

Promoting Health for All Kansans Through Mass Media: Lessons Learned From a Pilot Assessment of Student Ebola Perceptions

Amy K. Chesser, PhD; Nikki Keene Woods, PhD, MPH; Jennifer Mattar; Timothy Craig, PhD

ABSTRACT

Objective: We aimed to assess student knowledge of Ebola virus disease (EVD) and opinions about media coverage of EVD.

Methods: We conducted a pilot study with a cross-sectional survey and a convenience sample.

Results: Sixty-five college students participated in the survey and reported a low level of basic knowledge of EVD, high health literacy levels, and Internet and health professionals as sources for health information.

Conclusion: This pilot study was an important first step to understanding students' knowledge of Ebola, common sources of health information, and health literacy levels. Results from this study highlight the need to improve health communication training and further evaluate the quality of health information dissemination via all communication sources. (*Disaster Med Public Health Preparedness*. 2016;10:641-643)

Key Words: Ebola, health literacy, risk communication, public health

Recent research has emphasized the importance of public health preparedness, clear communication, and lessons learned in public health as a part of the Ebola virus disease (EVD) outbreak.¹⁻³ As with all disaster management, the communication of clear, accurate, and credible information is imperative.⁴ Increased coverage of EVD, also known as Ebola hemorrhagic fever, in the past 5 years has made public health messaging and communication strategies increasingly important.^{5,6}

However, no previous studies have focused on the examination of general knowledge of EVD, or media coverage and issues regarding media utilization, in relation to public health disaster management and communication. This brief report includes findings from a pilot study about the perceptions, opinions, and knowledge of college students about EVD, media, and health literacy.

METHODS

Study Design

This was a multisite pilot study using a test survey. The survey was distributed to a convenience sample of college students enrolled in communication and health profession programs at 2 locations by using online Qualtrics data collection software (Qualtrics, Seattle, WA). Survey questions assessed student perceptions, opinions, and knowledge of general

information about EVD, current public health issues, student media use and information sources, media coverage of EVD, US policy regarding EVD, and health literacy. Health literacy was included because the capacity to obtain, process, and understand basic health information is an important skill for all professionals. Demographic questions to describe the population characteristics of respondents (ie, gender, age, family income) were included. This study was approved by 2 university institutional review boards.

Measures

The outcomes of interest for this study were EVD knowledge, health literacy, and media usage. EVD knowledge was assessed by using information from the World Health Organization and the Centers for Disease Control and Prevention by 6 questions: (1) What is the number one public health issue in the world today (multiple choice)?, (2) What is the number one public health issue in the United States today (multiple choice)?, (3) There is a cure for EVD (T/F), (4) Signs and symptoms for EVD (check all that apply), (5) Who is most at risk for contracting EVD (fill in the blank), and (6) In the last year, estimate how many people have died from Ebola in Africa (fill in the blank). Health literacy was screened by using a tool developed by Chew et al^{7,8} consisting of 3 health literacy questions. Specifically, the health

literacy assessment included 3 questions with responses recorded with a 5-point Likert scale.

Media utilization and response to EVD through the media were assessed by 11 questions including how you usually get information about health issues, such as a specific disease (multiple choice); how much information about a health issue do you get from “X” (ie, newspapers, social media, friends and family) (5-point Likert-type scale); in everyday life, how often do you usually use e-mail (5-point Likert-type scale); where have you been hearing information about Ebola the most (multiple choice); I am sick and tired of hearing about Ebola (5-point Likert-type scale).

Data Analysis

All data were analyzed by using SPSS Statistics version 19 (IBM Corp, Armonk, NY). Chi-square tests were used to evaluate the significance of bivariate associations for each demographic and health status variable with health literacy. Health literacy levels were calculated on the basis of summed responses of the 3 questions and categorized as low, adequate, and high health literacy. Health literacy levels were classified as low health literacy (scores 3-8), moderate health literacy (scores 9-14), and high health literacy (score = 15).

RESULTS

Sixty-five (N = 65) students completed the survey. The majority of respondents were female (77%, n = 49) and aged 18 to 24 years (52%, n = 34). The highest percentage of respondents reported parental income between \$20,000 and \$59,999 (44%) and reported educational status as 4th year (32%, n = 21) and 3rd year (31%, n = 20) undergraduates (Table 1).

TABLE 1

Participant Characteristics	
	No. (%)
Sex (n = 64)	
Male	15 (23)
Female	49 (77)
Age (n = 65)	
18–24 years	34 (52)
25–34 years	18 (28)
35–64 years	13 (20)
Parents/caregivers annual income range (n = 63)	
<\$20,000	4 (6)
\$20,000–59,999	28 (44)
\$60,000–\$89,999	11 (18)
≥ \$90,000	20 (32)
Year in college (n = 65)	
Year 1	2 (3)
Year 2	4 (6)
Year 3	20 (31)
Year 4	21 (32)
Graduate school	18 (28)

EVD Knowledge

Sixty-nine percent (69%, n = 42) of the participants reported there was no cure for EVD. No student responses were 100% accurate for signs/symptoms of EVD. The majority of respondents (51%, n = 34) accurately reported the most important public health issue in the world (malnutrition and hunger). The majority of respondents (63%, n = 42) accurately reported the most important health issue in the United States (cardiovascular diseases). The majority of respondents listed travelers, health care workers, and people with direct exposure to someone with EVD as mostly likely to contract the disease. The response range for estimated number of EVD deaths in Africa in 2014 was 2-400,000. Only (26%, n = 16) of participants were confident in knowing what to do to protect themselves from Ebola.

Health Literacy

The majority of participants’ self-reported health literacy rates were moderate (79%, n = 50), with 20% reporting low health literacy (21%, n = 13). No respondents scored high for health literacy.

Media Utilization

Results (listed in nonranking order) indicated the top 3 sources of health information were (1) Internet, (2) health professionals, and (3) family and friends (Table 2). Respondents indicated that their 3 most accessed sources for Ebola information were (1) radio and television (37%, n = 25), (2) Internet (25%, n = 17), and (3) social media (24%, n = 16). The majority (75%, n = 50) of respondents used e-mail as a part of their daily life.

DISCUSSION

Participants had higher incomes and educational levels and self-reported higher health literacy rates than national averages. Lack of knowledge among participants points to a lack of accurate public health knowledge in social media about recent public health issues. While only 4 people were

TABLE 2

Health Information Sources			
	Average	Standard Deviation	N
Internet	4.45	0.72	67
Taking to health care professionals	3.20	1.69	66
Family members, friends, or co-workers	3.18	1.16	65
Radio and television	2.92	1.32	63
Social media	2.90	1.62	58
Books or brochures	2.79	1.39	62
Newspapers	2.26	1.36	53

diagnosed with EVD during the 2014 outbreak in the United States, EVD remains an international public health concern.

Many media outlets and public health agencies communicated all of the symptoms for EVD with complete accuracy. However, there is a continued need to supply a consistent message and accurate knowledge, especially in the domain of social media. Participants were health and health communication majors. Yet, their overall basic knowledge of public health issues and EVD was less than expected. Health professionals must have appropriate education about EVD to abate misinformation and prevent creating undue fear during a time of crisis. As the public seeks information from media, the accuracy of the information may increase fear.^{9,10} Travel, border control, and immigration may be contributing factors and raise concern for the entire population.¹¹ Public fear and panic are often associated with disasters and public health crises such as a global Ebola outbreak. As demonstrated in a recent study, attendance in Dallas schools dropped 10% and sales of hand sanitizer, surgical masks, and other biohazard gear spiked online during the threat of an outbreak in the state of Texas.¹²

The results from this study indicate that students access a variety of mediums for information, dependent on the perceived immediacy of need. However, as noted in several studies, social media and accuracy of source information must be a prioritized public health concern.⁶ Previous studies demonstrated Twitter as an example of the degradation of accuracy of information over time when transmitted from person to person. Original source tweets were accurate and logical, expressing facts about how one must be in direct contact with bodily fluids to contract the disease. Retweeted posts were often inaccurate, centering on rumors and horror stories concerning the disease.¹³ Jeffrey Kluger's *Fear Factor* explains how public health officials had to combat the rumors and refute the claim that Ebola spread to Iowa.¹² One method to ensure appropriate responses for the general public is to arm public health and communication professionals with basic knowledge of EVD and skills to communicate accurate messages during a time of crisis. The next challenge is to engage these professionals on social media in a systematic and effective approach.

Limitations

The results from this study should be viewed within the context of the limitations. First, this was a pilot study with a test-survey instrument. Future studies must expand to additional relevant disciplines and increase the sample size. The survey was distributed by use of only one modality (online Qualtrics software) and therefore the respondents were limited to those with computer access. Finally, only the health literacy screening questions included on the survey have been validated and established as reliable within the literature.

CONCLUSION

This pilot study was an important first step to understanding students' knowledge of Ebola, common sources of health information, and health literacy levels. Results from this study highlight the need to improve health communication training and further evaluate the quality of health information dissemination via all communication sources.

About the Authors

Departments of Public Health Sciences (Drs Chesser and Keene Woods) and Biomedical Engineering (Ms Mattar), Wichita State University, Wichita, Kansas, and the Department of Behavioral Sciences, Warner University, Lake Wales, Florida (Dr Craig).

Correspondence and reprint requests to Dr Amy Chesser, Department of Public Health Sciences, College of Health Professions, Wichita State University, Wichita, KS 67260-9700 (e-mail: amy.chesser@wichita.edu).

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