like the inordinate media attention given to royalty, famous athletes also draw extensive media coverage as televised sports expands its audience. Public knowledge of the personal lives of athletes is greater today than it has ever been at any point in history. News of professional athletes, their activities, their spoken words, and their lifestyles provide a means of social influence to large numbers of people.

Media coverage is especially extensive during unplanned human tragedies, what Scannel (2000, p. 28) calls “happenings,” or during planned events, what Jun and Dayan (1986, p. 73) refer to as “media events.” For example, some 60 million Americans watched the police pursuit of O.J. Simpson in Los Angeles, an unplanned event or happening. Another 100 million Americans watched portions of Simpson’s criminal trial, a planned media event. The jury’s verdict in the first Simpson trial was one of the most watched events in television history and had a significant influence on public knowledge and beliefs about the U.S. legal system (Brown, Duane, & Fraser, 1997).

One of the effects of mass exposure to the lives of sports celebrities occurs when media consumers seek role models in the athletes they admire. Traditional role models such as parents, relatives, and neighbors are people who are personally known in communities and who demonstrate acts of courage and moral character. In contrast, national sports celebrities are seldom known personally by those emulating their behavior. Thus, they are not required by the public to possess any virtue other than being well-known and having outstanding talent. The attribute of moral character is often ignored when considering role models in today’s society. Boorstin recognized the diminishing role of moral integrity by noting that unlike heroes, celebrities can be manufactured by the mass media (1961, p. 61). It is much easier today to disregard or overlook moral failures in leaders who accomplish good works in a society that worships fame than in a society that honors heroes for both achievement and moral character. This distinction is important because famous athletes often become role models despite their moral failings or protests that they do not want to be emulated.

Sports celebrity Charles Barkley, for example, lamented that he was not paid to be a role model when he was playing professional basketball for the Phoenix Suns in 1993. Barkley had become involved in an altercation with a fan and accidentally spit on a young girl, missing his intended adult target. Barkley rightly argued that just because he was a talented athlete (i.e., a much more accurate shooter than spitter), that did not make him a role
model. Other athletes pointed out to Sir Charles that being a role model was a consequence of becoming a famous athlete. Karl Malone, star forward for the Utah Jazz, told Barkely:

Charles, you can deny being a role model all you want, but I don’t think it’s your decision to make. We don’t choose to be role models, we are chosen. Our only choice is whether to be a good role model or a bad one (Gelman, Springen, and Raghaven, 1993, p. 56).

Although the influence of sports celebrities on behavior needs much more scholarly examination, there are a number of studies that indicate that famous people can effectively persuade others to purchase products and adopt certain health-related beliefs and practices. The first set of studies address the effectiveness of celebrity endorsements. Celebrities can effectively promote product sales by creating more consumer awareness of products and favorable attitudes toward the products they endorse (Atkin & Block, 1983; Freiden, 1984; Friedman & Friedman, 1979; Kamins, 1990; Tripp, Jensen, & Carlson, 1994). Corporations that employ celebrities as spokespersons also tend to increase their profits (Argrawal & Kalakura, 1995; Mathur, Mathur & Rangun, 1997). Celebrity endorsers are perceived as more trustworthy and competent as compared to non-celebrities, enhancing product image and increasing product use (Atkin & Block, 1983).

A second set of studies addresses the influence of celebrities on health-related knowledge, beliefs and behaviors. Many athletes take part in public service announcements to promote beneficial health behaviors, and repeated discussion by a sports celebrity of a specific health issue can have a more powerful effect on the public. We provide three examples.

The first example involves the efforts of former basketball star Earvin “Magic” Johnson in promoting HIV/AIDS prevention. Despite millions of dollars spent by the U.S. government on information-based HIV prevention programs in the middle to late 1980s, televised PSAs and printed materials raised knowledge of AIDS and HIV transmission but did not effectively promote change in high-risk sexual behaviors (Brown, 1991). In contrast, when Magic Johnson became a spokesperson for HIV prevention, giving talks and producing an HIV-prevention video with Arsenio Hall, high-risk teenagers and young adults listened to Johnson and were positively influenced by his message.

Several studies document Magic Johnson’s influence on HIV prevention. The day after Johnson held a news conference indicating he was HIV-positive and would become a spokesperson for HIV prevention, the National AIDS hotline logged some 40,000 calls, a 10-fold increase from the average number of daily calls received (Leerhsen, 1991). Johnson’s announcement diffused rapidly, immediately raising HIV/AIDS awareness among heterosexuals (Basil & Brown, 1994; Dearing & Rogers, 1996) and promoting changes in HIV-related attitudes, beliefs, and sexual behavior (Brown & Basil, 1995). A year later Johnson produced and distributed a rap video called “Time Out: Truth about HIV, AIDS, and YOU,” with friend Arsenio Hall, featuring several other celebrities. The video, distributed by national video chains such as Blockbuster, communicated with millions of fans how to avoid HIV/AIDS infections (Singhal & Rogers, 1999, p. 108).

Brown and Basil (1995) found that those who had a higher degree of emotional involvement with Johnson demonstrated increases in their personal concern about AIDS, concern about the risk of AIDS to heterosexuals, and intention to reduce high-risk sexual behaviors. Basil (1996) replicated the earlier study by Brown and Basil (1995), and again he found that those who identified more strongly with Johnson were more likely to make attitudinal and behavior changes in their lives to reduce their risk of HIV-infection.
Working with an additional data set, Basil and Brown (1997) later reported that identification with Magic Johnson affected both social and personal concern about AIDS. Public responses indicated the heterosexual population felt “if it could happen to Johnson (a heterosexual become HIV-positive), it could happen to me.” Magic Johnson clearly had a positive influence on motivating those who liked him or identified with him to reduce their high-risk sexual behaviors.

A second example involving the influence a famous athlete on a health-related issue involves the O.J. Simpson case. Although Simpson was not an advocate for preventing spousal abuse, the extensive media coverage of his criminal and civil trials made spousal abuse an important topic of public concern. Relevant questions applicable to the two Simpson trials such as, “Did his physical abuse of his wife Nicole provide a strong indicator that he murdered her?” and “Why didn’t the police arrest Simpson after he established a clear pattern of beating Nicole up?” were openly discussed on talk shows and in interpersonal conversations. Brown, Fraser, and Bocarnea (1994) reported that 45.5% of the respondents in a national survey who were married or who had a romantic partner discussed the issue of spouse abuse with their partner as a result of the Simpson case. In addition, responses to open-ended questions in the same study indicated the Simpson criminal trial raised sympathy for victims of domestic violence. Although there is little documented evidence to indicate spousal abuse was reduced during the Simpson trial, evidence does suggest the legal issues surrounding this problem were affected (Brown et al., 1997).

A third example showing how celebrities can promote health-related beliefs and practices is the organized communication campaigns designed by the Harvard School of Public Health to promote driving safety. Harvard promoted seat belt safety and the designated driver concept through entertainment television programs during the 1980s. Harvard’s designated driver campaign advanced the social norm that drivers should abstain from alcohol (Winsten, 1994). By lobbying Hollywood celebrities, the national campaign, valued at over $100 million dollars in advertising space, placed designated driver messages in more than 160 entertainment programs (Winsten & DeJong, 2001). Many famous actors and actresses were involved in promoting the no drinking and driving concept. An assessment of the campaign indicated the adoption of the designated driver practice was successfully diffused, especially among males (DeJong & Winsten, 1990).

**Involvement with Role Models through Media**

On broad term used to describe how audience members relate to individuals depicted in and through the mass media is “involvement.” Research on television effects indicates that television viewers become involved with both television characters and television stars through repeated media exposure (Brown & Cody, 1991; Petty & Cacioppo, 1979; Rubin, Perse, & Powell, 1985; Rubin & Perse, 1987; Shefner-Rogers, Rogers, & Singhal, 1998; Singhal, Obregon, & Rogers, 1994; Turner, 1993). Involvement is regarded as a motivated state of anticipated engagement with media messages in which audience members psychologically process media content (Rubin, 1996). The concept of involvement assumes that the viewing audience members are active media users rather than passive receivers of information. Two types of involvement conceptualized by Rubin and Perse (1987) are: (1) a motivational state that reflects the attitudes that people bring with them to the communication situation, and (2) the cognitive, affective, and behavioral participation induced by the media during media exposure (i.e., becoming emotionally and intellectually involved with a television character while watching a program).

The concept of emotional and intellectual involvement with a media personality such as a television character is captured to a large degree by parasocial interaction theory.
As television viewing rapidly increased in the United States during the 1950s, two psychologists observed the sense of intimacy that television viewers developed with television personalities. They referred to the imaginary relationship between a television viewer and television personalities or “personae” as parasocial relationships and the process of relating to television personae as parasocial interaction (Horton & Wohl, 1956). Repeated exposure to media personalities through the mass media creates a sense of friendship or intimacy in media users (Levy, 1979). Audience members commonly look to media personalities as “friends” and those with whom they feel “comfortable”. Evidence of parasocial relationships has been observed between television viewers and newscasters, talk show hosts, and soap opera stars (Babb & Brown, 1994; Brown & Fraser, 1993; Levy, 1979; Rubin & McHugh, 1987; Shefner-Rogers et al., 1998; Singhal, Obergon et al., 1994).

The concept of parasocial interaction was extended by Brown and colleagues (see Brown et al., 1994; Brown & Basil, 1995; Brown et al., 1998) beyond what occurs between television personalities and television viewers by demonstrating that individuals establish parasocial relationships with celebrities through a variety of media. Audiences develop parasocial relationships with sports celebrities through their exposure to sports events, televised sports, movies, and commercials featuring sports celebrities (Brown & Basil, 1995; Brown et al., 1997). The tragic death of NASCAR driver Dale Earnhardt in February 2001, for example, moved thousands of fans to organize memorial services at racetracks throughout the United States. Participants in the memorial services said they felt like they had “lost a brother” or “lost a close friend” (K. Heatherly, personal communication, February 25, 2001). H.A. (Humpy) Wheeler, president of Lowe’s Motor Speedway near Charlotte, North Carolina, described Earnhardt’s death as “a terrible, terrible loss and, for me, it ranks right up there with the death of JFK” (Bechtel, 2001, p. 38). Racing fans demonstrated strong parasocial relationships with Earnhardt.

Parasocial interaction with media personae can induce measurable effects on audiences. Parasocial interaction with the stars of “Hum Log” (“We People”), India’s first television soap opera, promoted the status of women and family harmony in India (Brown & Cody, 1991). Many thousands of television viewers joined literacy programs in Peru because of their parasocial interaction with the popular soap opera character “Maria,” star of the Peruvian telenovela “Simplemente Maria” (“Simple Mary”) (Singhal, Obergon et al., 1994). As previously mentioned, the public’s strong parasocial relationship with “Magic” Johnson had a positive impact on HIV prevention, especially among young adults at risk for HIV infection (Brown & Basil, 1995). Parasocial relationship with O.J. Simpson predisposed much of the public to disbelieve evidence linking him to the deaths of his former wife Nicole and Ronald Goldman (Brown et al., 1997). Adolescents’ parasocial interaction with Will Smith influenced what they learned from watching Fresh Prince of Bel Air (Babb & Brown, 1994). In a study by Rubin, Step, & Hofer (1996), parasocial interaction with a radio talk show host was associated with listening effects. A study of the television program Touched by an Angel indicated those who exhibited stronger parasocial relationships with the three angel characters were more likely to discuss with others the spiritual issues highlighted in the program (Piper, Keeler, & Brown, 1997).

The idea that audience involvement is a process of cognitive, affective, and behavioral participation that occurs while actively responding to media presentations has much in common with Kelman’s (1961) concept of “identification.” Kelman viewed identification as a persuasion process that occurs when an individual adopts behavior of another individual or group based on a “self-defining” relationship (p. 63). Thus a television viewer could “identify” with a “baseball star” by adopting similar behavior.
exhibited by the player with whom the viewer wants to relate. Kelman observed that people imitated others as a way of maintaining a desired relationship to another person or group, regardless of the other person’s or group’s level of involvement. Kelman explains,

By saying what the other says, doing what he does, believing what he believes, the individual maintains this relationship and the satisfying self-definition that it provides him (1961, p. 63).

In this identification process, a person adopts attitudes, values and behaviors of another because he or she actually believes in them, and it is not necessary that the person “role modeling” the behavior of another actually interacts with the “role model.” Thus a person can identify with a famous athlete by adopting the attitudes, values, and behaviors of that person whom they may have never met in person. Although Kelman (1961) conceived of the process of identification as commonly occurring in face-to-face interactions, the process also can occur through prolonged exposure to media personae.

Both Kelman’s theory of identification and Horton & Whol’s theory of parasocial interaction cover similar conceptual ground. However, there are two notable distinctions. First, a parasocial relationship is conceived of as a psychological state of involvement with a media personality through an imagined or perceived friendship. The relationship is an entity in itself and not a facet of persuasive influence. Second, parasocial interaction does not require adopting another person’s attitudes, values or behaviors although this often occurs. Emulating the behaviors observed in close friends is common but is a consequence of a friendship, not a condition of friendship. Yet Kelman sees the role modeling of behavior exhibited by others with whom we relate as central to the process of identification. Adopting the attitudes, beliefs, or behaviors of another person exemplifies identification with him or her.

We view both the processes of parasocial interaction and identification as very similar types of involvement between media personae and audience members who relate to them. These two conceptions of involvement can thus be conceived as both predictors of cognitive, affective and behavioral changes and consequences of media exposure. When assessing audience involvement with media personae, it is easy to see that both parasocial interaction and identification take place. An example that helps distinguish between these two processes is to consider audience involvement with former Chicago Bulls basketball stars Michael Jordan and Dennis Rodman. A basketball fan may develop a psychological sense of friendship with Dennis Rodman, but never imitate Rodman’s behavior by painting his hair a different color each week, cross-dressing, or painting his fingernails black and white. Most people have friends whose behavior they do not desire to imitate. In contrast, a basketball fan of Michael Jordan may not only develop a perceived friendship with him, but may actively try to “be like Mike.” In this comparison, parasocial interaction with Rodman and Jordan may or may not predict identification with them. Thus parasocial interaction is necessary condition for identification but not a sufficient condition for identification. We may imitate and emulate a person we don’t personally know through observational learning, regardless of whether we have formed a real or imaginary friendship with that person (Bandura, 1986). Likewise, not every person with whom we may have formed an imaginary friendship is a person with whom we “identify.” These two types of involvement have not been empirically separated to date, but will be measured and tested as two distinct variables in the present study.
Several research questions were explored and hypotheses tested in the present study. First, we decided to investigate to what extent people were exposed to the Mark McGwire story. The purpose for pursuing this kind of information was to provide a context for understanding how McGwire might have been in a position to influence people’s knowledge and attitudes toward two health issues. If very few people were exposed to the McGwire story, then the overall influence McGwire might have had would be limited. If, on the other hand, the McGwire story was well known and a topic of public discussion, then the potential for influence would be regarded as greater. We also sought to measure the general public’s awareness of the two health issues that McGwire might potentially have influenced.

Based on our knowledge of the two health issues that media coverage of McGwire brought into the public spotlight, the following research questions were posed:

RQ1: To what extent are segments of the American public more concerned about child abuse prevention through learning about Mark McGwire’s work for abused children?
RQ2: To what extent do segments of the American public believe that Mark McGwire has helped them to realize the importance of speaking out against child abuse?
RQ3: To what extent are segments of the American public aware that McGwire uses a muscle-enhancing dietary supplement?
RQ4: To what extent are segments of the American public interested in learning more about the muscle-enhancing dietary supplement taken by McGwire?
RQ5: Is identification with Mark McGwire associated with the degree to which people learned about his child abuse prevention work and his use of the dietary supplement Androstenedione?

Based on the two theories of involvement previously discussed, we also formulated specific hypotheses to test in the present study. We predicted that exposure to McGwire in the media and interest in baseball would predict parasocial interaction with McGwire, and that parasocial interaction with McGwire would predict identification with him. We further hypothesized that identification would lead to specific health knowledge and attitudes. The following hypotheses were tested:

H1: Media exposure to Mark McGwire and interest in baseball will be positively associated with the development of a parasocial relationship with McGwire.
H2: The degree of parasocial relationship with Mark McGwire will be positively associated with identification with McGwire.
H3: Identification with McGwire will be positively associated with (a) concern for child abuse prevention, and (b) belief in the importance of speaking out against child abuse.
H4: Identification with McGwire will be positively associated with (a) awareness of the benefits and risks of the dietary muscle-enhancer Androstenedione, and (b) desire to use Androstenedione.
H5: Those who more strongly identify with McGwire will more likely be (a) aware of Androstenedione, (b) aware that McGwire was using Androstenedione, (c) interested in learning more about Androstenedione, and (d) interested in taking dietary supplements to enhance athletic performance.
Method

Due to the nature of the research questions and hypotheses investigated, we decided to use a survey questionnaire to measure the relevant variables of interest. Survey questionnaires have been used in previous studies of audience involvement with athletes and celebrities and have proven to be an effective means to explore theories of audience involvement.

Research Instrument

The survey questionnaire consisted of 55 items, with 8 open-ended questions (seven of these yielded quantitative data and one qualitative data), 25 Likert-scale items (utilizing a 1 to 5 agree-disagree scale), and 22 additional closed-ended questions, including six demographic items (see Appendix). The majority of items yielded interval data, with the next largest number of items providing categorical data. All data were input from completed questionnaires into data files for analysis with computer-run statistical programs.

Several composite variables were constructed by creating measurement scale with two or more questionnaire items. Reliability coefficients were then computed for each measurement scale. The decision rule used to determine the usability of these scales was that the Cronbach coefficient alphas had to be .65 or higher for the composite variable to be used for testing the five hypotheses. All composite variables met this standard. Correlation analyses yielded the following results: parasocial interaction was measured by seven items, yielding a Cronbach alpha of .80; identification was measured by seven items, yielding a Cronbach alpha of .87; media exposure to Mark McGwire was measured by three items, yielding a Cronbach alpha of .79; and general media exposure was measured by three items, yielding a Cronbach alpha of .87. Single questionnaire items measured all other variables.

Sample and Data Collection

A total sample of 356 people provided usable questionnaires for this study. We decided that in order to collect a variety of responses from different geographical locations, two non-random sampling methods would be used. First, the survey questionnaire was posted on a web site and advertised on search engines frequented by users of the Internet. The population of users of the Internet is becoming less and less distinct from general population samples as the number of users continues to rapidly increase. In this particular study, we did not expect that a population sample from the Internet would significantly differ from other convenience samples on the variables of interest in this particular study.

The second method of data collection followed a more traditional approach. Graduate and undergraduate students at four universities were given a self-report questionnaire. One university was located in the central region of the U.S., one in an eastern region, and two on the East Coast. The four universities provided a good cross-section of respondents in terms of age, gender, and cultural backgrounds. The data was collected in

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1 The exact questions used for each of these scales is as follows: (1) parasocial interaction: Q20 (reverse code), Q22, Q23, Q25, Q34, Q37, Q40; (2) identification: Q21, Q26, Q32, Q33, Q35, Q38, Q41; (3) media exposure to Mark McGwire: Q7, Q8, Q9; and (4) general media exposure: Q46, Q47, Q48.
September and early October of 1998—within a three-week period after McGwire hit his 62nd home run, breaking Maris’ record.

In order to test our assumption that the two data samples would not differ significantly on the variables of interest, all variables used to test the hypotheses were analyzed with the data source as the independent variable. Analysis of variance results indicate none of the dependent variables of interest differed based on the data source. None of the means of variables in the research model from the student data and the Internet data differed statistically. The data were thus analyzed as a single data set. A total of 192 respondents completed the survey on the Internet and 164 respondents completed the questionnaire at one of the four university campuses.

**Demographics**

Respondents represented a diverse group of people throughout the United States. Nearly 56 percent of the sample was in the 18 to 40 year old age group, with another 18 percent in the 41 to 60 year old age group. The gender balance of the sample was good: 54.8 percent male, 45.2 percent female. The cultural groupings consisted of 87 percent Caucasian, 7.8 percent African American, 2.3 percent Hispanic American, and 2.3 percent Asian American. Regarding the educational backgrounds of respondents, 38.8 percent had some college experience, 28.7 percent had an undergraduate degree, and 23.3 percent had completed a graduate degree. Over half the respondents regarded themselves as political conservatives, about a third as moderates, and just over eight percent as liberals. Just over half the respondents identified themselves as single and never married, 38 percent as married, and 11 percent as divorced or widowed.

**Analysis Procedures**

A correlation analysis was first conducted to provide an overview of how the important independent and dependent variables are associated. Results of this analysis are provided in Table 1. Second, regression analyses were conducted to determine if any of the demographic variables were significantly associated with the variables used to test the five hypothesized relationships. Only gender and education were found to be potentially intervening variables. Gender was significantly associated with parasocial relationship (men had stronger parasocial relationships with McGwire than women), identification with McGwire (men identified more with McGwire), media exposure to McGwire (men were exposed to McGwire more in the media), and knowledge and desire to use Androstenedione (men knew more about the muscle-enhancer and expressed a stronger

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TABLE 2 Pearson Correlation Coefficient and Probabilities (Prob > |R| under Ho: Rho = 0) for Measured Variables in Hypothesized Relationships

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The Influence of Famous Athletes

Results

Results are reported here in order of the five research questions and five hypothesized relationships analyzed.
Research Questions

The first research question explored the extent to which segments of the American public increased their concern about child abuse and its prevention through learning about Mark McGwire’s work with abused children. Results indicate that 8.4 percent of the respondents reported that they are now more concerned about child abuse prevention after learning about this problem through Mark McGwire.

Research question number 2 examined the extent to which segments of the American public believe that Mark McGwire has helped them to realize the importance of speaking out against child abuse. Results indicate the 13.3 percent of the respondents reported that McGwire helped them recognize that speaking out against child abuse is important.

Research question 3 investigated the degree to which segments of the American public are aware that McGwire uses a muscle-enhancing dietary supplement. Results indicated that 65.1 percent of the respondents are aware that McGwire used Androstenedione, an anabolic steroid that enhances muscle development.

The fourth research question analyzed the extent to which segments of the American public are interested in learning more about the muscle-enhancing dietary supplement taken by McGwire. Results indicate 24 percent of the respondents are interested in learning more about Androstenedione.

The last research question assessed if identification with Mark McGwire is related to learning about his child abuse prevention work and his use of the dietary supplement Androstenedione. Results of the correlation analysis provided in Table 1 indicate identification is associated with learning about both of these health issues. Identification is significantly associated with concern for child abuse ($r = .27, p < .001$), recognition of the need to speak out against child abuse ($r = .43, p < .05$), awareness of Androstenedione ($r = .13, p < .001$), and desire to take Androstenedione ($r = .21, p < .001$).

Hypotheses

The first hypothesis predicted that media exposure to Mark McGwire and interest in baseball will be positively associated with the development of a parasocial relationship with McGwire. Results$^2$ support this hypothesis ($R^2 = .31, F$-value = 73.9, $p < .001$).

$^2$All regression results are reported with standardized regression coefficients.
For both men and women, the degree to which one identified as a baseball fan (\( \beta = 0.50, p < .001 \)) and the degree of exposure to McGwire on television (\( \beta = .16, p < .01 \)) were positively associated with a greater degree of parasocial relationship with McGwire. Women’s exposure to news about McGwire through all three media sources was significantly associated with parasocial interaction; but for men, only television news exposure was significantly associated with parasocial interaction. Exposure to television news was the strongest predictor of parasocial relationship with McGwire for both men and women (\( \beta = .10, p < .001 \)).

Hypothesis 2 predicted that the degree of parasocial relationship with Mark McGwire will be positively associated with identification with him. Again, after controlling for gender, this hypothesis was supported. Both men and women who had a greater degree of parasocial relationship with McGwire also more strongly identified with him \( (R^2 = .67, F\text{-value} = 68.1, p < .001) \).

Hypothesis 3 predicted that the degree of identification with McGwire will be positively associated with an increased concern for child abuse prevention. Results support this hypothesis regardless of gender. Those who had a stronger identification with McGwire had more concern about child abuse as a result of learning about this issue from McGwire (\( \beta = .33, p < .001 \)).

Hypothesis 4 predicted that identification with McGwire will be positively associated with an increased realization that it is important to speak out against child abuse. Results support this hypothesis. Both men and women who had a stronger identification with McGwire learned more from him about the importance of speaking out against child abuse \( (\beta = .60, p < .001) \).

The last hypothesis predicted that identification with McGwire would be positively associated with the knowledge of and desire to use the dietary muscle-enhancer Androstenedione. Both gender and education were controlled for in these analyses. Results support this hypothesis \( (R^2 = .06, F\text{-value} = 21.2, p < .001) \). Those who more strongly identified with McGwire were more aware of the benefits and risks of Androstenedione as a result of following McGwire in the news \( (\beta = .18, p < .05) \). Men who more strongly identified with McGwire and who were less educated exhibited a greater desire to try the dietary supplement \( (R^2 = .08, p < .01) \). This was not true for women. Regardless of their level of education, identification with McGwire was not associated with women’s desire to try Androstenedione \( (\beta = .16, p > .05) \).

The research results did not provide empirical support for clearly distinguishing the two types of involvement, parasocial interaction and identification. Although the two scales had very good reliabilities, the two factors are highly correlated \( (r = .82, p < .001) \) and collapsing the two scales into a single variable yields a high Cronbach alpha (.90). With regards to involvement with Mark McGwire, the overlap between parasocial interaction and identification is considerable, despite the factor analyses showing two factors with both varimax and orthomax rotations.

**Discussion**

Results of this study build on the work of previous research that indicates that famous athletes can have an important influence on the health-related knowledge, attitudes, and behavioral intentions of segments the American public. The extensive news coverage of McGwire’s home run record exposed millions of people to aspects of his life that probably would never have been known by a large percentage of the American public. There were likely many contributing factors to the public’s exposure to McGwire.
It is important to note here that about 60 percent of the respondents in this study did not consider themselves big baseball fans.

McGwire’s ascent to the home run record was clearly a planned media event. Scannel (2000) notes that storyability is intrinsic to a media event because it has a beginning, a middle, and an end. In contrast to written narratives, which move from present to past, the McGwire home run story unfolded as it was occurring, from present to future. During this process, the actual event and the narrative of that event become “inextricably entwined in one another” (Scannell, 2000, p. 48). Television’s exciting narrative of McGwire’s pursuit captivated the public’s attention and involvement, and in the process, became a means to involving the public in two health-related issues that would not have gained much attention apart from the story.

The use of the dietary supplement Androstenedione was discussed in the media’s coverage of McGwire. Almost two-thirds of the respondents were aware of McGwire’s use of this supplement, 24 percent wanted to learn more about it, and 22 percent were interested in taking it. The fact that 11 percent of the respondents agreed or strongly agreed that as a result of following McGwire in the news they had learned about Androstenedione is an important finding. Although the percentage is not high, if you multiply the percentage by the millions of people who followed the McGwire story, it becomes clear that McGwire did promote awareness of Androstenedione, a desire to learn more about it, and a desire to try it.

U.S. News & World Report’s story on McGwire’s use of the muscle-enhancer (Schrof, 1998) raised public awareness of the benefits and detriments of this anabolic steroid. Parents were concerned that McGwire’s use of a steroid might promote the use of such substances among their children. One parent responded:

I was heartbroken to have been “left out” of the national celebration of Mark McGwire’s extraordinary achievement. I have an 11-year old son, and he is aware of both the magnitude of the achievement and of McGwire’s use of steroids. That awareness placed me in the painful position of either celebrating the historical milestone, and subliminally endorsing my son’s future use of performance-enhancing or life-threatening drugs, or rejecting the achievement outright and sending a clear message to my son that substance abuse was both unacceptable and dangerous. For a father, that’s no choice (Turner, September 28, 1998, p. 5).

Turner’s letter published in U.S. World & News Report succinctly articulates the belief that a sports celebrity is a public role model and that others will likely emulate his or her behaviors.

Support for all five hypothesized relationships provides further evidence that the public does establish parasocial relationships with sports celebrities; and parasocial relationships are strongly associated with Kelman’s (1961) concept of identification, a predictor of attitudinal and behavioral adaptation. As expected, the results support the notion that audience involvement with sports celebrities can promote the health-related attitudes and interests endorsed and modeled by the celebrity.

There are several important limitations of this study. First, the study cannot generalize from the sample to the general population since the sampling process was non-random. Nevertheless, the hypothesized relationships among the variables of interest are not expected to change for a randomly chosen sample of respondents. It was interesting to note that there were no significant differences on any of the variables used in the
regression analyses between the student sample and those who completed the survey on the Internet.

A second limitation is the lack of empirical support for distinguishing between parasocial interaction and identification. The data need to be further explored using various path analysis models based on theoretic formulations to determine why these two types of involvement are difficult to separate. With regards to the present study, we suspect the overall good image of McGwire made it difficult not to want to role model his attitudes and behavior. If we were studying someone like Dennis Rodman, a person widely admired but not widely role modeled, we think the two types of involvement would be more easily distinguishable. Future research should empirically test with other data sets whether or not parasocial relationships and identification can clearly be distinguished.

A third limitation is the study did not measure actual behavioral change as would be predicted by Bandura’s (1986) social learning theory. Despite this limitation, an argument can be made that athletes can influence health-related behaviors based on our results regarding the health-related knowledge and attitudes measured. Respondents did indicate McGwire affected their attitudes about child abuse prevention and taking Androstenedione. We do not know how many people might have become involved in child abuse prevention as a result of McGwire’s influence on them, or how many people began taking Androstenedione as a result of learning that McGwire takes it. We do know from our own previous research that parasocial interaction and identification are strongly associated with behavioral intentions.

There are also broader implications of this study beyond the influence of highly celebrated sports celebrities like Mark McGwire. When a celebrity becomes closely aligned with a health issue, like Christopher Reeve and stem cell research, or Michael J. Fox and Parkinson’s disease, then the media attention given to that celebrity draws public involvement into his or her health issue. The association between specific celebrities and specific diseases or health issues has important consequences for future health communication campaigns. Just as products are branded with the help of celebrity endorsements, health needs and perhaps celebrities may brand even specific diseases. This concept of “celebrity branding” as a form of health advocacy should be explored by future research.

The close association between McGwire’s well-built physique and his use of Androstenedione form a natural “resonance” which may be qualitatively different from the association between certain celebrities and their health-related issues. The hunger campaign efforts of Sally Struthers for Save the Children and Jeff Bridges for Hunger Free America may not resonate the same way as “Magic” Johnson’s campaign for HIV prevention, since Johnson is HIV positive and neither Struthers nor Bridges suffer from hunger. Research should assess the perceived identification between celebrities and the health issues they advocate.

Future research should continue to assess the degree to which actual health behaviors may be changed as a result of involvement with sports celebrities. Certainly the use of celebrities to promote positive health behaviors should continue. Although we do not know the degree to which people may be influenced to change their health behaviors because of a celebrity and sports hero like McGwire, we do know that some people do change. Even if it is only a few children who are spared an abusive situation through the efforts of celebrities like Mark McGwire, those few are still extremely important and worth the effort. Yet at the same time celebrities like McGwire may feel the need to reconsider their influence on those who may role model their steroid use. Unfortunately many young people who regard McGwire as a hero may not recognize that an acceptable supplement for McGwire may not be an acceptable supplement for them. As a credit to
McGwire, he stopped using Androstenedione as soon as he heard that young people were emulating his behavior.

References


