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The relative persuasiveness of narrative versus non-narrative health messages in public health emergency communication: Evidence from a field experiment

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ABSTRACT

Previous studies indicated that narrative health messages are more effective than non-narrative messages in influencing health outcomes. However, this body of evidence does not account for differences in health domain, and little is known about the effectiveness of this message execution strategy during public health emergencies. In this study, we examined the relative effectiveness of the two formats in influencing knowledge and perceived response efficacy related to prevention of pandemic influenza, and determined whether effects of message format vary across population sub-groups. Data for the study come from an experiment fielded in 2013 that involved a nationally representative sample of 627 American adults. Participants were randomly assigned to view either a narrative ($n = 322$) or a non-narrative ($n = 305$) video clip containing closely matched information about knowledge and preventive actions related to pandemic influenza, and completed pre- and post-viewing questions assessing knowledge and perceived response efficacy related to the prevention of pandemic influenza. Results indicated that participants in the non-narrative condition reported greater knowledge and rated pandemic influenza prevention measures as more effective compared with those in the narrative condition. Message format effects did not vary across population sub-groups; post-viewing scores of knowledge and perceptions related to pandemic influenza were consistently higher in the non-narrative condition compared with the narrative condition across five socio-demographic groups: age, gender, education, race/ethnicity and income. We concluded that didactic, non-narrative messages may be more effective than narrative messages to influence knowledge and perceptions during public health emergencies.

1. Introduction

Public health communication is one of the more important tools of achieving public health objectives by influencing health behaviors related to both communicable and non-communicable diseases (Bernhardt, 2004; Maibach and Parrott, 1995). The effectiveness of a given public health communication program heavily relies on designing the right health messages in the right formats that resonate with the target audience (Bekalu and Eggermont, 2014; Keller and Lehmann, 2008). Designing effective messages has long been the subject of much research and theorizing in public health communication.

A variety of message formats have been investigated for their effectiveness on different health outcomes (Viswanath and Emmons, 2006). Among the formats, research suggests that compared with the more traditional didactic or factual message format, a narrative format might be more persuasive (Murphy et al., 2015; Hinyard and Kreuter,

2007; Kreuter et al., 2010). While there is no single definition of narrative universally accepted by researchers, drawing on themes and concepts that are recurrently used by researchers to describe the term, Kreuter and colleagues define narrative communication as “a representation of connected events and characters that has an identifiable structure, is bounded in space and time, and contains implicit or explicit messages about the topic being addressed” (Kreuter et al., 2007:222). Put simply, “a message may be called a narrative if it is a story that contains information about setting, characters, and their motivations” (Braddock and Dillard, 2016:1). Narrative communication can take different forms: entertainment-education, journalism, literature, testimonials, and story-telling (Kreuter et al., 2007). Specifically, in the context of public health communication, researchers have identified five major forms of narratives: “official stories constructed to tell an innocuous version of events or the position of a group, *invented stories* that are made up or fictional, *firsthand experiential stories*,

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secondhand stories of others that we retell, and *culturally common stories* that are generalized and pervasive in a cultural environment” (Hinyard and Kreuter, 2007). The theoretical rationale behind the use of one or the other forms of narrative communication can be summarized in terms of four widely cited notions: transportation, identification, parasocial interaction and emotion (Moyer-Gusé, 2008; Moyer-Gusé and Nabi, 2010; Murphy et al., 2013).

It is reasoned that compared to individuals exposed to messages in a non-narrative format, those exposed to messages in a narrative format would be drawn into the story and/or transported from the real-world into the narrative world, and to the extent they do so, they are likely to show effects of the story on their real-world beliefs (Green and Brock, 2000; Murphy et al., 2013). It is also argued that audiences exposed to narratives might identify with story characters, through perceived similarity and wishful identification, and that enhances messages' personal relevance and help overcome perceptions of invulnerability (Frank et al., 2015; Murphy et al., 2013). Drawing on Horton and Wohl's (1956) notion of parasocial interaction, research on narrative persuasion has also shown that individuals exposed to narratives may engage in a “seeming face-to-face relationship” with story characters that leads to the creation of a unidirectional viewer-character bond which in turn might reduce reactance to message and enhance persuasive effects (Moyer-Gusé, 2008; Moyer-Gusé and Nabi, 2010). Narratives are also theorized to work through emotion (Murphy et al., 2013). Compared with non-narrative messages, narrative messages have the potential to evoke different emotions; and messages that elicit emotional responses are more likely to engender interpersonal conversations through the activation of interpersonal networks that improve message recall (McQueen et al., 2011; Myrick, 2015; Ramanadhan et al., 2017).

The argument for the use of narratives holds that due to *transportation, identification with characters, parasocial interaction and activation of emotions*, messages in a narrative format can result in positive health outcomes as they may reduce resistance and facilitate processing of new and/or difficult information (Murphy et al., 2013). A considerable body of research in health communication has provided empirical support for these propositions in promoting cancer-related outcomes such as HPV vaccine utilization and undergoing cervical and skin cancer screening (Moran et al., 2013; Lemal and Van den Bulck, 2010; Borrayo et al., 2016; Stavrositu and Kim, 2014; Murphy et al., 2015; Frank et al., 2015).

Research also suggests that the relative persuasiveness of narrative and non-narrative formats depends on different factors related to the targeted audience and the specific health behavior being promoted. For example, a study among college students found that in processing alcohol education messages, individuals rated statistical evidence, a form of non-narrative message, as more persuasive when the message was congruent with their values, but narrative evidence as more persuasive when the message was not congruent (counter-attitudinal) with their values (Slater and Rouner, 1996). Additionally, a recent meta-analysis found that statistical evidence had a stronger influence than narrative evidence on beliefs and attitudes, whereas narrative evidence had a stronger influence on intention, suggesting the importance of the match between the specific characteristics of the two formats of message and those of the outcome (Zebregs et al., 2014).

The available theoretical and empirical literature on the relative effectiveness of the two formats suggests the need for further research. Researchers (Kreuter et al., 2007; Green, 2006) have noted that narratives may be particularly useful for conveying cancer information in that such formats reduce counterarguments and thereby help individuals overcome barriers to screening and treatment seeking. It has been argued that narratives should enhance persuasive effects and suppress counterarguing (through transportation and identification) if the implicit persuasive content is counterattitudinal (Slater and Rouner, 2002). However, existing evidence on narrative persuasion does not account for differences in health domain, and whether the relative

persuasiveness of this format of communication holds in health domains such as public health emergencies is largely unknown. During public health emergencies, public health professionals seek to encourage the public to engage in preventive behaviors against some imminent threats. In such a context, individuals are less likely to have the time to engage in the kind of message processing that subtler formats such as narratives require. Additionally, messages in emergency contexts promote the adoption of prevention behaviors as opposed to messages that promote the adoption of detection behaviors such as cancer screening. Because prevention behaviors might generally be expected to be less counterattitudinal than detection behaviors, whether narrative or non-narrative formats become more persuasive during emergency preparedness contexts becomes an empirical question.

In this study, we sought to address this question. We examined the relative persuasiveness of narrative and non-narrative message formats in the context of public health emergency communication. During public health emergencies, public health professionals engage in a variety of communication efforts to inform the public, encourage the adoption of preventive actions and thereby limit the impact of adverse events (Savoia et al., 2013). However, despite the centrality of effective communications during a public health crisis, little is known about the most effective message tactics in general and the relative merits of the widely studied narrative versus non-narrative messages in particular (Savoia et al., 2013). In this study, our focus has been on testing the relative persuasiveness of the two formats in changing knowledge and perceived response efficacy related to prevention of pandemic influenza, a rare but recurrent public health problem (WHO, 2005). Because the primary goal of information campaigns during public health emergencies is to raise public awareness about an immediate threat and to recommend a set of preventive measures for the public to adopt, our focus has been on cognitive (knowledge and perceptions) outcomes. Moreover, within the framework of communication inequalities and health disparities (Viswanath et al., 2007), research has shown that there are consistent associations between socio-demographic factors and public health emergency communication and preparedness outcomes (Savoia et al., 2013). For example, a systematic review by Savoia et al. (2013) found that men, young adults, and people from minority and low socioeconomic groups tend to fail to follow recommended preventive measures during public health emergency. We therefore sought to examine if effects of message format vary across audiences of different socio-demographic groups – age, gender, race/ethnicity, education and income.

2. Methods

2.1. Materials

To empirically test whether a narrative or non-narrative message format is more effective in changing knowledge and perceived response efficacy related to prevention of pandemic influenza, we produced two 4-min video clips from a reputable publicly available source, the *American Red Cross YouTube channel*, and the movie *Contagion*. First, we identified three informational H1N1 Virus (2009) videos from the Red Cross; each presented facts about pandemic influenza in a question-and-answer format and had a well-defined objective: *learn the facts about H1N1 influenza, learn how the influenza virus spreads, and learn flu prevention strategies*. The three Red Cross videos were reviewed for themes and edited to create a 4-min clip. The Red Cross themes were then matched to scenes in the movie *Contagion* by two coders, who created an exhaustive list of scenes which, through spoken (e.g., a conversation between two characters) or visual (e.g., a visual compilation of scenes) depictions, corresponded with the facts presented in the Red Cross clip. Next, the retained *Contagion* clips were edited for sequence to create a coherent narrative. The final edited *Contagion* cut began with the first moment of transmission of the pandemic influenza virus from animal to human, and proceeded chronologically to illustrate the impact of the

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