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Celebrity Influence and Identification: A Test of the Angelina Effect

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Angelina Jolie's announcement that she is a BRCA1 carrier and has had a prophylactic bilateral mastectomy was met with widespread support as well as speculation about its possible impact on the public. These speculations were the subject of a *Time* magazine cover story titled "The Angelina Effect" (Kluger et al., 2013). Although there is anecdotal evidence to support this hypothesized Angelina effect, empirical tests are lacking. To explore possible links between Angelina's announcement and public health, we surveyed 356 adults immediately after the announcement. Guided by a model of celebrity influence, the survey assessed participants' demographics and health history, identification and parasocial interaction with Jolie, and genetic testing intentions. Results supported the model's predictions and provided preliminary evidence of an Angelina effect.

On May 14, 2013, Angelina Jolie announced that she had had a genetic test that revealed a BRCA1 gene mutation (Burststein, 2013). This "faulty gene," as Jolie (2013) explained in an op-ed piece in the *New York Times* titled "My Medical Choice," increased her risk of developing breast and ovarian cancers, which claimed the lives of her mother and aunt. Given her genetic testing results and family history, Jolie elected to undergo a prophylactic bilateral mastectomy, a procedure she painstakingly detailed in "My Medical Choice." In her op-ed piece and in subsequent interviews about it, Jolie explained that she made public such a personal decision "because I hope that other women can benefit from my experience."

Although Jolie's announcement was met with widespread interest and support, some public health officials worried that her story would prompt unnecessary genetic tests and prophylactic surgeries (Grady, Parker-Pope, & Belluck, 2013). Others lamented that the expensive genetic test as well as the preventive and reconstructive surgeries described by Jolie were not accessible to or affordable for the general public (Caplan, 2013). These concerns, along with Jolie's story, served as the basis for a *Time* magazine cover story titled "The Angelina Effect." The story's authors hypothesized that, given the extent of Angelina's influence on public opinion in other domains, such as international adoption and baby names, her medical decision would have a powerful effect on the genetic testing and cancer-related beliefs and behaviors of the general public (Kluger et al., 2013).

Anecdotal evidence seemed to confirm public health officials' concerns and *Time* magazine's hypothesis. For example, Web analytics pointed to a surge in cancer-related information seeking after Jolie's announcement, with a 23,000% increase in hits to the Wikipedia "Mastectomy" page on the day of and a similar spike in Google searches for breast cancer genetics and treatment information in the week following her revelation (Noar, Althouse, Ayers, Francis, & Ribisi, 2015; Reid, 2013). Health organizations also reported a rapid rise in requests for BRCA tests and referrals to genetic testing centers. The Dana-Farber Cancer Institute, for instance, reported a 50% increase in requests for genetic tests following Jolie's announcement, and the National Society of Genetic Counselors documented a rise in genetic testing in centers across the country (Neporent, 2013). Similar surges occurred in Australia (Dunlop, Kirk, & Tucker, 2014), the United Kingdom (Evans et al., 2014), Canada (Barton, 2013), and India (Mehta, 2013).

One of the few empirical research studies on the subject paints a slightly different picture of the Angelina effect. Three weeks after Jolie's announcement, Borzekowski Guan, Smith, Erby, and Roter (2014) conducted a survey to assess awareness of and responses to Angelina's story. They found that although 74% of the sample was aware of Jolie's plight, "fewer than 10% of respondents had the information necessary to accurately interpret Ms. Jolie's risk of developing cancer relative to a woman unaffected by the BRCA gene mutation" (p. 516). In addition, only 2.7% of the sample reported seeking additional information about genetic testing or breast cancer from the Internet, and less than 4% contacted a health care organization or provider with questions or concerns. Based on admittedly limited data (i.e., the researchers were restricted to 12 multiple-choice questions for their study), the authors concluded that

Angelina's story might have increased public awareness about BRCA but that it was not linked to behavioral change or greater knowledge of breast cancer risk. Given these contradictory reports about the Angelina effect and the dearth of research on the subject, additional empirical tests of *Time* magazine's hypothesis are warranted. Thus, we designed the current study to explore the extent of Angelina's effect on BRCA testing intentions.

Although research on the Angelina effect is lacking, the literature on celebrity influence is substantial and can inform a study of this kind (Basil, 1996). Scholars from various disciplines, including communication, psychology, advertising, and marketing, concur that today's celebrities hold great sway over the American public. For example, marketing researchers have found that celebrity endorsements, in comparison to those from noncelebrities, generate more positive brand attitudes and greater purchase intentions (Erdogan, 1999). When featured in advertising campaigns, celebrities can enhance a company or product's image (e.g., Yeshin, 2006) and increase product sales (e.g., Elberse & Verleun, 2012). Celebrities can have an equally powerful negative effect on consumer behavior. In fact, in a meta-analysis of the celebrity endorsement literature, Amos, Holmes, and Strutton (2008) demonstrated that negative information about a celebrity had the largest impact ($R = -.62$) on advertising effectiveness. Despite the apparent double-edged sword of celebrity influence, approximately 30% of American advertisements feature celebrities (Yeshin, 2006).

Celebrity influence extends beyond consumer attitudes and purchasing behavior. In fact, health communication research indicates that star power can generate public interest in health issues and even result in behavioral change (Noar, Willoughby, Myrick, & Brown, 2014). For example, researchers have explored public responses to singer Kylie Minogue's breast cancer diagnosis (Chapman, Holding, McLeod, & Wakefield, 2005), reality television star Jade Goody's death from cervical cancer (Lancucki, Sasieni, Patnick, Day, & Vessey, 2012), reporter Katie Couric's on-air colonoscopy (Cram et al., 2003), soccer icon Diego Maradona's drug-related health crisis (Brown & de Matviuk, 2010), professional athlete Mark McGwire's androstenedione use (Brown, Basil, & Bocarnea, 2003a), and basketball star Magic Johnson's HIV disclosure (Casey et al., 2003). Chapman, Holding, McLeod, and Wakefield (2005) found that bookings for breast cancer screenings in Australia rose 40% in the 2 weeks following Australia-native Kylie Minogue's announcement that she had been diagnosed with breast cancer. After Jade Goody was diagnosed with cervical cancer while living in the *Big Brother* house, cervical cancer screenings rose 30% in England. Seven months later, when she died from the disease, screenings were up 70% from the previous year (Lancucki et al., 2012). Cram and colleagues (2003) documented a similar increase in colorectal cancer screenings in the 9 months following Katie Couric's televised colonoscopy.

These studies demonstrate the potentially powerful impact of exposure to celebrity health crises and campaigns; however, as Brown and Basil (1995) noted, "mere exposure . . . does not

sufficiently explain the public's attitudinal or behavioral responses" (p. 349). In addition to assessing exposure to these kinds of stories, some researchers advise considering the public's identification with the celebrity in question. Identification, first defined by Kenneth Burke (1925) as the "margin of overlap between" one person's experience and another's (p. 168), is thought to be an important predictor of public responses to celebrity news stories (Brown, Basil, & Bocarnea, 2003b). Empirical tests support claims made about the importance of considering identification when studying celebrity influence. For example, in a study of the effects of Magic Johnson's HIV disclosure, Brown and Basil noted that those who identified with the basketball player expressed greater concerns about HIV/AIDS and intentions to reduce high-risk behaviors. In a replication study, Basil (1996) also found that identification mediated the effects of exposure to Magic's disclosure on participants' cognitive responses to his story and that the effects attributed to identification were "over and above those implicated through more direct paths" (p. 491). Researchers have noted similar findings in studies of Princess Diana's (Brown et al., 2003b), Steve Irwin's (Brown, 2010), and Diego Maradona's (Brown & de Matviuk, 2010) influence on the general public. Taken together, these studies underscore the importance of considering identification when examining the hypothesized Angelina effect.

A closely related and equally applicable concept is *parasocial interaction*, defined as a one-sided exchange between an audience member and a media persona (Rubin & McHugh, 1987). Since Horton and Wohl (1956) coined the phrase in their seminal work on viewer responses to television characters, parasocial interaction, alternatively construed as a parasocial relationship, has received considerable scholarly attention (Giles, 2002). This literature is guided by the assumption that people's parasocial interactions mirror their interpersonal ones, such that engaging in a parasocial relationship is considered to be a "functional alternative" to forming close interpersonal connections (Rubin & Rubin, 1985). Treating parasocial relationships like interpersonal ones affords media personalities the kind of social capital and influence usually reserved for close relational partners. Thus, a beloved media persona can serve as a behavioral referent or model for viewers (Cohen, 2009). This idea has been supported in several studies that have linked parasocial relationships to behavioral responses or outcomes, such as purchasing products (e.g., Grant, Guthrie, & Ball-Rokeach, 1991); adopting and/or changing health-related practices (e.g., Tian & Yoo, 2015); and engaging in prosocial behaviors, such as volunteerism and organ donation (e.g., Bae, Brown, & Kang, 2011).

Although similar, identification and parasocial interaction differ in subtle but important ways. First, parasocial relationships involve imagined interactions with a media persona but do not require identification. One need not identify with a celebrity in order to form a pseudorelationship with him or her (Rosengren & Windahl, 1972). Second, identification operates according to the homophily principle—like likes like—whereas parasocial relationships do not necessitate liking or perceived similarity (Giles,

2002). Thus, parasocial interaction has been deemed a necessary, but not sufficient, condition for identification. Given that identification and parasocial interaction are linked, not only to each other but also to viewer attitudes and behavior, both concepts warrant consideration in the present investigation.

Brown and Fraser (2008) integrated the two concepts in a model of the celebrity influence process, which makes it a fitting framework for this analysis. The model, however, is still in need of testing and further development. It revolves around four general propositions: (a) Media exposure creates parasocial relationships between viewers and celebrities; (b) parasocial interaction leads to identification with a celebrity; (c) celebrity identification fosters “issue-related awareness, values, and behavior consistent with the celebrity”; and (d) more identification with the celebrity will produce more audience awareness and lead to the audience’s adoption of the values, beliefs, and behaviors modeled by the celebrity (pp. 107–108). One strength of this model is that, unlike other theories that treat identification and/or parasocial interaction as a product of the media–viewer relationship, Brown and Fraser position identification and parasocial relationships as process variables. As Cohen (2009) argued, such a theory is needed to advance understanding of how these mediated relationships might mediate “meaningful media effects.” He cautioned, however, that, even if we as researchers treat identification and parasocial interaction as process variables, only with continued examination of their relationship to each other “will we be able to arrive at a better understanding of the effects of media on individuals and society” (p. 234). To further our understanding of mediated relationships and their potential to mediate health-related media effects, we sought to test Brown and Fraser’s model in the context of Angelina Jolie’s BRCA1 announcement. The Borzekowski and colleagues (2013) study findings regarding exposure to the Angelina

story and the Brown and Fraser model led us to the following hypotheses:

- Hypothesis 1: The majority of those surveyed will have heard about Angelina Jolie’s health-related announcement.
- Hypothesis 2: Women who read a celebrity’s health-related announcement will report a stronger parasocial relationship with that celebrity than those who do not read the announcement.
- Hypothesis 3: There will be a positive relationship between women’s parasocial relationship to a celebrity dealing with BRCA1 and their level of identification with that celebrity.
- Hypothesis 4: There will be a positive relationship between women’s level of identification with a celebrity dealing with BRCA1 and their intentions to engage in BRCA testing.

This last hypothesis completes the path model in Figure 1.

Although generally considered a strength, the model’s parsimony might be its weakness. The extant literature on celebrity influence indicates some additional paths to consider. For example, individual difference variables are given short shrift in Brown and Fraser’s (2008) model despite having what some researchers have called a “pronounced impact on individuals’ parasocial interaction and identification” (Smith et al., 2009, p. 65). Previous research in this area underscores the importance of similarity in the celebrity influence process (Basil, 1996), such that viewers are more likely to identify or form parasocial relationships with celebrities of the same age group, gender, and/or race (e.g., Brown & de Matviuk, 2010; Williams & Qualls, 1989). These findings suggest that a

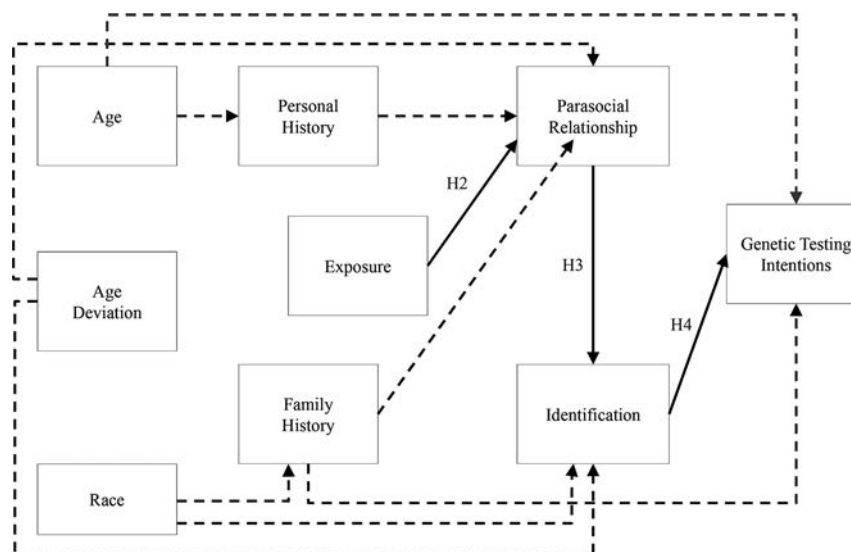


Fig. 1. Path model. The solid lines represent hypotheses from Brown and Fraser’s (2008) model of celebrity influence, and broken lines represent the additional paths from our hypothesized model. H = hypothesis.

celebrity's demographic characteristics are particularly salient to viewers. In the context of a celebrity health crisis, having a health profile or history similar to that of the celebrity might be an equally salient characteristic. Although the gendered nature of our dependent variable precluded us from examining gender differences, we were able to explore participants' similarity to Angelina in terms of race, age, and health history. To determine whether these variables add any explanatory power to Brown and Fraser's model, we posed a research question: To what extent does the inclusion of demographic (i.e., race and age) and health history (i.e., personal and family history of cancer) variables influence the fit of Brown and Fraser's model to the data?

Method

Recruitment and Sampling

We constructed a questionnaire to assess our hypotheses and research question and posted links to the survey on social networking sites and online bulletin boards, such as craigslist.org. In addition, we received a coupon code from backpage.com, which allowed us to post recruitment announcements in all cities and metro areas serviced by the site (i.e., more than 200 locations in the United States). Recruitment materials detailed the study's inclusion criteria (i.e., the study was open to anyone 18 or older with proficiency in English and Internet access) and informed potential participants that they could enter a raffle to win one of five \$50 gift cards for their involvement. These efforts resulted in a total sample of 356 participants.

The majority of the sample was female ($n = 280$), with three individuals choosing not to disclose their sex. Participant ages ranged from 18 to 71 years, with a mean age of 34.09 ($SD = 12.96$). Most participants were Caucasian ($n = 251$), and 70 self-identified as African American. Equal numbers ($n = 24$) of participants identified as Asian American and as Hispanic/Latino/Latina, and 13 participants selected "other" for their race. Nearly 70% of the sample ($n = 248$) had a family history of cancer, and 7.02% ($n = 25$) reported a personal history with cancer.

Measures

Exposure

Participants were asked, "Did you hear about Angelina Jolie's recent medical situation?" This variable was used to test Hypothesis 1. Those who answered "yes" were then asked whether they read Angelina's original op-ed article or heard about her statement via the subsequent media coverage. We coded these closed-ended responses as either reading her op-ed first (1) or finding out about her health issue from a different source first (0).

Identification

A scale used to measure identification with Magic Johnson was adapted to assess identification with Angelina Jolie. The original scale contained eight Likert items (Brown & Basil, 1995), all of which were rewritten by replacing "Magic

Johnson" with "Angelina Jolie" and adjusting all gendered language. Cronbach's alpha reliability measure was sufficient on this scale ($\alpha = .76$).

Parasocial Relationship

We also used the Celebrity-Persona Parasocial Interaction Scale, which consisted of 20 Likert items (Bocanea & Brown, 2007). We decided to eliminate one item that implied that the celebrity in question was a television personality. Cronbach's alpha reliability measure was sufficient on this 19-item scale ($\alpha = .96$).

BRCA Testing Intentions

To assess female participants' intentions to be tested, we asked, "At the present time, which of the following statements describes your thoughts about having genetic testing for susceptibility to breast cancer?" Participants could answer "I definitely will not get tested" (1), "I probably will not get tested" (2), "I haven't thought about it" (3), "I probably will get tested" (4), "I definitely will get tested" (5), or "I already was tested" (6).

Age Deviation

Angelina's age when she made her announcement (i.e., 38 years) was subtracted from each participant's age. Taking the absolute value of that difference yielded the deviations scores for this analysis.

Results

We tested our hypotheses using bivariate correlations and several structural equation models. For Hypothesis 1, the entire sample ($N = 356$) was used, and for subsequent hypotheses in the structural equation model, we used a subsample of female participants who had heard about the announcement and had yet to be tested for BRCA ($n = 229$). The demographic characteristics of this subsample are reported in the bottom row of Table 1. We note here that, for testing the significance of coefficients, we initially chose to report items at $p < .10$ under the assumption that our relatively small and nonrandom survey sample may have increased the likelihood of Type II error. These analyses were carried out in Mplus (Version 7.3).

Hypothesis 1 claimed that the majority of individuals sampled would have already heard about Angelina's announcement. This hypothesis was supported with a one-variable chi-square test that suggested a significant difference between the 295 participants who had already heard about Jolie's announcement and the 61 people who were not yet exposed to the news story, $\chi^2(1) = 153.81, p < .001$.

Bivariate correlations for the variables in our hypothesized structural equation model are provided in Table 1. Note that there were many significant relationships between these variables.

Model Comparisons

The first model we tested was a baseline model that included only the four Brown and Fraser (2008) variables: exposure to the op-ed, parasocial relationship,

Table 1. Intercorrelations, means, and standard deviations for structural equation model variables

Variable	1	2	3	4	5	6	7	8	9
1. Age	—								
2. Age deviation	.120*	—							
3. Race (White)	-.126	.005	—						
4. Family history	.130	.073	.364***	—					
5. Personal history	.310*	-.035	-.036	.343	—				
6. Exposure	-.037	-.106	.126	-.029	-.086	—			
7. Parasocial relation	-.105	-.085	.108	.160	.200	.139	—		
8. Identification	-.114	-.014	-.161	.121	.048	.140	.692***	—	
9. Genetic testing intention	-.271***	.024	-.237**	-.022	-.057	.038	.202***	.231***	—
<i>M (SD) or %</i>	34.81 (12.76)	11.32 (6.69)	69.3%	72.9%	5.2%	31.0%	2.30 (0.78)	2.80 (0.52)	2.96 (1.02)

Note. *N* = 229. The percentage of individuals in Category 1 is reported for dichotomous variables.

p* < .05. *p* < .01. ****p* < .001.

Table 2. Goodness-of-fit indices and chi-squares for structural equation models

Model	χ^2	<i>df</i>	<i>p</i>	CFI	RMSEA	90% CI	Probability RMSEA ≤ .05
Model 1: Baseline	1.537	3	.674	1.00	.000	[.000, .086]	.825
Model 2: Restricted	59.161	27	.000	.721	.072	[.047, .097]	.071
Model 3: Hypothesized	21.092	17	.222	.964	.032	[.000, .072]	.728

Note. Models 2 and 3 were fitted with a weighted least-squares estimator (WLSMV) in Mplus because of a dichotomous dependent variable (family history) and are not directly comparable to Model 1. The results of a differences test between Models 2 and 3 showed that the restricted model had a significantly poorer fit to the data than the hypothesized model, $\chi^2 = 35.481$, *df* = 10, *p* = .000. CFI = comparative fit index; RMSEA = root mean square error of approximation; CI = confidence interval.

identification, and behavioral intention. Relationships between these variables are represented by the black lines in Figure 1. The second model was our restricted model. The restricted model included all of the variables from our hypotheses, but we freed paths only between the four variables in the Brown and Fraser model. The remaining paths were fixed to zero. The final model was our hypothesized model. For this model, we took the restricted model and opened paths representing all of our hypotheses shown in Figure 1, which resulted in a less restrictive model. For comparison, the results of the three models are shown in Table 2.

The model comparison showed that the baseline model had a very good fit to the data. In other words, the four variables were significantly related to one another, demonstrating some of the value of the parsimonious Brown and Fraser model. The restricted model, with its many paths restricted to zero, fit the data relatively poorly. The main comparison of interest, however, was between the hypothesized and restricted models. For this comparison, we used the DIFFTEST command in Mplus, which indicated that the hypothesized model fit the data significantly better than the restricted model, $\chi^2 = 35.481$, *df* = 10, *p* = .000. We could not make a direct statistical comparison between these two models and the baseline model because the models were not nested and were tested with different estimators in Mplus; however, as a descriptive comparison, we can observe that as we added our hypothesized relationships between variables, the model gained explanatory value even at the expense of parsimony.

Hypothesized Model Results

We report the results of our hypothesized model in Figure 2. We observed significant relationships between exposure and parasocial relationship ($B = .21$, *p* < .10), parasocial relationship and identification ($B = .50$, *p* < .001), and identification and behavioral intention ($B = .55$, *p* < .001). Several other paths were significant as well, including relationships between age and personal cancer history ($B = .03$, *p* < .10), race and family cancer history ($B = .65$, *p* < .001), parasocial relationship and family cancer history ($B = .19$, *p* < .05), race and identification ($B = -.24$, *p* < .001), and age and genetic testing intentions ($B = -.02$, *p* < .000). Several of our expectations did not receive support from these results. These included the relationships between personal cancer history and parasocial relationship, age deviation and parasocial relationship, age deviation and identification, and family cancer history and behavioral intention. The relationships described by Brown and Fraser (i.e., H2, H3, and H4) were robust in our hypothesized model; the coefficients were essentially the same as in the baseline and null models.

We also investigated two potential indirect effects of interest using the MODEL INDIRECT command in Mplus along with bias-corrected bootstrapped confidence intervals (BCBOOTSTRAP command, 500 random draws). One was the relationship between family cancer history and intentions (for which the direct effect was not significant), and the other was between exposure and intentions (for which we did not hypothesize a direct effect). We observed a small but positive indirect effect on intentions for both

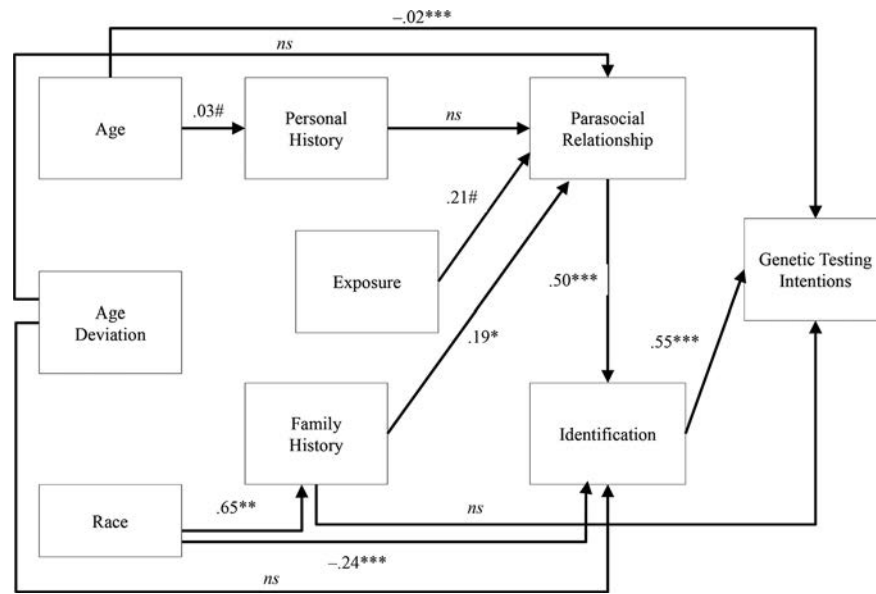


Fig. 2. Results for hypothesized model of celebrity influence on intentions for genetic testing. Unstandardized direct effects are reported. $N = 229$. # $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

family history ($B_{\text{indirect}} = .07$, $p < .10$; 90% confidence interval [.008, .22]) and exposure to Angelina's original op-ed ($B_{\text{indirect}} = .06$, $p < .10$; 90% confidence interval [.005, .14]). The variance explained by the paths in the model differed by variable: 14.9% for behavioral intentions, 57.4% for identification, 7.8% for parasocial interaction, 8.2% for family cancer history, and 9.2% for personal cancer history.

Discussion

This examination of the Angelina effect answers Noar and colleagues' (2014) call for "more research on the impact of contemporary public figure announcements on cancer-oriented outcomes" (pp. 456–457). The results of this study indicate that Jolie's announcement had both reach and impact, particularly among those who identified with her. The study findings also support Brown and Fraser's (2008) model but suggest that, at least in this context, race and cancer history are important considerations. The following paragraphs review each of these results and discuss possible explanations and implications.

Most participants (83%) were familiar with Angelina's story. This finding is not surprising given content analytic work on the subject. In a review of the newspaper coverage of Angelina's announcement, Kamenova, Reshef, and Caulfield (2014) noted that the story received significant media attention. For example, Jolie was featured on the cover of *People* magazine for two consecutive weeks following the announcement, and in England her face graced the front pages of every national newspaper (Borzekowski et al., 2014). Evidence suggests that these kinds of stories (i.e., celebrity profiles) dominate the cancer news landscape, accounting for as much as 26% of all cancer news (Jensen, Moriarty, Hurley, & Stryker, 2010). The prevalence and

reach of these stories is worth noting, given the potential for media to dictate the public agenda and public policy (McCombs & Shaw, 1972). Although researchers have yet to explore the agenda-setting processes and effects associated with celebrity health news coverage, anecdotal evidence suggests that celebrities can have a direct impact on public policy. Celebrities are able to leverage their fame for access to politicians and public political forums in which to discuss their causes. Numerous celebrities, ranging from Mary Tyler Moore to Christopher Reeve, have lent their star power to health causes by testifying before Congress, an opportunity rarely afforded the average American (Beck, Aubuchon, McKenna, Ruhl, & Simmons, 2014). Although Moore and Reeve are credited with helping the National Institutes of Health double its budget, which increased funding for research on all diseases, some worry that celebrity health advocacy will draw attention and funding to some diseases and not others (Cho, 2002). As Beck et al. (2014) wondered, "Should we really be making funding priorities based on passionate pleas by celebrities? Should our efforts in terms of health education be motivated by celebrity health challenges?" (p. 253). To answer these questions, additional research exploring the impact of celebrity health news and Congressional testimonies on the public agenda and public policy is needed.

Previous research indicated the importance of considering identification when examining celebrity influence, and findings from this study buttress these claims. Women who identified with Angelina expressed greater intentions to pursue BRCA testing than those who did not align themselves with Jolie. This link between identification and behavioral intention warrants further consideration by communication scholars and practitioners. For example, identification might explain why some celebrities' health crises garner significantly more attention and thus have the potential for greater

impact than others. In a study of Google search term trends, Ellery and colleagues (2008) documented spikes in searches for “cancer” that corresponded to different celebrity cancer diagnoses; however, they found that not all celebrities engendered the same effects. For example, singers Melissa Etheridge, Sheryl Crow, and Kylie Minogue had all been diagnosed with breast cancer during the period examined by the authors, but only Minogue’s diagnosis had a significant impact on searches for “breast cancer.” Although identification with Kylie was not addressed in research done on her story and its effects (e.g., Chapman et al., 2005), it might account for the differential impact of the singers’ diagnoses. Additional research, comparing the influence of different celebrities, is needed to determine which celebrity health crises have resulted in the most media coverage and significant effects. Knowing which celebrities or which types of celebrities garner the most attention and have the greatest impact on public health will be important for practitioners who hope to harness star power for health promotion efforts.

This study also provides evidence of an Angelina effect. Although the direct path from family history to testing intentions was not significant, we observed a significant indirect link between the two mediated by one’s parasocial relationship and identification with Jolie. This suggests that family history alone did not motivate genetic testing but that, for women with affected family members and a parasocial relationship with Jolie, Angelina’s announcement strengthened their intentions to get tested. In effect, Angelina motivated women at risk for cancer to consider genetic testing. The health belief model (HBM) provides one possible explanation for these findings. According to the HBM, intentions to engage in a particular health behavior, such as genetic testing, depend on perceived vulnerability to a health threat and beliefs about barriers to and benefits of enacting the behavior (Rosenstock, 1974). These beliefs and perceptions are mediated by self-efficacy and cues to action, or stimuli that prompt the individual to act. Although the cue to action component of the HBM is not well understood (Graham & Pace, 2008), several scholars have hypothesized that a celebrity health crisis could serve as one such cue (e.g., Ayers & de Visser, 2011; Doyle, Ward, & Oomen-Early, 2010). Our findings suggest that celebrity health crises can activate behavioral intentions if the audience identifies and forms a parasocial relationship with the celebrity in question. Additional research, guided by the HBM and Brown and Fraser’s (2008) model of celebrity influence, is needed to clarify the cues to action construct and the role of celebrities in motivating health behaviors.

Finally, this study provides support for Brown and Fraser’s (2008) model. Each part of the model (i.e., media exposure leads to parasocial interaction, which fosters identification and prompts imitation of the celebrity’s modeled behaviors) was tested, and these tests confirmed its predictions. In addition, we examined factors that had been deemed important predictors or indicators of identification and parasocial interaction, such as age and race. Here, our findings differ from those of most previous studies, which indicate that people tend to identify with celebrities of a similar age and race (e.g., Brown et al., 2003b; Hoffner &

Buchanan, 2005; cf. Myrick, Noar, Willoughby, & Brown, 2014). In our study, age similarity was not a significant predictor of identification or parasocial interaction, and race was inversely related to identification, such that non-White participants were more likely to identify with Jolie than White participants. These findings could be attributed to various factors, such as Angelina’s agelessness, international humanitarian efforts, and multiracial family, or one of her other features, such as her physical attractiveness, might have been more salient and thus more likely to engender identification or a parasocial relationship. The extant literature indicates that for identification to occur, the two parties in a parasocial relationship must share some characteristics (Giles, 2002), but it is not clear which characteristics must be shared or which commonality is most important or significant. Additional theorizing, perhaps using Brown and Fraser’s model as a starting point, would help advance our understanding of the cues to action construct in the HBM and the processes involved in parasocial interaction and identification.

This study, like any, has its limitations. First, our reliance on a small, nonrandom sample limits our ability to generalize to the general population. Our recruitment methods, however, allowed us to reach a diverse group of participants from around the country, increasing our confidence in the external validity of our study. Second, we used a single item to assess behavioral intentions. Although this is common practice in research on genetic testing intentions (e.g., Cyr, Dunnagan, & Haynes, 2010; Green et al., 2004; Gwyn, Vernon, & Conoley, 2003), the use of a single item to measure intentions might have been a source of measurement error. In addition, we did not measure actual genetic testing behaviors or behavioral change. Given how quickly we began data collection after Angelina’s announcement, we thought it was unlikely that participants would have had time to react to the announcement by getting a genetic test. A longitudinal study would help determine whether Angelina’s story affected genetic testing behavior and for how long. Previous research on celebrity health announcements indicates that the effects of such announcements are generally short lived (Noar et al., 2014), but Angelina’s situation differs from most and thus might have longer lasting effects. Jolie’s gene mutation puts her at high risk for both breast and ovarian cancers, each of which runs in her family, but the bilateral mastectomy she had does not reduce her risk of developing ovarian cancer. She recently revealed that she had her ovaries and fallopian tubes removed after a blood test suggested that she might have early-stage ovarian cancer. Studying this double dose of exposure may yield important insights into the nature and length of celebrity influence and help communication practitioners leverage celebrity health stories (and their effects) for longer periods of time.

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