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## The Ebola Epidemic: Implications of Risk Communication Practices of the World Health Organization

Lindsey Jamplis

Pepperdine University, Los Angeles, USA

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### Abstract

*In risk management, public perceptions of health risks are a critical factor that health organizations must consider when developing communication messages, strategies and practices. When developing risk communication messages and strategies, the World Health Organization faces challenges in creating messages that can be easily understood by the public. Existing scholarship demonstrates how the public's risk perception is influenced by several factors including calculation, probability, assessment and sense making. The various ways that the public infers the meaning of risk and whether or not it poses an immediate threat will influence their behavior taken to avoid that risk. In addition to risk perception, the theoretical framework of risk communication practices provide insight into how organizations like the World Health Organization should address the public when crafting messages and strategies. The goal of the present paper is to provide a relevant literature review on risk management and risk communication practices that the World Health Organization can utilize in order to address and influence public perception of risk regarding the Ebola virus. According to a recent publication released to the public regarding the potential Ebola therapies and vaccines, one goal of the World Health Organization in risk management is to influence attitude and behavior change. To address this goal, the present research proposal will apply the theoretical framework of the Extended Parallel Process Model (EPPM) to examine the public's perceived risk of Ebola in order to determine what type of communication messages and strategies the World Health Organization should employ to inform the public and create behavior change to prevent exposure to contracting Ebola. EPPM looks at promoting behavior change based on the beliefs, emotions and perceived barriers of the at risk population. EPPM is a useful framework when designing campaign messages since it promotes behavior change and focuses on perceived threats that motivate action, as well as perceived self-efficacy in determining the nature of behavior. When communicating about the potential health risks of Ebola that the public is facing, risk messages and strategies should directly target the public's fear (susceptibility and severity) and efficacy (self and response) beliefs. The present study has conducted a survey and analyzed the data of the public's perceived risk of Ebola related to EPPM variables of the public's fear and efficacy beliefs towards contracting the Ebola virus.*

Keywords: The Ebola Epidemic, Risk Communication Practices, World Health Organization

## 1. Introduction:

The recent Ebola outbreak has manifested a global health emergency that has stimulated the public's fears and concerns regarding the potential health risks of contracting the fatal virus. Risk communication surrounding the Ebola Outbreak has the potential to heighten or diminish the public's understanding and assessment of the severity of the Ebola virus. According to the World Health Organization website, the 2014 Ebola virus epidemic has been the largest and most complex outbreak since it was first discovered in 1976, totaling an estimated 7,000 deaths just this year. Although the Ebola virus has mostly affected those living in West Africa, the risk and threat of Ebola to the United States population is very low, with only one recorded death.

When addressing the risks facing the public, the methods employed by health organizations have a profound impact on the thoughts, behavior and actions taken by the public to avoid a particular health risk. According to the World Health Organization, informing the public by raising awareness for the risk factors of Ebola are critical to the prevention and control of the Ebola virus among any population. As a global organization, they aim to develop messages and communication strategies that inform the public about potential health risks by providing specific interventions and measures for the treatment or prevention of Ebola. Risk reduction messages focus on reducing the risks of wildlife to human transmission, human-to-human transmission and outbreak containment. In order for the World Health Organization to change public opinion and create behavior change, developing communication messages that address the EPPM variables are of critical concern. Communication strategies that change the public's beliefs and emotions are powerful tools that enable health organizations to create behavior change among the public in order to avoid the potentially deadly health risks of contracting the Ebola virus.

Healthcare organizations face numerous challenges when communicating potential health risks to the public. In addressing the communication practices of health organizations dealing with risk management, the present research paper aims to fill the gap in existing literature in order to address the importance of effective risk communication. When organizations are faced with the challenge of developing messages and strategies to inform the public of health risks, the theoretical framework of risk communication is a useful tool in determining risk management strategies of prevention and control.

There are several risk management concepts that can inform the current dilemma facing the World Health Organization in developing risk messages and campaigns to the public regarding the recent outbreak of Ebola. First, several concepts are related to risk perception, including calculation, probability, assessment and sense making. Risk theory regarding communication practices that consider experiential VS. analytical processes and the role of narrative in designing risk campaign messages utilizing the Extended Parallel Process Model are useful frameworks in which the World Health Organization can employ in order to inform the public of the risks associated with Ebola.

## 2. Literature Review:

A vast amount of research has been done about public perceptions of risk and crisis communication in the health care industry. According to Ropeik & Gray (2002), the public calculates risk based on the expected probability of being exposed to a hazard that has potentially negative consequences. Public fears and concerns regarding the potential health risks of Ebola are based on information gathered from various sources and then filtered through personal risk perceptions. Risk is assessed through the analytic system, which relies on logic and evidence

whereas the experiential system relies on images and narratives (Slovic, Finucane, Peters & McGregor (2004). The public judges their exposure to the risks of Ebola based on the probability or relative frequency of exposure.

Risk Assessment is the scientific process of defining the various components of risk (Renn, 1998). Renn (1998) focuses on how the public makes sense of risk messages about health related risks. Sense making is driven by perception of risk, and the public often responds by fight, flight, playing dead, or experimentation with potential health risks. Renn (1998) discusses how the public mentally sorts the various factors associated with risk based on immediacy, fate, personal efficacy, chance, and danger perception.

Another avenue of research that sheds light on the current dilemma facing the World Health Organization in developing communication messages regarding the risks of Ebola speaks to the nature of effective communication about health risks. According to Kasperson et al., (1988), communication processes influence how people amplify or attenuate risk from media coverage or interpersonal transmissions of information. Channels that convey messages regarding risk include news media, social media, interest groups and word of mouth. Risk perception is influenced by the social amplification of risk narratives through media and interpersonal channels (Kasperson et al., 1988 and Dunlop, Wakefield & Kashima, 2008).

Social systems amplify or attenuate the public to certain risks, causing them to make sense of the interaction between scientific technical knowledge and social, cultural, and individual factors in risk communication (Kasperson et al., 1988). Narratives about risk in society are created, distributed, and amplified through media and interpersonal channels (Kasperson et al., 1988). According to Finucane (2005), narrative is a theoretical framework that is helpful for understanding the different values that people bring to risk debates, and how these values influence and are integrated when making decisions about how to manage a risk. As described in the literature review, the use of narrative is a powerful and persuasive medium in which to appeal directly to the needs and emotions the audience.

Dunlop, Wakefield, and Kashima (2008) argue that the media has the power to amplify the risk. In examining the role of emotion in evocative narratives in effective media health campaigns, Dunlop, Wakefield, and Kashima (2008) found that television ads have the power of the to spread awareness about certain health risks. In addition, emotionally evocative media narratives about risk stimulate interpersonal discussions, which are more influential than mass media communications on behavior and attitude change. The authors concluded that individuals need emotional connection to feel personal risk, and that emotionally evocative media narratives will produce the desired attitude and behavior change by impacting individuals directly and indirectly through interpersonal discussion.

According to Sellnow, Ulmer, Seeger & Littlefield (2009), the public will infer meanings from various sources of information regarding the Ebola virus by assessing the importance, accuracy and authenticity of the information and source. McComas (2006) claims that the media often fails to include relevant, important or helpful information when informing the public about potential health risks. The public needs accurate and easily understandable information about health risks in order to make decisions that guide their behavior to avoid exposure to risk. In order to improve risk communication, McComas (2006) proposes that organizations developing health risk messages to the public should use the mental model method, a technique that uses interviews with experts and target audience to determine how experts understand risk differently than the public. The public makes sense of health risks of Ebola based on their existing beliefs, integrating old and new information when assessing the information provided by the news media. In developing risk messages, the World Health Organization should utilize the mental models

method in order to ensure the public will make informed decisions, changing their thoughts and behavior to avoid contracting Ebola.

Existing literature on experiential vs. analytical processes reveal the importance of communication differences among expert and lay persons perception of risk (Renn, 1998; Slovic, Peters, Finucane, & McGregor, 2004). According to Renn (1998), risk takes on different meanings for the public than it does for scientists, arguing that “Whereas in the technical sciences the term risk denotes the probability of the effect multiplied by the magnitude of the effect...the everyday use of risk has different connotations”(p. 59). In addition, cultural beliefs and values, religious convictions, and perceptions of reality are relevant contributing factors to the publics’ perception and response to risk. Since laypersons assess risk based on their experiences, emotions and feelings, organizations should craft messages and develop strategies that address these psychological perceptions of risk attributed by the public (Slovic, Peters, Finucane, & McGregor, 2004). In order to prevent the public from the potential health risks associated with contracting the Ebola virus, persuasive risk messages should acknowledge the laypersons knowledge, attitudes, and behaviors instead of presenting statistical information.

Organizations crafting messages to the inform the public regarding the potential risks of the Ebola virus need to consider how risk perception is influenced by differences in expert versus lay persons communication practices. Experts calculate risk through cost/benefit analysis and communicate risk to the public through numerical data and statistics (Slovic, Peters, Finucane, & McGregor, 2004). Since laypersons perceive risk experientially, associating feelings and emotions to assess the potential relevance of risk, they are unlikely to connect to expert presentations of risk messages consisting of statistical data (Slovic, Peters, Finucane, & McGregor, 2004). Therefore, health organizations communicating the potential risks of Ebola to the public should utilize communication messages and strategies that align with experiential communication preferences of laypersons.

### **3. Extended Parallel Process Model:**

The role of the World Health Organization in risk management is to develop health communication messages that inform the public regarding the risks of Ebola so that they are able to make appropriate changes in their behavior to avoid contracting the virus. Scholars have looked at the Extended Parallel Process Model as a theoretical framework for predicting the outcomes of fear appeals and crafting effective risk messages accordingly (Cho & Witte, 2005; Botta, Dunker, Fenson-Hood, Maltarich & McDonald, 2008; and Prati, Pietrantonio & Zani, 2013). Cho and Witte (2005) outline EPPM, defining four key factors in a risk message, which include self-efficacy, response-efficacy, susceptibility, and severity. Depending on the levels of these factors and their interaction with one another, EPPM predicts certain outcomes such as danger control, fear control, and no response (Cho & Witte, 2005). Danger control outcomes result if the target audience takes the desired course of action because they perceive a threat and have high perceptions of efficacy, while fear control outcomes are responses of defensive avoidance due to high threat perception but low levels of efficacy.

Through the lens of EPPM, the World Health Organization could discern how to craft narratives regarding this risk of Ebola to fit the publics levels of threat perception and efficacy. Cho and Witte (2005) studied the perceptions about HIV/AIDS prevention by EPPM’s standards by surveying and interviewing 792 participants in Ethiopia, and conducting 20 focus groups to discuss attitudes about the disease. The authors concluded that the focus of risk messages communicated through preventative soap operas would need to reflect how viewers could manage fear and bridge the knowledge/attitude gap that would lead to positive behavioral change.

Botta et al.'s (2008) study on effective risk messages about hand washing revealed similar findings about the importance of severity and efficacy, but added that an important step is to determine the most relevant threat to the target audience. The “gross” factor of human waste on the hands when students neglect washing proved to be the most relevant threat that should be targeted when producing risk messages for this issue. Identifying the key factor enables health organizations to intentionally tailor risk communications to fit the problem facing the target audience.

Another study that directly ties EPPM with narrative of risk is Prati, Pietrantonio & Zani (2013). In this study, the authors examined the efficacy of risk messages that encouraged those 65 years and older to receive the influenza vaccine. This study combined the concepts of narrative as risk and threat and efficacy from EPPM and found that the narrative risk message heightened risk perceptions about influenza, efficacy of the vaccine, and self-efficacy regarding obtaining the vaccine. The authors concluded that narrative risk messages based on EPPM are more persuasive than didactic messages when it comes to influenza vaccination for the 65 and older population. This study provides support for the efficacy of narrative risk communication over didactic communication in healthcare.

Existing scholarship that has applied the Extended Parallel Process Model as a theoretical framework demonstrates the importance of crafting effective risk messages based on the public's fear and efficacy (Cho & Witte, 2005; Botta et al., 2008; and Prati, Pietrantonio & Zani, 2013). In order for a prevention program to be effective, it needs to promote behavior change based on the at-risk population's beliefs, emotions and perceived barriers. Based on the findings of previous scholarship, the present paper suggests that the World Health Organization design campaign messages that take into consideration the dimensions of the EPPM in order to promote long-term attitude and behavior change.

#### **4. Findings:**

In order to determine the appropriate intervention for strategy for the World Health Organization Ebola campaign message design, the current proposal has examined survey data related to EPPM variables of the public's fear and efficacy beliefs towards contracting the Ebola virus. Following the model of the EPPM, the survey used in the present research proposal asked participants to respond to questions regarding their level of fear and efficacy. The scales measuring the EPPM variables are found in Witte, Meyer & Martel (2001). The EPPM variables of susceptibility, severity, response efficacy and self-efficacy were measured using a 5-point Likert scale. Participants indicated the degree to which they chose to agree or disagree with statements regarding their level of fear (susceptibility and severity) and efficacy (self and response).

To determine the public's beliefs and emotions toward the risks associated with Ebola virus, the present paper examined the mean score for the public's perceived susceptibility, severity, response efficacy and self-efficacy. Responses to perceived susceptibility (disagree at 1.8) indicate that they felt low at risk when asked to respond to the statement “I am at risk for contracting Ebola”. The public's responses to perceived severity (agree at 3.98) indicate that they felt at risk when asked to respond to the statement “Contracting the Ebola virus is a serious and deadly threat”. When asked to respond to the statement “Avoiding contact with others who have Ebola prevents the potential risk of contracting the Ebola virus”, students' responses to perceived response efficacy statements (strongly agree at 4.33) indicated that limiting their interaction with others to prevent the potential risk of contracting the Ebola virus. Responses to the statement “I

am able to limit my exposure to Ebola to prevent contracting the virus.” (agree at 3.93) indicating that they believed they are capable of limiting their exposure to avoid potential health risks.

Based on the survey results, the present paper suggests that Ebola risk campaign messages communicated to the public by the World Health Organization should be based on the public’s beliefs regarding their low risk to susceptibility, high levels attributed to severity and strong beliefs of efficacy. In order to promote behavior change among the at-risk population, risk messages need to target the publics’ beliefs, emotions and perceived barriers associated with the Ebola virus. Careful consideration regarding the dimensions of the EPPM will promote long-term attitude and behavior change among the target audience.

In addition to developing messages based on the publics levels of fear and efficacy using the theoretical framework of EPPM, understanding what sources of information the public uses to understand the potential risks of the Ebola virus will benefit the World Health Organization. The survey revealed that the public receives the majority (73.33%) of information about Ebola through various news sources as well as conversations with friends and family (33.33%). These results demonstrate the power of social systems to attenuate or amplify the publics risk perceptions of Ebola (Kasperson et al., 1988).

Messages that are communicated through media channels have the potential to influence interpersonal transmissions of information. Incorporating personal narratives in media health campaigns will help spread awareness of the potential health risks associated with contracting Ebola (Dunlop, Wakefield & Kashima, 2008). Furthermore, emotional evocative narratives will stimulate interpersonal discussions between family and friends, amplifying the risks posed to the public. Emotionally evocative narratives in interpersonal communication will cause the public to feel an emotional connection to risk and produce the desired attitude and behavior changes that the WHO aims to accomplish.

## **5. Conclusion:**

Risk communication surrounding the Ebola Outbreak is an influential factor in determining the public’s behavior toward avoiding risk. Communication messages influence the publics understanding and assessment of the severity of the Ebola virus and have the potential to stimulate or reduce risk perception. In designing risk campaign messages and strategies, the World Health Organization should utilize the theoretical framework of the Extended Parallel Process Model in order to create behavior change among the public. The survey revealed the public views Ebola as a serious health threat but feel that they are at low risk to contracting it. The public has strong efficacy beliefs, meaning they are confident in their ability to avoid and limit exposure to the Ebola virus.

In order to manage the public’s low perception of risk and strong efficacy beliefs, risk communication messages and strategies should enhance existing efficacy beliefs. Risk statements that confirm the severity of the risks of Ebola will confirm existing beliefs and lead the public to avoid and or limit exposure to the virus. Based on the survey results, if the World Health Organization utilizes the EPPM model, the organization will create behavior change through the use of tailored risk communication messages and strategies.

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