

Developing a Mediation Model for Narrative Evidence Processing Based on Social-Cognitive Variables and Agency-Based Cultural Exemplars

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This study develops three types of agency-based cultural narrative evidence based on a new theoretical model of narrative processing. Using structural equation modeling, several social-cognitive variables' influence on perceived narrative evidence quality, identification, engagement, and behavioral intentions to communicate family health history was tested. The results suggest the importance of narrative evidence quality, identification, and engagement in linking social-cognitive variables and behavioral intentions. Meanwhile, pairwise comparison tests show that the routes of message processing within the model were moderated by participants' cultural identity and the condition of cultural narrative evidence. The results suggest that perceived behavioral control may increase the effectiveness of cultural exemplars by enhancing the target audience's perceptions and processing of the cultural narrative evidence.

Keywords: cultural exemplar, narrative evidence, message effect, theory of planned behavior, moderated mediation

Exemplification theory (Zillmann, 2006) posits that the use of exemplars results in greater attention, comprehension, recall, and emotional responses. Modeling is a universal characteristic based on human agency. In this study, human agency is defined as individuals' capability to influence and shape their lives and environmental circumstances (Bandura, 2000). However, the cases as well as the influences of modeling are embedded within social structures, and thus the purpose of modeling varies across cultural contexts (Bandura, 2006). This suggests that cultural experiences affecting individuals' decision making may matter in the perception and formation of agency. In this vein, scholars have argued that health campaign narratives should address the targeted audience's understanding of specific health issues based on the audience's cultural characteristics (Dutta, 2007; Larkey & Hecht, 2009). More specifically, concordance between the cultural characteristics of a given audience and the public health approaches used to reach the audience's members may enhance the members' receptivity to, and salience of, health information (Resnicow, Baranowski, Ahluwalia, & Braithwaite, 1999).

A family's health history (FHH) is often used as a diagnostic tool to identify potential familial risks (Gutmacher, Collins, & Carmona, 2004). Knowing this history is helpful for making accurate risk

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assessments and identifying preventative management strategies (Parrott & Hong, 2014; Parrott, Hong, & Greenberg, 2015). Therefore, it is important to share health history among family members. Recent studies suggest that many Korean and Chinese people in the United States remain influenced by their native cultures (Zong & Batalova, 2016). The Korean and Chinese cultures are different from American culture in many ways, including in their orientations toward others and their intellectual traditions, and these cultural norms may influence individuals' communication about FHH (Chan, 2000; Hong, 2018b, 2019).

More specifically, unlike in North America, where there is not strong differentiation between in-group and out-group members, in East Asia, the structure of social relationships is fairly regimented and depends heavily on nuclear familism and particularistic collectivism based on Confucianism and patriarchy (Cho, 1985; Yum, 1988). Therefore, Chinese and Korean people tend to have narrower family boundaries as well as stronger privacy boundaries, which contribute to cross-cultural differences in FHH communication (Hong, 2018b). In addition, Chinese and Korean cultures are different from Western culture in that Western culture emphasizes teleological explanations for occurrences (Rottman et al., 2017). Previous research suggests that this cultural difference may affect cross-cultural differences in genetic beliefs as well as FHH communication (Hong, 2019). As this suggests, a Korean or Chinese FHH communication based on cultural norms varies from that of an American family.

Responding to these cultural differences in the framing and testing of narrative health messages, this study investigates the effect of cultural narrative evidence. Cultural exemplars that are used in narrative messages can help reach resistant audiences (Kreuter et al., 2007) by serving as group cues (Huang & Shen, 2016; Niederdeppe, Bigman, Gonzales, & Gollust, 2013). This study investigates the processing of cultural narrative evidence by testing this evidence within the context of a mediation model that draws on theoretical insights from health communication and social psychology.

Literature Review

Cultural Narrative Evidence, Social Cognitive Theory, and Human Agency

Narrative evidence serves an alternative to a plot-focused definition of narrative, especially in light of persuasion (Bilandzic & Busselle, 2013). In narrative evidence, a narrator functions as a source of evidence and supports the claims of a hidden speaker based on the narrator's views and experiences (Schank, 1990). The theory of situated cognition suggests that culture is a contextualized, collective cognitive schema based on individuals' cultural mindset (Oyserman, Sorensen, Reber, & Chen, 2009). Consequently, testimonials based on patients' cultural contexts have often been used to provide information to patients, and theory-based interventions using exemplars may contribute to more informed decision making. This is why narrative evidence that aids in persuasion may vary across cultures (Hornikx & Hoeken, 2007).

Sociocultural approaches to health messaging present information in the context of the social and/or cultural characteristics of the intended audience (Kreuter & McClure, 2004). According to social cognitive theory (SCT), most human functioning is socially situated, and thus psychological concepts such as agency are socially embedded (Bandura, 2006). The most distinct characteristic of agency is an individual's metacognitive capability to contemplate the adequacy of his or her own thoughts and actions

(Bandura, 2006). Guttman and Ressler (2001) point out that “promoting agency is more likely to benefit from a more discursive approach and from an intervention that employs messages that acknowledge complex societal factors that affect behavior beyond personal willpower” (p. 131). Cultural exemplars based on a society’s values can be used to design effective messages that take into account the structure of the specific culture (Hong, 2018a; Resnicow et al., 1999). Resnicow and colleagues (1999) refer to these characteristics (e.g., cultural values and norms) as comprising the “deep structure” of cultural sensitivity, which conveys salience to the target population when incorporated into health-promotion programs. Using this approach, a cultural group’s values, beliefs, and behaviors are recognized, reinforced, and built on to provide context and meaning for information and messages about health (Kreuter & McClure, 2004).

Moreover, in his theory of human agency, Bandura (2006) argues that one must differentiate inherent capacities from culturally shaped forms of these potentialities. As Guttman and Ressler (2001) point out, complex societal factors beyond personal willpower that affect behavior are the key components in promoting agency. This perspective is aligned with linguistic strategies in health communication that seek to make health campaigns and messages more accessible by providing them in the dominant or native language of the given audience segment (Kreuter & McClure, 2004). Resnicow and associates (1999) categorized this message feature as the surface structure, or observed peripheral cues (e.g., appearance, places, language, music, food, clothes), of a culture. Bandura’s (2000) concept of personal and collective efficacy helps explain how linguistic forms are related to the personal and collective capacity to act, or the perceived agency within a culture. Whereas self-efficacy describes agent “I”’s belief in his or her ability to accomplish a task, collective agency is related to people’s shared beliefs in their ability to use their collective power to produce the desired results (Bandura, 2000). Perceived collective efficacy is not simply the sum of individual members’ efficacy beliefs but an emergent group-level property, the locus of which resides in the minds of group members (Bandura, 2000) as the agentic form of “we.” Similarly, the cultural dimensions of individualism and collectivism capture how people define themselves using linguistically agentic forms such as “I” and “we” (Hofstede, 2001). Given that these linguistic forms are based on the cultural values a society holds, these forms can be understood in regard to Kreuter and McClure’s (2004) sociocultural approach as well. With this in mind, the present study manipulates the agentic forms (“I” vs. “we”) embedded in varying cultural exemplars to test the effect of cultural tailoring.

Testing Cultural Narrative Evidence With Social-Cognitive Variables

To test the effect of cultural narrative evidence, this study uses a mediation model (see Figure 1) that draws on theoretical insights from communication theory, health communication, and social psychology. The mediation model describes how the three social-cognitive variables of the theory of planned behavior (TPB)—attitude, subjective norms, and perceived behavioral control—influence the processing and effects of cultural narrative evidence. This study also tests whether perceptions of narrative evidence quality (NEQ) and message-processing variables (i.e., identification and engagement) mediate the associations among the three TPB variables and behavioral intentions (BI) and whether these associations differ across cultural identities and message conditions. The following sections explain how the mediation model was developed.

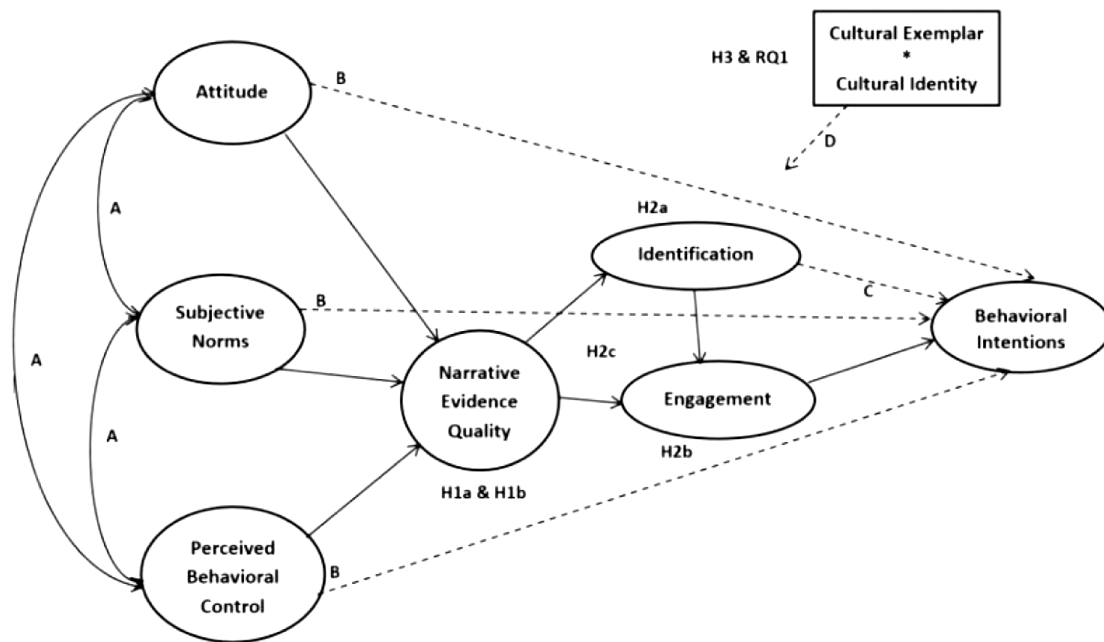


Figure 1. Conceptual model: The mediation model of TPB-EELM. Note. A: covariance between exogenous latent variables; B: potential direct effects of the TPB variables on behavioral intentions; C: potential direct effect of identification on behavioral intentions; D: potential moderated moderation effects of narrative evidence type and cultural identity on the associations among the variables. TBP = theory of planned behavior; EELM = extended elaboration likelihood model.

Like TPB, the theory of reasoned action (TRA; Ajzen & Fishbein, 1980) was developed based on SCT (Bandura, 1986). Both TPB and TRA focus on an individual's intention to perform a specific behavior given the expected outcomes of the behavior or perceived norms (Ajzen & Fishbein, 1980). Ajzen (1991) extended TRA to TPB by incorporating perceived behavioral control (PBC), or individuals' perceived agency. In particular, TPB recognizes the perceived self-efficacy derived from SCT as extending to PBC, thereby adding the vital component of controllability (Ajzen, 1991).

In health campaigns designed to change individual behaviors, the role of agency is important (Guttman & Ressler, 2001). Because agency helps strengthen both personal and collective intentions to perform a specific behavior and agency's core property is intentionality (Bandura, 2006), in this study, we manipulated the agentic forms of "I" and "we" embedded in various cultural exemplars to test the effect of cultural tailoring. Agency's effectiveness in strengthening personal or collective intentions varies across cultures because the represented agency in the message may or may not reflect situations that are psychologically meaningful to the members of a given culture. At the same time, the agentic components in both individuals' PBC and narrative evidence may influence the processing and outcomes of cultural narrative messages. More specifically, the effectiveness of promoting specific types of agency (i.e., personal vs. collective) may be influenced by individuals' perceived agency or control beliefs. Therefore, it is important

to see how the processing and outcomes of agency-based cultural narrative evidence are affected by individuals' PBC.

In addition to PBC, attitude and subjective norms are potential predictors of message processing and outcomes. According to Ajzen (1991), when predicting BI, the relative importance of each theoretical component may vary across behaviors and situations. Indeed, health researchers have found that general descriptions of individuals' attitudes toward health behaviors are imprecise because of cultural differences affecting individuals' decision-making processes (Parrott, Silk, & Condit, 2003). Research on message processing and its effects should consider different cultural backgrounds' influence on the measurements of the TPB components, as well as on the association between the components and the BI. The three variables can play significant and different roles in the processing of culturally tailored messages across different agentic orientations. For example, attitudinal similarities between the receiver and the message may affect message processing and the message's influence (Kreuter & McClure, 2004). There is substantial research on attitude as an outcome of message framing and processing in narrative persuasion (e.g., Slater & Rouner, 2002). Attitude and subjective norms have rarely been investigated as potential predictors of message processing and outcomes, however. Therefore, the present study measures the TPB-derived social-cognitive variables before message exposure and investigates these variables' influence on the processing and outcomes of cultural narrative evidence.

Processing and Effects of Cultural Narrative Evidence

To better explain narrative processing, Slater and Rouner (2002) developed an extended elaboration likelihood model (EELM) that expands on the conventional elaboration likelihood model (ELM; Petty & Cacioppo, 1986) by emphasizing the role of identification and engagement in the processing and effects of narrative messages. In Green's (2004) study, individuals who had personal experiences similar to those of the protagonist in the given narrative were more engaged in the story. Other studies on narrative have suggested that identification with a character may be processed through similarity that leads to story-consistent beliefs (Cohen, 2006; de Graaf, Hoeken, Sanders, & Beentjes, 2012). Accordingly, connecting with the characters in a narrative appears to be an important determinant of behavioral change (Larkey & Hecht, 2009; Slater & Rouner, 2002), as narrative messages resonate more effectively with audiences whose members have had similar experiences (Niederdeppe et al., 2013). Furthermore, Slater and Rouner (2002) argued that identification might be partly predicted by SCT's major variables (Bandura, 1986), reflecting homophily between the narrative's protagonists and the audience. Larkey and Hecht's (2009) model of the culture-centric narrative also posits that message characteristics related to homophily predict the processing and behavioral effects of narrative messages. The homophily in this study's model includes the similarity found in a narrative message based on the audience's perceptions of attitude, subjective norms, and behavioral control. In cultural narrative messages, these similarities may reflect the cultural embeddedness of the narrative characteristics (Larkey & Hecht, 2009). This makes it possible that the three theoretical components of TPB, which were developed based on SCT (Bandura, 1986), directly or indirectly affect identification, engagement, and ultimately BI (see Kreuter et al., 2007; Larkey & Hecht, 2009; Slater & Rouner, 2002).

In both EELM (Slater & Rouner, 2002) and the model of culture-centric narratives (Larkey & Hecht, 2009), the importance of narrative quality is emphasized in regard to the audience's message processing.

In particular, according to EELM (Slater & Rouner, 2002), an individual's engagement with a narrative depends on his or her interest in the plot, and this interest, in turn, depends on the quality of the narrative. Reynolds and Reynolds (2002) argued that for a message to be persuasive, it is important for an audience to perceive the evidence as being of high quality. According to persuasion literature, perceived message quality is a judgment of the effectiveness of a message in achieving its intended outcome (Dillard, Weber, & Vail, 2007). Narrative evidence includes the characteristics of both evidence and story used in entertainment education (Hong, 2016, 2018a; Schank, 1990). Therefore, the perceived quality of narrative evidence may include an audience's evaluations of both the argument and story. An audience's evaluation of health campaign messages frequently depends on the members' perceptions of the messages, including the members' attitudes toward the messages and perceived message quality (Dillard et al., 2007). Attitudes associated with consistent underlying belief structures are particularly likely to influence the evaluation of information related to the issue in an attitude-consistent fashion (Lavine & Snyder, 1996). In a study based on ELM (Petty & Cacioppo, 1986), argument quality moderated the effect of message manipulation on participants' behavior (Updegraff, Sherman, Luyster, & Mann, 2007). Cho and Boster (2008) argued that perceived message quality may influence perceived identification and perceived message effects. These studies suggest that perceived quality may affect both narrative processing and BI.

As discussed above, identification and engagement are predicted by the three TPB components and narrative quality (Bandura, 1986; Slater & Rounder, 2002), whereas attitude influences an audience's evaluation of narrative evidence (Dillard et al., 2007; Lavine & Snyder, 1996). Given the positive associations among attitude, subjective norms, and PBC (Ajzen, 1991), it is possible that an audience's perception of NEQ mediates the associations between the three TPB variables and narrative processing.

H1a: NEQ mediates the associations among the three TPB variables and identification.

H1b: NEQ mediates the associations among the three TPB variables and engagement.

Narrative engagement refers to the intense experience people may have while reading a story (Busselle & Bilandzic, 2008). Although previous literature has suggested that identification is related to general narrative experiences such as engagement (or transportation), the exact causal relationship is still unclear. These processes may operate in parallel or sequentially (Busselle & Bilandzic, 2008). Regardless, several entertainment education scholars (e.g., Busselle & Bilandzic, 2008; de Graaf et al., 2012) have discussed the importance of identification as a predictor of engagement, especially when an audience needs vicarious social relationships from a given narrative. In addition, according to EELM (Slater & Rouner, 2002), increased identification and engagement positively predict behavioral effects. Given that NEQ and social-cognitive variables predict identification and engagement, which, in turn, predict BI, the following hypotheses can be posited.

H2a: Identification mediates the association between NEQ and engagement.

H2b: Engagement mediates the association between NEQ and BI.

H2c: NEQ, identification, and engagement mediate the associations among the three TPB variables and BI.

Cultural narrative messages are expected to persuade those for whom the cultural referents used in the message have cultural meanings through the individuals' identification and engagement. As discussed above, identification and engagement can be predicted by social-cognitive variables such as attitude, subjective norms, and PBC (Slater & Rouner, 2002), and the relative effects of these three components on BI may vary across cultures (Ajzen, 1991). Therefore, an audience's cultural identity as well as the narrative evidence reflecting its members' culturally common experiences may influence the associations among the TPB components, identification, engagement, and BI in the mediation model (see Figure 1).

H3: The routes of message processing including the three TPB variables, message processing, and BI are moderated by participants' cultural identity and the cultural narrative message condition.

RQ1: Is the mediating role of perceived NEQ consistent across message and identity conditions?

Methods

Participants and Procedures

Participants were recruited in two ways. The study was advertised as part of a basic public-speaking course's research pool for the 2014 spring and summer semesters at a Research I university in the United States. Students received 2% credit in their course after participating in the online study. Because the majority of undergraduate students attending the university are of European American descent, the researcher recruited additional South Korean and Chinese participants via the international office of the university and the Korean student associations of other universities. Ultimately, 261 (43.2%) European American, 177 (29.3%) Chinese, and 166 (27.5%) Korean students participated in this study. These participants were paid \$7 each for their 30-minute participation in the online survey. Each participant was randomly assigned to one of the three cultural narrative messages. Participants ranged from 17 to 32 years of age ($M = 20.34$). About half of the participants indicated that they were female ($n = 332$), and about half indicated that they were male ($n = 272$). The TPB-derived variables were measured before the participants read the messages. The participants answered questions regarding message processing and outcomes after reading the assigned messages.

Development of Cultural Narrative Evidence

As formative research, a total of 12 interviews were conducted in 2012 with six South Korean (three males, three females) and six Chinese (three males, three females) graduate students ages 25–36 years ($M = 29.92$) who attended the same university as the students who participated in the actual study. Participants were asked 15 open-ended questions about their knowledge of, thoughts about, and communication experiences regarding family history. All interviews were audio recorded, and each lasted about one hour. Transcription resulted in 148 pages of single-spaced data, ranging from 3,712 to 7,325 words per interview. Grounded theory was used for the development of research themes (Glaser & Strauss, 1967). Ultimately, four Korean archetypes and four Chinese archetypes were identified in the transcribed data. Using the findings from the interviews, varying the culturally common stories promoting agency, and holding constant the factual statements included as evidence, three cultural narrative messages were

developed: a Korean social-embeddedness message, a Chinese social-embeddedness message, and a European American autonomy-control message (hereafter, autonomy-control message). The narrative messages featured different types of agency to present cultural differences related to social-cognitive as well as sociolinguistic aspects. To embody the linguistic indicator of “we” in the Chinese and Korean messages, “your family” as the source of agency was emphasized. On the other hand, in the autonomy-control narrative, “you” was described as the source of agency, thereby emphasizing the individual’s control. The cultural archetypes were then incorporated into the Korean and Chinese messages. The four archetypes represented in the Talk Health History Campaign (2008) in Washington, DC, comprised the content for the autonomy-control narrative (see Table 1).

Using convenience sampling, 30 South Korean and Chinese undergraduates attending the university were recruited to pilot these messages. The researchers then assessed (1) whether the constructed narratives were perceived as intended and (2) how Korean and Chinese participants understood the questionnaire and the narratives. The messages were revised according to the participants’ opinions. In the final three messages, the length, readability, FHH-related content, and disease conditions were controlled. All narratives were titled “Talk about Your Family Health History” and included source information. The FHH communication content was developed based on the FAQs and basic information used for the Talk Health History campaign. In each of the messages, the narrator shared information about the definition of FHH, two disease conditions (cancer and heart disease), the reasons for FHH communication, and the kind of information that should be collected, as well as when and how to collect it. The Korean social-embeddedness message included 25 uses of “your family” and only three uses of “you.” The Chinese social-embeddedness message included 22 uses of “your family” and four uses of “you.” The autonomy-control message included five uses of “your family” and 22 uses of “you.” Narratives ranged from 603 to 615 words in length, and the Flesch-Kincaid readability scores for the narratives ranged from 8.6 to 9.2. These scores mean that the narratives were written at no higher than an eighth- or ninth-grade level. An excerpt from each message is presented in Table 1.

Table 1. Cultural Archetypes and Excerpts From Cultural Narrative Evidence.

	South Korean cultural archetypes	Chinese cultural archetypes	European American archetypes
Cultural archetypes	Optimistic "health" communication as a social norm Health is not an appropriate issue for open discussions Patriarchic/hierarchic family culture Communicating family health history only when a risk is salient	Communicating family health history before marriage Health is not an appropriate issue for open discussions Patriarchic/hierarchic family culture Culture-specific medical contexts	Being healthy is a priority Health equals a good life Knowledge is power and control I have control over my life and health
Excerpts	"Your family wants to live a healthy life. . . . Just talking about good health cannot prevent disease. Living a healthy life also requires understanding health risks."	"Family health history information is an important preventive tool for your family's future. . . . When you get married, your family will want to learn about your future spouse's family health history."	"One of the greatest joys in life is being healthy. For you to live a joyful and healthy life, you should know about your family's health history."

Measures

Cultural Identity

Participants' cultural identities were measured via self-reporting (i.e., "Which culture do you most identify with?" with the possible answers of Korea, China, the United States/America, and Other). Participants who chose "other" were not included in this study. Based on these self-reported data, the participants included 317 Americans, 169 Koreans, and 178 Chinese. Finally, 261 (43.2%) European American, 177 (29.3%) Chinese, and 166 (27.5%) Korean students who indicated their ethnicity and cultural identity are consistent with one another were included in this study.

Attitude

Eleven questions ($\alpha = .94$, $M = 5.78$, $SD = 1.19$) with semantic differential scales drawn from Ajzen (1991) and Osgood, Suci, and Tannenbaum (1957) were used to measure the participants' attitudes toward FHH communication. Two such scales featured response options ranging from 1 (*useless*) to 7 (*useful*) and from 1 (*worthless*) to 7 (*valuable*).

Subjective Norms

Based on the scales developed by Ajzen (1991), six Likert items ($\alpha = .90$, $M = 5.23$, $SD = 1.11$) were used to measure subjective norms (e.g., "Members of my family approve of my communicating FHH with family members").

Perceived Behavioral Control

Seven Likert items ($\alpha = .81$, $M = 5.11$, $SD = 1.00$) from Ajzen and Fishbein (1980) and Ajzen (1991) were used to measure PBC regarding FHH communication (e.g., "I am confident that I can talk about FHH with family members in next three months").

Narrative Evidence Quality

Participants' perceptions of NEQ were measured by employing a modified version (four Likert items; $\alpha = .94$, $M = 5.43$, $SD = 1.10$) of Parrott, Silk, Dorgan, Condit, and Harris's (2005) measures (e.g., "I think the information in the message is accurate").

Engagement

Six Likert items ($\alpha = .89$, $M = 4.38$, $SD = 1.12$) from Green and Brock (2000) were used to assess engagement in the message (e.g., "While I was reading the message, I could easily visualize the events in it taking place").

Identification

Four Likert questions ($\alpha = .86$, $M = 4.03$, $SD = 1.15$) adapted from Cohen (2006) were asked to assess identification with the message (e.g., "The speaker of the message reminds me of myself").

Behavioral Intentions

BI to communicate FHH were measured by six Likert items ($\alpha = .96$, $M = 4.62$, $SD = 1.39$; e.g., "I intend to get information about FHH for heart disease from my parents/grandparents/siblings/or other biological relatives such as aunts, uncles, nephews, and nieces within the next three months").

Data Analysis

Confirmatory factor analyses (CFA) were performed based on the fit indices (i.e., CFI > .95; RMSEA < .06) developed by Hu and Bentler (1999). To test the hypotheses and research questions, SPSS Version 22 and AMOS 22 were used. Specifically, the theoretical model developed for this study (see Figure 1) was examined by employing structural equation modeling (SEM). A percentile bootstrap method with 5,000 samples and bias-corrected 95% confidence intervals were used to identify total indirect effects in the multiple mediation model. Although a mediation effect may not be significant in an overall baseline model, it might be

significant under a specific group condition. A conditional indirect effect is defined as “the magnitude of an indirect effect at a particular value of a moderator (or at particular values of more than one moderator)” (Preacher, Rucker, & Hayes, 2007, p. 186). Pairwise comparison methods can be used to show the moderation effects of conditions within the structure of the mediation model by testing statistical differences between path coefficients across groups. Therefore, pairwise comparison tests were employed to examine the conditional indirect effects of cultural identity and cultural narrative type on the relations among the three TPB components, message processing, and BI. More specifically, the moderation effects of cultural identity on path coefficients were explored in each message condition in the multiple mediation model.

Table 2. Means, Standard Deviations, Cultural Differences, and Correlation of Major Variables.

Variable	Attitude	Norm	PBC	NEQ	Ident.	Eng.	BI
Attitude	1						
Subjective norm	.69***	1					
Perceived behavioral control	.43***	.45***	1				
Narrative evidence quality	.32***	.27***	.35***	1			
Identification	.16***	.21***	.11**	.14***	1		
Engagement	.22***	.27***	.14**	.33***	.75***	1	
Behavioral intention	.35***	.37***	.20***	.28***	.49***	.59***	1

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

Results

Message Manipulation Checks

Participants' perceptions of differences in cultural archetypes and agency revealed in the message conditions were measured by the following three Likert questions regarding perceived cultural closeness (Hong, 2016): (a) “I’m familiar with the situations and stories in the message”; (b) “This message presents a situation that is an accurate reflection of my culture”; and (c) “This message presents a situation that I can understand very well based on my cultural background” ($\alpha = .87$). An independent-samples t test showed that European American participants' perceived cultural closeness to the autonomy-control message was significantly higher than that of Asian participants (American: $M = 5.16$, Asian: $M = 4.62$, $p < .001$). However, similar effects were not found in either Korean or Chinese message conditions.

Testing the EELM-TPB Integration Model

To examine the effect of cultural tailoring, simple linear-regression tests that included the message-culture alignment condition as an independent variable were conducted on NEQ, identification, engagement, and BI. The results showed that only NEQ was significantly affected by the alignment condition ($\beta = -.08$, $p < .05$). With the exception of NEQ, the variables were not affected by the message-culture alignment condition. Then, to investigate Hypotheses 1a, 1b, 2a, 2b, and 2c, SEM was used to develop a model showing the relationships among the three TPB variables (attitude, subjective norms, and PBC), NEQ,

the message-processing variables (identification and engagement), and BI. After running several models reflecting the hypotheses and research questions, the model with the best model fit was chosen (see Figure 2). According to Hu and Bentler's (1999) indices, the model showed a good model fit (i.e., CMIN/DF = 2.47, RMSEA < .05, PCLOSE = .65, CFI = .95).

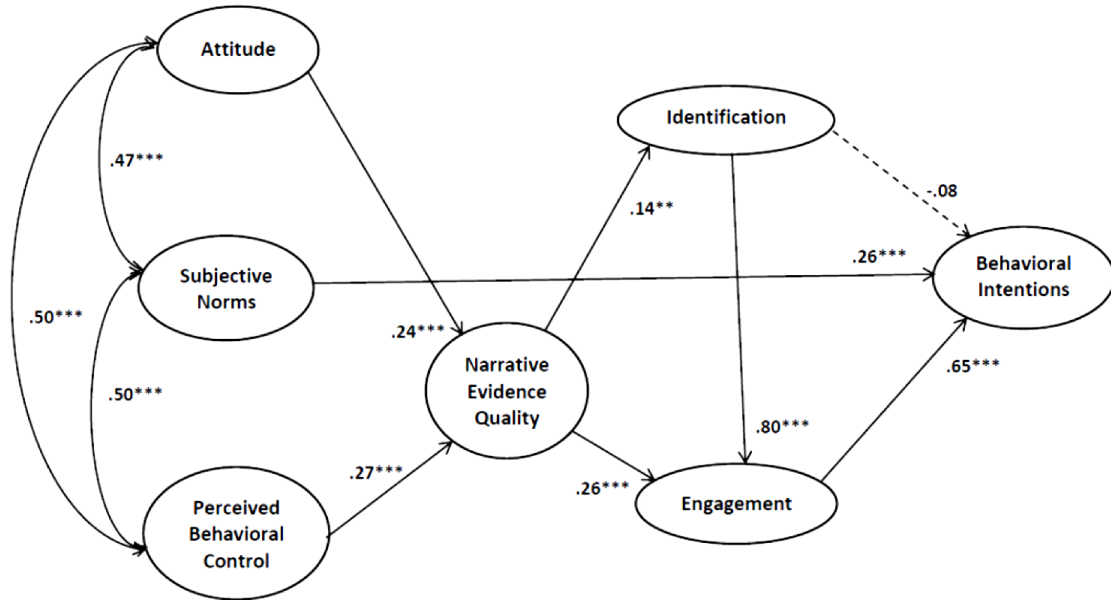


Figure 2. The mediation model of TPB-EELM (N = 604). * $p < .05$. ** $p < .01$. * $p < .001$.**

As shown in Table 3, NEQ mediated the associations among two TPB variables, identification (H1a), and engagement (H1b). The indirect effects of attitude and PBC were mediated through NEQ. Subjective norms had no effect on NEQ or on message processing (i.e., identification and engagement). The indirect effects of attitude (indirect effect = .034, $p < .01$) and PBC (indirect effect = .039, $p < .01$) on identification were significant and positive. Moreover, both attitude (indirect effect = .088, $p < .01$) and PBC (indirect effect = .101, $p < .01$) positively predicted engagement. Therefore, H1a and H1b were partially supported.

Table 3. Standardized Total Effect, Direct Effect, and Indirect Effect in the Mediation Model of TPB-EELM (Figure 2).

	Total effect (direct effect, indirect effect)					
	Attitude	PBC	SN	NEQ	ID	ENG
NEQ	.238** (.238**, 0)	.273** (.273**, 0)	-	-	-	-
ID	.034** (0, .034**)	.039** (0, .039**)	-	.142* (.142*, 0)	-	-
ENG	.088** (0, .088**)	.101** (0, .101**)	-	.371** (.257**, .114*)	.798** (.798**, 0)	-
BI	.055** (0, .055**)	.063** (0, .063**)	.263** (.263**, 0)	.231** (0, .231**)	.444** (-.077, .521**)	.653** (.653**, 0)

ID = identification; ENG = engagement. * $p < .05$. ** $p < .01$. *** $p < .001$.

As Table 3 shows, identification (H2a) and engagement (H2b) mediated the associations between NEQ and BI. The indirect effect of NEQ on BI (indirect effect = .231, $p < .01$) was significant. Both identification (direct effect = .142, $p < .05$) and engagement (direct effect = .257, $p < .01$) were positively predicted by NEQ, and BI were directly or indirectly affected by identification (indirect effect = .521, $p < .01$) and engagement (direct effect = .653, $p < .01$). Therefore, H2a and H2b were supported.

As hypothesized (H2c), NEQ, identification, and engagement mediated the associations between the two TPB variables and BI (see Table 3). The indirect effects of attitude (indirect effect = .055, $p < .01$) and PBC (indirect effect = .063, $p < .01$) on BI were significant. Meanwhile, subjective norms directly affected BI (direct effect = .263, $p < .01$). Attitude and PBC indirectly predicted both identification (attitude: indirect effect = .034, $p < .01$; PBC: indirect effect = .039, $p < .01$) and engagement (attitude: indirect effect = .088, $p < .01$; PBC: indirect effect = .101, $p < .01$), directly affecting NEQ (attitude: direct effect = .238, $p < .01$; PBC: direct effect = .273, $p < .01$). In turn, NEQ (indirect effect = .231, $p < .01$), identification (indirect effect = .521, $p < .01$), and engagement (direct effect = .653, $p < .01$) influenced BI. Thus, H2c was partially supported.

Results of Multigroup SEM and Pairwise Comparison Analyses

To see whether the direct and indirect effects of the three TPB variables, NEQ, and message processing on BI were consistent across the various messages and identity conditions or were moderated by participants' cultural identity and particular cultural narrative evidence condition (H3 and RQ1), a pairwise comparison was performed for each message condition. The moderation effects of cultural identity on path coefficients were explored in the mediation model.

Autonomy-Control Message Condition (Figure 3 and Table 4)

The results of the pairwise comparisons between Asian participants and European American participants show significant differences in the path coefficients between PBC and NEQ ($z = -2.018$, $p < .01$) and between NEQ and identification ($z = 2.270$, $p < .01$). Although the path coefficient between PBC and NEQ

was significant and positive for the European American participants (direct effect = .407, $p < .05$), no effect was found for the Asian participants. Moreover, while the path coefficient between NEQ and identification was significant and positive for the Asian participants (direct effect = .259, $p < .01$), no effect was found for the European American participants. Accordingly, the mediating role of NEQ differed across the identity conditions. For Asian participants, attitude directly predicted NEQ (direct effect = .256, $p < .05$) and, in turn, indirectly affected identification (indirect effect = .066, $p < .01$), engagement (indirect effect = .092, $p < .01$), and BI (indirect effect = .055, $p < .01$) via NEQ. For European American participants, PBC directly predicted NEQ (direct effect = .407, $p < .05$) and, in turn, exerted a marginal indirect effect on engagement (indirect effect = .066, $p < .10$) and a significant indirect effect on BI (indirect effect = .055, $p < .01$) via NEQ.

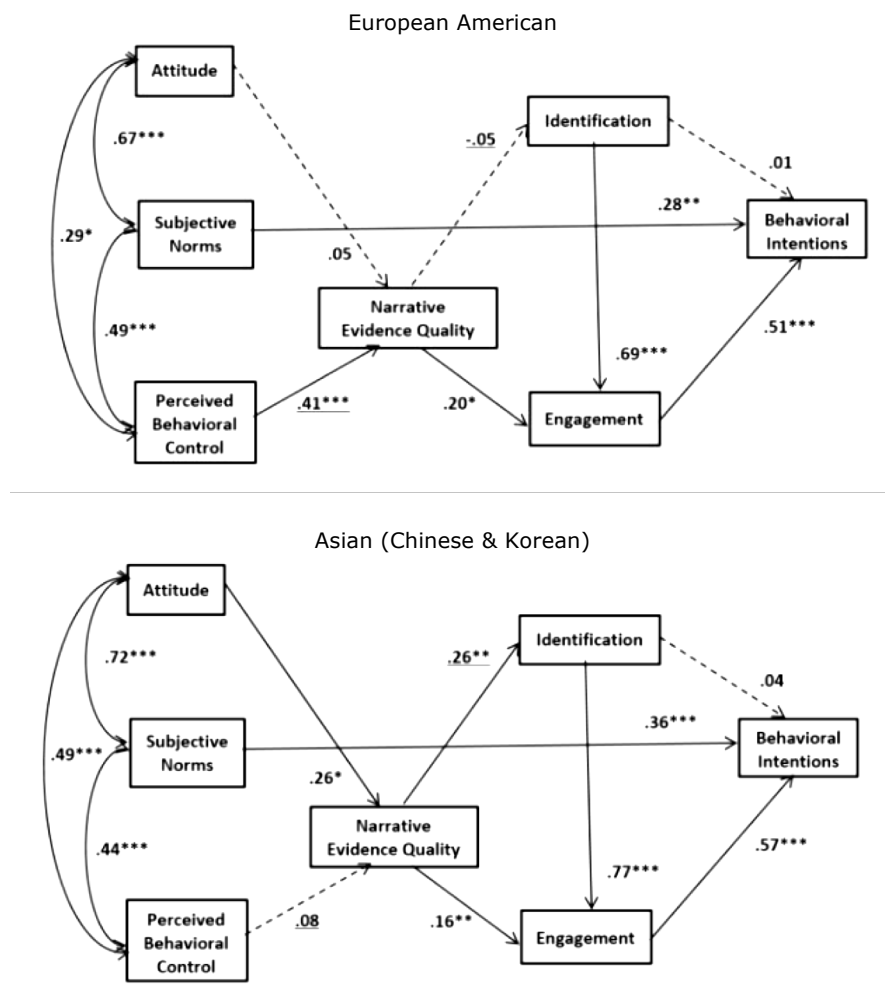


Figure 3. Multigroup TPB-EELM model (autonomy-control message condition, standardized, $n = 202$). Note. Underlined path coefficients are significantly different across cultures ($p < .05$). $CMIN/DF = 2.03$, $RMSEA = .07$, $PCLOSE = .12$, $CFI = .96$. * $p < .05$. ** $p < .01$. * $p < .001$.**

Table 4. Standardized Total Effect, Direct Effect, and Indirect Effect in the Autonomy-Control Condition (Figure 3).

Total effect (direct effect, indirect effect)						
European American						
	Attitude	PBC	SN	NEQ	ID	ENG
NEQ	.045 (.045, 0)	.407* (.407*, 0)	-	-	-	-
ID	-.002 (0, -.002)	-.022 (0, -.022)	-	-.053 (<u>-.053</u> , 0)	-	-
ENG	.007 (0, .007)	.066+ (0, .066+)	-	.162 (.198*, -.037)	.690** (.690**, 0)	-
BI	.004 (0, .004)	.033* (0, .033*)	.280** (.280**, 0)	.082 (0, .082)	.356** (.005, .351**)	.509** (.509**, 0)
Asian (Chinese & Korean)						
	Attitude	PBC	SN	NEQ	ID	ENG
NEQ	.256* (.256*, 0)	.082 (.082, 0)	-	-	-	-
ID	.066** (0, .066**)	.021 (0, .021)	-	.259** (.259**, 0)	-	-
ENG	.092** (0, .092**)	.030 (0, .030)	-	.359** (.159*, .200**)	.772** (.772**, 0)	-
BI	.055** (0, .055**)	.018 (0, .018)	.362** (.362**, 0)	.215** (0, .215**)	.481** (.042, .439**)	.568** (.568**, 0)

Note. Underlined path coefficients are significantly different across cultures ($p < .05$). * $p < .05$. ** $p < .01$.

Chinese Social-Embeddedness Message Condition (Figure 4 and Table 5)

The results of the pairwise comparisons between Chinese participants and European American participants show significant differences in the path coefficients between PBC and NEQ ($z = 2.653, p < .01$). Though the direct effect of PBC on perceived NEQ was significant and positive for the Chinese participants (direct effect = .504, $p < .01$), no effect was found for the European Americans. The mediating role of NEQ differed across the identity conditions as well. No significant mediation effect of NEQ was found for the European American participants. For Chinese participants, however, attitude (direct effect = .180, $p < .05$) and PBC (direct effect = .504, $p < .01$) directly predicted NEQ and, in turn, indirectly affected engagement (attitude: indirect effect = .072, $p < .05$; PBC: indirect effect = .201, $p < .01$) and BI (attitude: indirect effect = .028, $p < .05$; PBC: indirect effect = .077, $p < .05$) via NEQ.

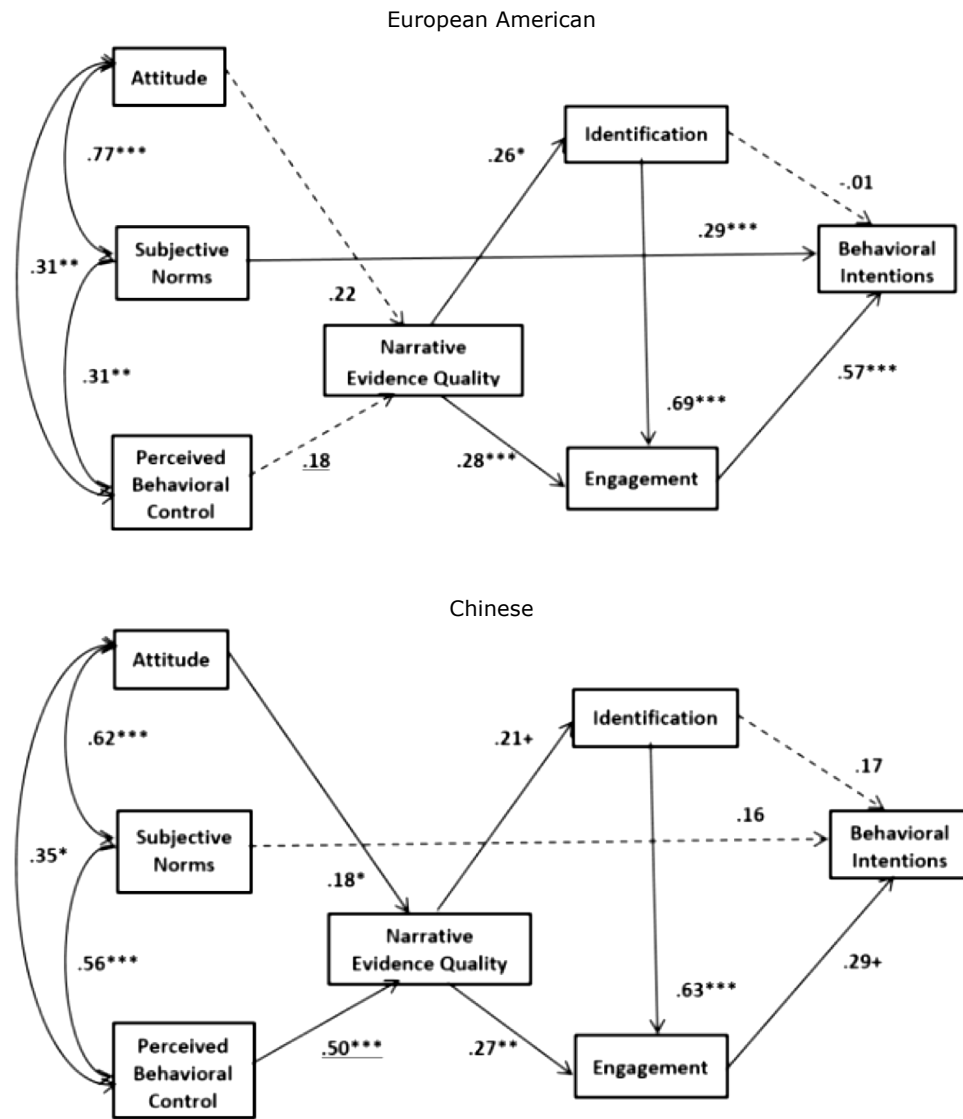


Figure 4. Multigroup TPB-EELM model (Chinese social-embeddedness message condition, standardized, $n = 147$). Note. Underlined path coefficients are significantly different across cultures ($p < .01$). $CMIN/DF = 1.42$, $RMSEA = .05$, $PCLOSE = .41$, $CFI = .98$. * $p < .05$. ** $p < .01$. * $p < .001$.**

Table 5. Standardized Total Effect, Direct Effect, and Indirect Effect in the Chinese Social-Embeddedness Condition (Figure 4).

	Total effect (direct effect, indirect effect)					
	European American					
	Attitude	PBC	SN	NEQ	ID	ENG
NEQ	.220 ⁺ (.220 ⁺ , 0)	.175 (.175, 0)	-	-	-	-
ID	.057 ⁺ (0, .057 ⁺)	.045 (0, .045)	-	.258* (.259**, 0)	-	-
ENG	.100 ⁺ (0, .100 ⁺)	.080 (0, .080)	-	.454** (.277**, .177*)	.687** (.687**, 0)	-
BI	.056 ⁺ (0, .056 ⁺)	.045 (0, .045)	.291** (.291**, 0)	.256** (0, .256**)	.382** (-.009, .391**)	.570** (.570**, 0)
Chinese						
	Attitude	PBC	SN	NEQ	ID	ENG
NEQ	.180* (.180*, 0)	.504** (.504**, 0)	-	-	-	-
ID	.038 ⁺ (0, .038 ⁺)	.106 ⁺ (0, .106 ⁺)	-	.211 (.211, 0)	-	-
ENG	.072* (0, .072*)	.201** (0, .201**)	-	.399** (.267*, .132 ⁺)	.625** (.625**, 0)	-
BI	.028* (0, .028*)	.077* (0, .077*)	.161 (.161, 0)	.153* (0, .153*)	.353* (.170, .184)	.294 (.294, 0)

Note. Underlined path coefficients are significantly different across cultures ($p < .01$). $+p < .10$. $*p < .05$. $**p < .01$.

Korean Social-Embeddedness Message Condition

The results of the pairwise comparisons showed no significant difference between Korean participants and European Americans participants. In addition, no significant mediation effect of NEQ was found.

Discussion

This study tested the TPB-EELM integration model to investigate the effect of cultural narrative evidence that promotes an audience's agency by emphasizing cultural exemplars in the framing and testing of narrative health messages. More specifically, to theoretically evaluate the processing of narrative evidence, narrative evidence was placed within a mediation model that drew on multiple theoretical insights in the context of FHH communication. The findings suggest meaningful implications for the use of cultural tailoring in health campaigns, while elucidating sociocultural influences on the processing and effects of narrative evidence.

First, the findings suggest the need for further investigation of the role of NEQ in linking social-cognitive variables and message processing. As hypothesized, participants' perceptions of NEQ mediated the associations among two TPB variables (i.e., attitude and PBC), identification, and engagement, which is consistent with existing theories such as EELM (Slater & Rouner, 2002) and the model of the culture-centric narrative (Larkey & Hecht, 2009). However, this finding might be limited because the cultural tailoring of this study was not that successful, as described in the Results section. Simple linear-regression tests showed that the alignment condition had a negative effect only on NEQ. Nevertheless, the mediation test results based on conditional indirect effects suggest that it can be still meaningful to delve into the associations between NEQ and other variables. EELM (Slater & Rouner, 2002) considers social-cognitive variables to be potential predictors of message processing. The findings of this study suggest the persuasive implications of social-cognitive variables in the context of message effects. While simple linear-regression tests show only linear relationships between two variables regardless of mediators, moderators, and other contextual variables, our findings from SEM and pairwise comparison tests suggest that the mediation model might be more meaningful under a specific group condition. Moreover, recognizing that persuasion and message-effects researchers have often used perceived message effectiveness (PME) as an important outcome variable that can predict behavioral outcomes (i.e., BI and changes; e.g., Cappella, 2018), this study broadens the scope of outcome variables available for consideration in future persuasion research. Although the contribution made by the present study's results might be limited, the results suggest the importance of future research on the relationship between PME and other outcome variables (e.g., NEQ) and how the outcome variables interact with each other, thereby affecting BI.

Second, the findings highlight the need for further investigation of the roles of individuals' processing and perceptions of persuasive messages in linking social cognition and BI. In this study, identification and engagement mediated the association between NEQ and BI, while NEQ, identification, and engagement together mediated the associations between the two TPB-related social-cognitive variables (i.e., attitude and PBC) and BI. Scholars have suggested the mediating roles of identification and engagement on the associations between social-cognitive variables and behavioral outcomes and have emphasized the importance of narrative quality in regard to message processing and effects (Dillard et al., 2007; Larkey & Hecht, 2009; Reynolds & Reynolds, 2002; Slater & Rouner, 2002), but few actual models have been developed and tested. This study's findings not only support the arguments of earlier scholars but also suggest these associations are worth investigating. However, though the TPB-based cognitive variables were measured before participants read the messages, statistical significance between NEQ and message processing variables cannot establish clear causal directions. Studies have shown an inconsistent association between engagement (i.e., involvement or transportation) and identification. Several entertainment education scholars (e.g., Busselle & Bilandzic, 2008; de Graaf et al., 2012) have considered identification as a predictor of engagement, whereas other scholars have assumed the opposite (e.g., Slater & Rouner, 2002). Although identification and engagement are theoretically distinct concepts, it is possible that the concepts constitute two different aspects of engagement (i.e., engagement with the narrative and engagement with the character; see Moyer-Gusé, 2008). Although this is an important limitation of the present study that merits further investigation, the study is meaningful in that the findings suggest social-cognitive variables' influence on message processing.

Third, as hypothesized, the routes of message processing were moderated by participants' cultural identity and the condition of cultural exemplars. Cultural narrative evidence is expected to persuade those for whom the cultural referents used in the message have cultural meanings through their perceptions and processing of the messages. The TPB-EELM model tested in this study revealed differing associations in the various culture-and-message conditions. In particular, the mediating role of perceived NEQ was inconsistent across message and identity conditions. In the autonomy-control condition, for Asian participants, NEQ mediated the association among attitude, identification, engagement, and BI. However, for European American participants, PBC directly predicted NEQ, and, in turn, indirectly affected engagement marginally and BI significantly via NEQ. In the Chinese social-embeddedness condition, no significant mediation effect of NEQ was found for European American participants. For Chinese participants, however, both attitude and PBC directly predicted NEQ, and, in turn, indirectly affected engagement and BI via NEQ. The differing routes of message processing as well as the varying mediating roles of perceived NEQ suggest that in each culture-and-message condition, a unique mechanism might be involved in determining the associations among social-cognitive variables, NEQ, and message processing. It is encouraging to see different routes of message processing depending on the cultural exemplars and cultural identity, as these routes may be useful for future health campaigns employing cultural tailoring.

Lastly, the findings present the differing effects of each social-cognitive and message-related variable on BI across conditions. According to the results of this study, PBC may help target audience message processing and boost the effectiveness of agency-based cultural narrative evidence within the TPB-EELM model. This is because PBC positively and directly predicted participants' perceptions of NEQ as well as message processing (i.e., identification) when the agency-related exemplars in the cultural narrative evidence aligned with the participants' agentic orientation. In the autonomy-control condition, the path coefficient between PBC and NEQ was significant and positive for European American participants, while no PBC-related effect was found for Asian participants. In the Chinese social-embeddedness condition, both PBC and attitude directly predicted NEQ and, in turn, indirectly affected engagement and BI via NEQ for Chinese participants. No effect related to attitude and PBC was found for European American participants. In both the autonomy-control and Chinese social-embeddedness conditions, the path coefficients between PBC and NEQ were significantly higher when the target audience for the given cultural narrative evidence aligned with the participants' cultural identity. The findings suggest that both attitude and PBC need to be considered when it comes to individuals' health behaviors and message effects. In particular, PBC represents an extended perceived self-efficacy that includes the vital component of controllability (Ajzen, 2002). The results suggest that the agentic components in individuals' PBC interact with the types of cultural narrative evidence tailored to promote audience agency by affecting the target audience's perceptions and processing of cultural narrative evidence.

Limitations and Future Directions

Although this study provides interesting findings and implications, it is important to acknowledge its limitations. First, the sample used in this study was composed of college students, which may limit the generalizability of the findings. Second, there is the possibility of reverse causation between message-processing variables and NEQ. Further research employing longitudinal panel data is needed to clarify the causal order. Third, although attitude toward FHH communication was measured before message exposure in this study, previous studies have recognized attitude as an outcome of message processing and perceived

message quality (Slater & Rouner, 2002). Of course, the meanings of attitude in the previous literature are different from that of the present study emphasizing social-cognitive factors' influences on message effect. However, future persuasion research would benefit from evaluating attitude as an outcome variable and investigating how attitude as a social-cognitive variable influences attitude as a message outcome. Fourth, the audience's degree of acculturation and relocation experience may have affected their consumption of culturally tailored health messages. Future studies will need to take these factors into consideration in measuring the effect of these messages. Fifth, Bandura (2006) criticized a contentious dualism that is pervasive in the field of cultural psychology and appears in diverse forms such as autonomy vs. interdependence and individualism vs. collectivism. This study is no exception. Although the results of this study have interesting cultural implications, dualistic cultural narratives based on personal versus collective agency (or efficacy) are limited in their applications. Future studies should investigate more detailed applications of both SCT and TPB by considering individual differences in social-cognitive variables among various audiences as well as by designing and testing agency-based cultural evidence. Lastly, although the results of both the autonomy-control message and Chinese social-embedded message shed significant light on the processing and effects of cultural narrative evidence, the results of the Korean social-embeddedness message showed no significant effect. This result may be further explained by the fact that manipulation checks found culture-message alignment to have no desired effect in either the Korean or Chinese message condition. Future studies will need to clarify the reason for this failure and replicate this study with Korean participants to see whether the results are consistent with the findings for the two other message conditions.

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