

# Science vs fear: The Ebola quarantine debate as a case study that reveals how the public perceives risk

Anat Gesser-Edelsburg<sup>1\*</sup> and Yaffa Shir-Raz<sup>1</sup>

<sup>1</sup> School of Public Health, University of Haifa, 199 Aba Khoushy Ave. Mount Carmel, Haifa 3498838, Israel

\* Corresponding Author [ageser@univ.haifa.ac.il](mailto:ageser@univ.haifa.ac.il)

† Head of Health Promotion Program, University of Haifa, 199 Aba Khoushy Ave. Mount Carmel, Haifa 3498838, Israel

Targeting Ebola International Congress 2015: Scientific Bases & Applications, Pasteur Institute, Paris, May 28-29, 2015



ASSET - Action plan on Science in Society related issues in Epidemics and Total pandemics, is a 48 months project, which aims to:

- 1) forge a partnership with complementary perspectives, knowledge and experiences to address effectively scientific and societal challenges raised by pandemics and associated crisis management
  - 2) explore and map SIS-related issues in global pandemics
  - 3) define and test a participatory and inclusive strategy to succeed
  - 4) identify necessary resources to make sustainable the action after the project completion.
- ASSET combines public health, vaccine and epidemiological research, social and political sciences, law and ethics, gender studies, science communication and media, in order to develop an integrated, transdisciplinary strategy, which will take place at different stages of the research cycle, combining local, regional and national levels.

## Objectives

This study focuses on newspaper coverage of the Hickox quarantine incident, using it as a case study to examine how the media characterized the spread of disease in an ongoing crisis situation characterized by uncertainty. The study builds on Slovic et al. who argue that risk perception is comprised of both emotional and analytical aspects.

## Methods

We employed a qualitative approach, first examining articles on Hickox's story in *The New York Times* and *New York Daily News* between October 25-31, 2014; and second, readers' comments in response to these articles.

## Results

The findings from the newspaper articles show that in their treatment of the quarantine issue, the media did not address the issue of uncertainty, and thus continued the health authorities' neglect of this issue. Although the media gave expression to various sides of the debate, it emphasized those who objected to the quarantine policy, thus raising the claim that the conflict was between "science" and the public's "irrational fears", and that the governors decided on quarantine in response to the public's panic and fears.

Table 1: Talkbacks Supporting/Against Quarantine

Newspaper	Support the quarantine	Against the quarantine	Unclear	Total
New York Times	3,483	3,422	308	7,213
New York Daily News	752	442	170	1,364

Table 2: Rhetorical Analysis

Terms and rhetoric used	New York Times		New York Daily News	
	Support the quarantine	Against the quarantine	Support the quarantine	Against the quarantine
Science/ Scientific	570	793	52	30
Evidence/Evidence Based	71	163	8	2
Studies/Researches	156	78	18	12
Experts	232	241	40	16
Common Sense/ logic/ logical	207	167	18	12

Table 3: Citing Studies and Official Sources

New York Times		New York Daily News	
Support the quarantine	Against the quarantine	Support the quarantine	Against the quarantine
29	2	18	0

Table 4: Central Sub-Themes Related to Science Found in the Readers' Comments

Opponents' comments	Science vs ignorance	Selected Responses		
		Feud... Stop having an opinion because yours is not relevant to anyone, and adopt the one held by 97% of scientists" (Adam Leggett, October 26, 2014, New York Daily News).	"They are the definition of "reacting", jerk-kneer reacting at that. Their actions aren't based on anything but fear, there's no science or logic involved" (Karen, The New York Times, October 27, 2014).	"There is no science to this... People cannot get Ebola if the person next to them is not symptomatic. That is why this edict is nonsensical. It only panders to the weak minded individuals" (Poetic Justice, October 26, 2014, New York Daily News)
	Ebola is not contagious until symptoms appear	"The science says Ebola is NOT CONTAGIOUS unless symptoms appear...when symptoms appear the patient is diagnosed AND if it is Ebola the patient is isolated and treated" (Michael, October 29, 2014, New York Daily News).	LE ROY you're wrong on this one. We SHOULD be following THE SCIENCE...Ebola is not CONTAGIOUS until symptoms appear...that is the science (Tommy, The New York Times, October 30, 2014).	
Supporters' comments	Science as a field in which uncertainty is "built-in"	"And "science" is 100% infallible? And humans are infallible as well? What about all the viruses and infections people die from while in the hospital each year, when the only way in for a minor medical procedure...." (MD Cooks, The New York Times, October 30, 2014).		
	Science regarding the Ebola and its transmission is uncertain	"I think that the 'scientific' evidence regarding Ebola is weak at best... Does anyone know the 'social' medical evidence on this? How many cases have actually been studied?... (Richard Estbin, The New York Times, October 30, 2014).		
	You can't always trust what the authorities present as "science"	"Ebola is still an epidemic with unknown positive treatment in spite of all the assurances given to us by most politicians... Political correctness rather than trying to apply caution and measures to protect our citizens. A quarantine is needed. What is not needed is political correctness" (JP, The New York Times, October 30, 2014).	"... I think most people viewing this feel the same, to science being hijacked to serve special interests" (spektrals), October 28, 2014, New York Daily News).	
No symptoms does not necessarily equal no infection	"FYI to those who do not believe in quarantine, 17% of Ebola patients did not have a fever before other symptoms. That's the science. Google it" (Chris, The New York Times, October 30, 2014).	"Yes there is a logical reason. She may have Ebola, just like the recent case of the doctor who had it and was not symptomatic" (BOB KAHN, October 29, 2014, New York Daily News).	"How do you know she was a zero risk if it can take 21 days for symptoms to emerge. I am so happy you never agree with me cause you're probably always wrong like you are here" (Andrew Peekster, October 29, 2014, New York Daily News).	

## Conclusion

From our analysis of readers' comments, it appears that the public did not speak in a single unified voice, but rather, was divided into supporters and opponents of quarantine. Both sides used scientific arguments and resorted to similar terminology, and tended to cite and present studies backing their arguments. As for irrational fears, although quarantine supporters expressed emotions, they indicated mainly concerns, not panic or hysteria.

## References (selected)

1. Charleston, C., and L. Crossley. Doomsday warning: UN Ebola chief raises 'nightmare' prospect that virus could mutate and become airborne - making it much more infectious. MailOnline 2 October, 2014. Available from <http://www.dailymail.co.uk/news/article-2778022/UN-Ebola-chief-raises-nightmare-prospect-virus-mutate-airborne.html#ixzz30H0v0w>.
2. Duggard, D.W., H. Hens, S.J. Perkins, G.J. Pebody, M. Zaki, C.J. Peters, and P.B. Jahring. 1992. Combined ebola hemorrhagic fever and Ebola virus infection in cynomolgus monkeys. Lab. Invest. 67: 427-431.
3. Dizon, J.M., Kanagathipati, R., Campion, E.W., Rubin, E.J., Hamner, S.M., Morrison, S., & Baden, L.R. (2014). Ebola and Quarantine. New Engl J Med. 371:2029-2030 November 20, 2014. DOI: 10.1056/NEJMp1413139
4. Ebola virus disease. Fact sheet 1030. World Health Organization Web site. <http://www.who.int/emergencies/diseases/nipah/ebola> [Updated September 2014]. Accessed November 23, 2014.
5. Gonsky, G., & Staley, S. Panic, Paranoia, and Public Health - The AIDS Epidemic's Lessons for Ebola. The New England Journal of Medicine. (2014). DOI: 10.1056/NEJMp1413425. <http://www.nejm.org/doi/full/10.1056/NEJMp1413425>
6. Harshbarger, A., & Fitzsimmons, C.E. Toxic! Negatives for Ebola. Nuts: Critiques Her Quarantine. The New York Times, OCT. 25, 2014. <http://www.nytimes.com/2014/10/25/opinion/2014/10/25/ny-ed-ebola.html>
7. Pengetty, M. Kaci Hickox accuses governors of exploiting Ebola fears for political gain. November 17, 2014. theguardian. <http://www.theguardian.com/world/2014/nov/17/kaci-hickox-ebola-accuses-chris-christie-paul-keping>
8. Howell, T. Airborne Ebola spread can't be ruled out, 60s from infamous 'Hot Zone' episode says. The Washington Times October 16, 2014. Available from <http://www.washingtontimes.com/news/2014/oct/16/airborne-ebola-outbreak-is-possible-again/?hpid=hp>
9. Jaax, N., P. Jahring, T. Geisbert, J. Geisbert, K. Meake, D. Nagley, E. Johnson, S. Jaax, and C. Peters. 1995. Transmission of Ebola virus (Zaire strain) to uninfected control monkeys in a biosafety cabinet laboratory. Lancet 346: 8991-8992: 899-7.
10. Johnson, E., N. Jaax, J. White, and P. Jahring. 1995. Lethal experimental infections of rhesus monkeys by aerosolized Ebola virus. Int J Exp Pathol 76: 443-227-36.
11. Mckenna, M. Ebola: The Only Thing We Fear is Ebola Fear itself. Wired, October 22, 2014. <http://www.wired.com/2014/10/ebola/>
12. Roels, H., H. A. S. Bloom, J. Burffington, G. L. Mulhopp, W. R. Mac Kamis, A. S. Khan, B. Ndambi, D. L. Noah, H. R. Rolka, C. J. Peters, and T. G. Kozak. 1999. Ebola hemorrhagic fever, Kikwit, Democratic Republic of the Congo, 1995: risk factors for patients without a reported exposure. J Infect Dis. 179: 550-552.
13. Ross, P. Is Ebola airborne? Aerial transmission of the virus cannot be 'excluded'. International Business Times October 17, 2014. Available from <http://www.ibtimes.com/ebola-airborne-aerial-transmission-virus-cannot-be-excluded-1706072>
14. Sanchez, R., Shochet, C.E., & Karim, F. Ebola update: Maine judge rejects quarantine for nurse Kaci Hickox. CNN, November 1, 2014. <http://edition.cnn.com/2014/10/31/health/ebola/>
15. Sandison, B., & Lantieri, J. COMMENTARY: When the next Ebola crisis comes, how do we respond? October 9, 2014. Center for Infectious Disease Research and Policy. Accessed December 10, 2014. <http://www.cidrap.umn.edu/news-perspective/2014/10/09/when-the-next-ebola-crisis-comes-how-do-we-respond>
16. <http://www.cidrap.umn.edu/news-perspective/2014/10/22/commentary-when-the-next-ebola-crisis-comes-how-do-we-respond>
17. Schirring, J. (2014). CDC: some states differ over 'quarantine' for Ebola suspects. Oct 27, 2014. Center for Infectious Disease Research and Policy. <http://www.cidrap.umn.edu/news-perspective/2014/10/27/cdc-some-states-differ-over-quarantine-ebola-suspects>
18. Weingart, M., Embury, Hyatt, C., Mion, G., Leung, A., Smith, G., Kobinger, G. 2012. Transmission of Ebola virus from pig to non-human primates. Sci Rep. 2:811. doi: 10.1038/srep00811
19. Wulfford, L., & Morgan, D. CDC says returning Ebola medical workers should not be quarantined. Reuters, October 29, 2014. <http://www.reuters.com/article/2014/10/29/us-ebola-us-newYork-idUSKBN0K12020141028>
20. Zaveloff, K., & Eisenstein, L.G. October 29, 2014. Threat of Labeled Cook Test Makes Quarantine Policy. New York Times.

For more information on the ASSET project please go to <http://www.asset-scienceinsociety.eu/>



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 612336.