Major article

What does the public know about Ebola? The public’s risk perceptions regarding the current Ebola outbreak in an as-yet unaffected country

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Ebola epidemic
Knowledge and risk perceptions
Health care and nonhealth care workers
Uncertainty trust and irrationality
Citizen science and mental models

Background: The unexpected developments surrounding the Ebola virus in the United States provide yet another warning that we need to establish communication preparedness. This study examines what the Israeli public knew about Ebola after the initial stages of the outbreak in a country to which Ebola has not spread and assesses the association between knowledge versus worries and concerns about contracting Ebola.

Methods: Online survey using Google Docs (Google, Mountain View, CA) of Israeli health care professionals and the general public (N = 327).

Results: The Israeli public has knowledge about Ebola (mean ± SD, 4.18 ± 0.83), despite the fact that the disease has not spread to Israel. No statistically significant difference was found between health care workers versus nonhealth care workers in the knowledge score. Additionally, no statistically significant association was found between knowledge and worry levels. The survey indicated that Israelis expect information about Ebola from the health ministry, including topics of uncertainty. More than half of the participants thought the information provided by the health ministry on Ebola and Ebola prevention was insufficient (50.5% and 56.4%, respectively), and almost half (45.2% and 41.1%, respectively) were unsure if the information was sufficient.

Conclusion: The greatest challenges that the organizations face is not only to convey knowledge, but also to find ways to convey comprehensive information that reflects uncertainty and empowers the public to make fact-based decisions about health.

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Ebola communication chaos

The unexpected developments surrounding the Ebola virus in the United States provide yet another warning that we need to establish communication preparedness, according to an editorial in the Journal of Health Communication.1 Ratzan and Moritsugu discussed communication chaos regarding the Ebola crisis, including lack of understandable, reliable, and actionable information from network news, newspapers, and social media. The current Ebola crisis demonstrates that communication, which should be a central weapon against diseases,2 is still not central enough in the authorities’ arsenal.

Trust, empowerment, rationality, and uncertainty

Risk communication literature defines 4 components of an effective dialog with the public during epidemic crises: trust, empowerment, rationality, and uncertainty. Regarding trust, studies show that when the public feels it has no control over the situation, trust in government organizations becomes key in the public’s reception of the risk management approach.3
Media and scholars have criticized the Centers for Disease Control and Prevention (CDC) for projecting overconfidence with regard to Ebola generally, and specifically regarding US hospitals’ capacity to manage the disease.4,5

When 2 nurses in a Dallas hospital contracted the disease, critics cited the CDC’s assurance that “U.S. hospitals can safely manage patients with Ebola disease.” According to Rosenbaum,5 the CDC said the nurses probably contracted the disease because of a protocol breach. However, it turned out there was no protocol, which made things even worse.

Regarding empowerment, the literature refers to the authorities’ exercise of power. Optimally, they should empower the public to make decisions about risks for themselves. According to Ratzan and Moritsugu,1 in the Ebola crisis, the public remained afraid and confused, mainly because of multiple spokespeople, incoherent information, and an overly general message that did not address subpopulations.

Regarding rationality, governments and organizations have often explained the public’s failure to follow certain recommendations as irrational. Current studies show that individuals make decisions not because they are irrational but because they evaluate risk according to its relevance to their lives.7,8 The public’s behavior in a crisis is driven by sometimes contradictory motives: rationality versus emotionality7 and seeking official sources of security versus thinking independently.

Regarding uncertainty, unpredictability and lack of control characterize uncertain situations of communicating risk to the public during crises. Uncertainty is characterized by unpredictability and lack of control regarding uncertain situations of communicating risk to the public during crises. Maxim et al10 noted that laypeople raise more and different uncertainties than those communicated by researchers.

Sandman and Lanard emphasize the need to proclaim uncertainty: “When imperfect, tentative information is all you have, then imperfect, tentative information is what you must give people so they can decide how best to cope.”41 In a health crisis, the major communication challenge is providing timely information that explains how the public should protect itself.

In the current crisis, uncertainty concerns fundamental questions, such as how the Ebola virus is transmitted. This question is central when communicating about Ebola and is connected to the issue of precautionary measures. Leading health authorities (World Health Organization and CDC) and local health authorities convey the message that the virus spreads through direct contact with blood or other body fluids or with contaminated objects and materials, but is not airborne, and that infected people are not contagious until they develop symptoms.12–14 Alongside this official line, the media has highlighted Ebola researchers who claim that airborne transmission cannot be ruled out.15,16 Others warned that even if the virus is not presently airborne, it could become so.17

The Pentagon issued a requirement for a 21-day quarantine for all service members who had contact with Ebola patients.18 Despite criticism, for example a New England Journal of Medicine editorial claimed that it “is not scientifically based, is unfair and unwise,”19 the editorial was still published, making the messages confusing.

Citizen science, deficit model, and public knowledge

The deficit model20 attributes public skepticism to science and technology or hostility to a lack of understanding. It is associated with a division between experts who have the information and nonexperts who do not.

The second approach stems from the concept of citizen science and is more optimistic about the public’s knowledge. The term was used to describe expertise among those traditionally seen as ignorant laypeople.21

Citizen science does not view the public and experts in dichotomous terms—as those lacking knowledge versus those possessing it. As such, “…‘laypeople’ are not viewed as tabulae rasae, as disinterested or ‘innocent’ of the issues…but as the very embodiment of knowledge about the practical world.”22

Media’s role: relevance and severity

Today, various bodies of work pay critical attention to the media’s role in risk communication. The spread of Ebola from West Africa to Western countries has led to an increase in the health organizations’ alertness and media coverage throughout the world. The public’s ability to absorb information from the media and conduct a dialog depends on how the organizations address the public’s states of relevance and severity. The health belief model suggests that if the purpose is to prepare the public for a threat, people must believe that it is relevant to their world and that it is severe.23

OBJECTIVE

Therefore, the purpose of this study is to examine what the Israeli public knew about Ebola after the initial stages of the outbreak (mid-September to November 2, 2014) in a country to which Ebola has not spread. Our overall goal is to assess the association between knowledge about Ebola (spread, vaccine, treatment, and prevention) versus worries and concerns about contracting Ebola. In addition, we analyzed differences between health care workers and nonhealth care workers in their knowledge about Ebola versus worries and concerns about contracting Ebola. We also examined uncertainty in this context.

Theoretical framework

We examined the public’s knowledge in light of the 2 opposing approaches: the deficit model, which assumes that the public has less knowledge than health care workers, and citizen science, which does not view the public and the experts in dichotomous terms. The study uses the 2 approaches as a conceptual basis to examine the public’s knowledge. We examined whether the public’s and health care workers’ knowledge levels influence their worries and concerns.

Hypothesis

The current study has 2 hypotheses. The first is that no difference will be found between the health care workers and public with regard to knowledge levels about Ebola. The second hypothesis is that there is an association between knowledge level about Ebola and level of worries and concerns regarding contracting Ebola in Israel.

METHOD

Data collection

An online survey (N = 327) within a cross-sectional study was conducted to examine degree of knowledge about Ebola among the Israeli public. The data had to be collected quickly. Ongoing news about the disease could affect people’s attitudes and beliefs regarding Ebola; therefore, the survey was created and distributed via Google Doc online software (Google, Mountain View, CA) from mid-September to November 2, 2014. This platform enables creating interactive online questionnaires and distributes them via e-mails or social media outlets.
The survey was distributed in 3 central ways. First, it was distributed through snowball sampling, where the first wave of respondents distributed the questionnaire link to others, via e-mail and social media outlets, mainly Facebook. This enabled us to reach mostly laypeople, without medical or public health education. Second, it was distributed through the official Web site of an Israeli university, which also enabled us to reach students and people, most of whom are laypeople, to compare them to health care workers. By using both of these techniques, we were able to achieve a relatively large sample quickly. Finally, the questionnaire was distributed to health care professionals by sending the link through the University of Haifa School of Public Health mailing list to ensure that a sampling of health care professionals would take this survey along with a sampling of the general public.

**Questionnaire**

The questionnaire was based on a literature review dealing with the recent studies on Ebola. As we wrote in the questionnaire, no audience studies were conducted yet; therefore, our study was a pioneer in the field.

The main purpose of the questionnaire was to measure the knowledge of the general public and health care workers regarding Ebola. The questions were developed around these issues. The questionnaire related to the levels of knowledge and concern as main components in the literature regarding risk perception.

Regarding the level of knowledge, we included questions dealing with the definition of Ebola, its transmission routes, who can contract Ebola, is there any specific treatment or vaccine for Ebola, and the severity of Ebola. Regarding the level of concern, we included questions dealing with the risk of an Ebola outbreak in Israel and worry about contracting Ebola.

Another component we included was expectation from the Ministry of Health. We chose to examine to what extent do the public want to receive more information from the Ministry of Health on Ebola and to what extent do people feel that the Ministry of Health provided comprehensive information on the subject.

The questionnaire opened with an explanation about the survey and assured the confidentiality and anonymity of the respondents. The questionnaire examines knowledge about Ebola, extent of concerns or worries regarding Ebola, and what Israelis expect from the Israeli Ministry of Health regarding Ebola.

**Level of concern**

The study includes the 2 following dependent variables that measure the level of concerns/worries:

1. To what extent are you afraid of contracting Ebola?: a categorical variable with 3 levels (low, medium, and high).
2. To what extent are you afraid that Ebola will spread to Israel?: a categorical variable with 3 levels (low, where the risk is <50%; medium, where the risk is 50%; and high, where the risk is >50%).

**Independent variables consisted on different measures**

**Knowledge score**

The knowledge score was the sum of the score of 5 questions that includes information about the individual’s general knowledge about Ebola; if the respondent answered correctly, then the answer was counted in the score. The questions that assessed the knowledge level are the definition of Ebola, transmission route, who can be infected, if there is any treatment for the disease or prevention, and to what extent Ebola is a serious disease.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Demographic characteristics (N = 327)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>Value</td>
</tr>
<tr>
<td>Age, y</td>
<td>39.7 ± 14.02 (19-89)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>114 (35.6)</td>
</tr>
<tr>
<td>Female</td>
<td>206 (64.4)</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
</tr>
<tr>
<td>Health care worker</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>70 (21.8)</td>
</tr>
<tr>
<td>No</td>
<td>250 (78.1)</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>&lt;High school</td>
<td>29 (9.0)</td>
</tr>
<tr>
<td>&gt;High school</td>
<td>43 (13.4)</td>
</tr>
<tr>
<td>Academic degree</td>
<td>250 (77.7)</td>
</tr>
<tr>
<td>Missing</td>
<td>5</td>
</tr>
</tbody>
</table>

NOTE. Values are mean ± SD (range), n (%), or n.

**Expectations from the Israeli Ministry of Health**

This variable includes 5 questions that assess Israelis’ expectations from the Ministry of Health. These questions included information on interest in receiving information from the Ministry of Health, and if so, what kind; and if the Ministry of Health has provided sufficient information about Ebola, treatment, and prevention.

**Demographic characteristics**

Demographic characteristics included age, sex, profession (health care worker or nonhealth care worker), and education.

**Analysis**

First, participants’ characteristics were summarized using frequencies, means, and SDs. Second, we compared the differences of series of bivariate analyses (ie, χ² test for categorical variables, t test for continuous variables) to determine the difference between health care workers versus nonhealth care workers in knowledge level about Ebola.

Finally, we used ordinal logistic regression to assess the association between knowledge level about Ebola and our dependent variables while considering differences in demographic characteristics. We presented the adjusted odds ratio (AOR), with 95% confidence interval (CI). All the statistical analyses were conducted using SAS version 9.3 software (SAS Institute, Cary, NC). Two-sided P values <.05 were considered statistically significant.

**Ethics committee approval**

This research has been approved by the University of Haifa Faculty of Social Welfare and Health Sciences Ethics Committee for Human Research (approval no. 259/14).

**RESULTS**

The study garnered 327 responses. The average age of participants was 39.7 years; the youngest participant was 19 years, and the oldest was 89 years. More than half of the respondents were women (64.4%), and most had academic degrees (77.7%) and were nonhealth care workers (78.1%) (Table 1).

The mean of the knowledge score ± SD was 4.18 ± 0.83. The range of the score was 2-5. This indicates that every respondent had at least 2 out of 5 correct answers. The study shows that Israelis were knowledgeable about Ebola during the period in question.
Almost all of the participants knew that Ebola is an infection transmitted from person to person (94%), more than half of the participants (52.4%) reported that it is transmitted through body fluids, and 25.4% incorrectly reported that it is transmitted via air. Of the participants, 10.2% reported that there is uncertainty regarding transmission route. Of the participants, 90% reported that anyone could contract Ebola, and 70% reported that there is no treatment or vaccine. Most (76.3%) of the participants answered that Ebola is fatal (Table 2). Most of the participants reported a low level of worry about contracting Ebola (43.6%) and a low level (< 50% risk) of worry about contracting the disease in Israel (62.2%).

The survey indicated that Israelis have specific expectations from the Ministry of Health. They expect updates on Ebola (58.6%) and updates on topics of uncertainty (54%) related to Ebola. Almost half of the participants thought the information provided by the Ministry of Health on Ebola and its prevention was insufficient (44.5% and 50.4%, respectively), and almost half (45.2% and 41.1%, respectively) were unsure if it was sufficient (Table 2).

As a result of the bivariate analyses for assessing the association in the knowledge score between levels of worry about contracting Ebola or having an outbreak in Israel, we found that there is no statistical difference between knowledge score and worry levels of the 2 dependent variables (P > .05) (data not shown). Additionally, bivariate analysis shows that there are no statistical differences between health care workers versus non-health care workers in the overall knowledge score (P > .05). When we assessed each item related to knowledge, we found that there is a significant statistical difference between health care workers versus non-health care workers regarding knowledge of who could contract Ebola and whether there is any Ebola treatment or vaccine (Table 3).

The results showed that there is an association between age, sex, and medium level of worry of contracting Ebola. Older people are less likely to worry about contracting Ebola. For a 1 year increase in the age of the participants, the odds of a medium level of worry are 0.97 lower than the low level of worry of contracting Ebola (AOR = 0.97; 95% CI, 0.95–0.99). Women are more likely to worry than men. Women are twice more likely than men to worry at a medium level (AOR = 2.19; 95% CI, 1.3–4.27). However, the study did not find any association between age and high level of worry or between sex and high level of worry. The knowledge and knowledge score for health care workers and education were not significantly associated with any level of worry (Table 4).

Furthermore, when we assessed the association between knowledge score and worry level of contracting Ebola in Israel, we could not find any significant association between knowledge and worry level regarding an Ebola outbreak in Israel. Additionally, age, sex, being a health care worker, and education were not significantly associated with knowledge and worry level (Table 4).
NOTE. Values are odds ratio (95% confidence interval) or as otherwise indicated.

*P value is statistically significant at P < .05.

1For categorical variables the χ² test is used, and for continuous variables the t test is used.

Table 3
Differences between health care workers versus nonhealth care workers in the overall knowledge level, of who could contract Ebola, and Ebola treatment or vaccine

<table>
<thead>
<tr>
<th>Measure/Question</th>
<th>Health care workers</th>
<th>Nonhealth care workers</th>
<th>χ² test or t test*</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall knowledge (score), mean ± SD</td>
<td>4.15 ± 0.82</td>
<td>4.28 ± 0.83</td>
<td>–1.13</td>
<td>.259</td>
</tr>
<tr>
<td>Infected with Ebola</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immigrants or international workers from Africa</td>
<td>1 (1.4)</td>
<td>25 (10.1)</td>
<td></td>
<td>9.19</td>
</tr>
<tr>
<td>Everyone</td>
<td>68 (97.1)</td>
<td>221 (89.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnant women and children</td>
<td>1 (1.4)</td>
<td>1 (0.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health care workers (doctors, nurses, etc)</td>
<td>1 (1.4)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment for Ebola or vaccine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is a treatment for Ebola</td>
<td>3 (4.3)</td>
<td>31 (12.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As of today, there is no treatment for Ebola, but there is a vaccine for Ebola</td>
<td>6 (8.7)</td>
<td>22 (8.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As of today, there is neither a treatment for Ebola nor a vaccine</td>
<td>57 (82.6)</td>
<td>163 (66.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>3 (4.3)</td>
<td>30 (12.2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE. Values are n (%), n, or as otherwise indicated.

Table 4
Ordinal logistic regression for the association between knowledge level and worry level for Israelis to contract Ebola and for Ebola to break out in Israel

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>Worried to be infected</th>
<th>Worried to find Ebola cases in Israel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.98 (0.94-1.02)</td>
<td>0.97 (0.95-0.99)</td>
</tr>
<tr>
<td>P value</td>
<td>.273</td>
<td>.009</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Ref</td>
<td>Ref</td>
</tr>
<tr>
<td></td>
<td>2.39 (0.75-3.59)</td>
<td>2.19 (1.3-4.27)</td>
</tr>
<tr>
<td>P value</td>
<td>.139</td>
<td>.020</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤High school</td>
<td>Ref</td>
<td>Ref</td>
</tr>
<tr>
<td>&gt;High school</td>
<td>NS</td>
<td>1.04 (0.29-3.78)</td>
</tr>
<tr>
<td>P value</td>
<td>.538</td>
<td></td>
</tr>
<tr>
<td>Academic degree</td>
<td>NS</td>
<td>0.59 (0.20-1.75)</td>
</tr>
<tr>
<td>P value</td>
<td>.157</td>
<td>.085</td>
</tr>
<tr>
<td>Health care worker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health care worker</td>
<td>Ref</td>
<td>Ref</td>
</tr>
<tr>
<td>Nonhealth care worker</td>
<td>1.99 (0.51-7.85)</td>
<td>1.56 (0.75-3.27)</td>
</tr>
<tr>
<td>P value</td>
<td>.324</td>
<td>.235</td>
</tr>
<tr>
<td>Knowledge score</td>
<td>1.05 (0.56-1.97)</td>
<td>1.18 (0.82-1.72)</td>
</tr>
<tr>
<td>P value</td>
<td>.875</td>
<td>.377</td>
</tr>
</tbody>
</table>

NOTE. Values are odds ratio (95% confidence interval) or as otherwise indicated.

*P value is statistically significant at P < .05.

DISCUSSION

The study indicates that Israelis were knowledgeable about Ebola during the questionnaire time frame. This finding emphasizes the concept of citizen science that states that the public is knowledgeable regarding environmental and health topics. According to this approach, the public does not lack knowledge as is stated in the deficit model. Rather, the analysis-acceptability distinction fails to recognize the potential multiple sources of knowledge regarding risk issues.

This finding stands out because there have been no instances of the disease in Israel and in light of the finding that most participants thought the information provided by the Israeli Ministry of Health on Ebola and Ebola prevention was insufficient. The public’s knowledge can be explained by the flood of news media, especially social media. Studies of the impact of public warnings about emerging diseases in uncertain situations have shown that they can receive much news coverage. The mass media are a leading source of health information for the public and can influence health-related beliefs, attitudes and behaviors.

Furthermore, this study underscores that scientific information cannot be limited messages because we assume that the public is constantly exposed to information through the media.

Another interesting finding is that not only is the public knowledgeable, but differences were found between health care professionals and the public regarding Ebola. A bivariate analysis shows that there is no difference between health care workers and nonhealth care workers in their knowledge score. When we assessed each item regarding knowledge level, we found that there was no statistically significant difference in most of the knowledge items (ie, transmission route, severity of the disease).

These findings undermine the deficit model’s assumption that public health professionals have greater access to scientific information and are more likely to understand it. We can interpret it in light of the fact that health care workers, similar to the public, are exposed to information mainly via the media. Because Ebola has not reached Israel, it is possible that health care workers, doctors, and nurses have been exposed to few, if any, professional discussions to which the general public had not been exposed.

In addition, this study reveals that we must take into account that health care professionals do not have the comprehensive knowledge of virologists. This group is often viewed as expert, whereas it is actually a subgroup of the general public. The difference between health care professionals and the public was reflected in only 3 findings: in 3 out of 7 items, the study found a statistically significant difference between health care and professional knowledge.
nonhealth care workers (ie, who can be infected and whether treatment exists). Health care workers might know more about the nonexistence of a vaccine because if a vaccine was developed they would be informed by the health authorities.

Also of interest is the breakdown of the findings as to ways of contracting Ebola. When respondents were asked how Ebola is contracted 52.4% answered body fluids and 25.4% incorrectly reported airborne. About a quarter of respondents chose airborne contagion, including health care workers, despite health organizations’ official position. This indicates that the public is still exposed to alternative voices in the media about uncertainty concerning the possibility of airborne Ebola transmission. Our goal was to indicate that the public is aware of a certain debate around transmission. This debate surfaced in the media and gained wide exposure both in traditional and new media. For this reason, we deliberately presented media articles because these articles are the sources accessible to the public.) Some studies and articles suggest that the issue of transmission comprises uncertainty and deserves further research. Nevertheless, this uncertainty is not reflected in the health authorities’ messages.

Furthermore, ambiguous messages from authorities reflected in the media may have influenced the range of answers given in the survey, including the 10.2% who replied “I do not know because there is uncertainty among scientists” and the 11.8% who responded “I do not know.” These ambiguous messages include the positions of the World Health Organization, CDC, Pentagon, US Army, and Israeli Health Ministry.

The findings regarding the question of the ways of contracting Ebola are significant because they indicate the importance of providing the public with practical information about preventing the disease. The survey indicates that the respondents will not know how to protect themselves in the event of an outbreak in Israel. Furthermore, when asked if they wanted to receive information that expresses scientific uncertainty, 54% of respondents said yes. This finding is consistent with risk communication studies about uncertainty, which indicate that the public wants full transparency of information, including updates about uncertainty and disagreements between experts. As Sandman and Lanard point out, “confident statements that turn out wrong exacerbate public fear.”

A noteworthy finding is the lack of correlation between respondents’ level of knowledge and their concerns regarding an Ebola outbreak in Israel. As a result of the bivariate analyses to assess the difference in knowledge levels across the different levels of concern about contracting the disease and concerns about contracting the disease in Israel, we found that there is no statistical difference between knowledge and worry levels for the 2 dependent variables. This finding is not surprising because according to a statistical approach, one can assume that the chances of outbreak or infection are small. The fact that Ebola did break out in Western countries challenges this view. In the context of the survey findings, the Israeli public might still view Ebola as a distant and irrelevant third-world disease and may believe it has low relevance. This is consistent with studies of public apathy and in accordance with the health belief model when the threat is not immediate. In addition, this finding emphasizes other studies that contend that public risk perception is rational and embodies attitudes, relevance, contextuality, and emotions regarding the risk. The public’s behavior in a crisis is to seek officials sources of security while tending to think independently.

The question is how the public can be prepared for an outbreak. More generally, how can the world be prepared for a disease that is still defined as a third-world disease but threatens to spread? When respondents were asked: To what extent do you agree that the health ministry provided comprehensive information about Ebola prevention?, 56% answered they did not feel they received comprehensive information, and 41% were unsure. This finding might indicate that concepts of transparency, inclusion, and trust building, basic risk communication concepts, have not yet been applied sufficiently and internalized.

Regarding limitations of the present study, it is important to note that alongside recruiting participants through a university Internet Web site, we used a nonprobability sampling method. Although the choice of nonprobability sampling techniques could threaten the external validity of the results, our choice was motivated by an attempt to reach a relatively large sample quickly because data had to be collected quickly in light of the increased spread of Ebola in different countries in the world.

As Mowat noted, citizen science has never been more relevant. This concept helps identify the failure to break the barrier separating experts and citizens and build a relationship between them. The challenge that organizations face is not only to convey knowledge, but also to find ways to convey information that reflect uncertainty and empower the public to make fact-based health decisions.

References