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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ASSET
SHARE AND MOVE TO FACE NASTY BUGS

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.

Highlights

- The public has knowledge about Ebola and is updated on the topic, including scientific issues that are on the agenda, such as the question of Ebola transmission.
- No statistically significant difference was found between health care workers versus nonhealth care workers in the knowledge and worry score.
- The public expects information about Ebola from health authorities, including topics of uncertainty.
- More than half of the participants thought the information provided by health authorities on Ebola and Ebola prevention was insufficient, and almost half were unsure if the information was sufficient.

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).

Table 1
Distribution of knowledge, worry, and expectation from the Ministry of Health in Israel (N = 327)

Measure/Question	Value	Measure/Question	Value
Knowledge		**Worry**	
Definition of Ebola		Risk of an Ebola outbreak in Israel	
An infection transmitted from person to person	306 (94.4)	High (>50%)	24 (7.7)
It is not a contagious infection	2 (0.6)	Medium (50%)	98 (30.3)
Do not know	16 (4.9)	Low (<50%)	201 (62.2)
Missing	3	Missing	4
Transmission route		Worry about contracting Ebola	
Fluid (eg, blood, saliva, feces, etc)	170 (52.6)	High	73 (22.6)
Air droplets	82 (25.4)	Medium	108 (33.4)
Do not know because scientists are uncertain	33 (10.2)	Low	142 (43.9)
Do not know	38 (11.8)	Missing	4
Missing	4	Expectation from the Ministry of Health	
Who can contract Ebola		Receiving more information from the Ministry of Health	
Immigrants or international workers from Africa	26 (8.1)	Yes, just in case we have reported cases in Israel	109 (33.6)
Everyone	294 (91.3)	Yes, now	190 (58.6)
Pregnant women and children	1 (0.3)	Not interested to get any kind of information	25 (7.7)
Health care workers (doctors, nurses, etc)	1 (0.3)	Missing	3
Missing	5	If you answered yes to the previous question, what kind of information would you like?	
		What to do to prevent the transmission	43 (14.7)
Treatment for Ebola or vaccine		Everything related to Ebola, treatment, and prevention (also subjects that include scientific uncertainty)	157 (54.0)
There is a specific treatment for Ebola	34 (10.6)	Everything related to Ebola, but just for topics that have scientific certainty	91 (31.3)
As of today, there is neither a vaccine nor any specific treatment for Ebola	224 (70.0)	Missing	36
As of today, there is no specific treatment for Ebola, but there is a vaccine	29 (9.1)	Extent of agreement that the Ministry of Health provided comprehensive information on Ebola	
Do not know	33 (10.3)	Strongly agree	8 (2.5)
Missing	7	Agree	25 (7.8)
Severity of Ebola		Not sure	145 (45.2)
Fatal disease	244 (76.3)	Disagree	99 (30.8)
It is a dangerous disease that can be fatal, only for people at risk	37 (11.6)	Strongly disagree	44 (13.7)
Ebola is dangerous, but it is possible to recover	25 (7.8)	Missing	6
Ebola is not dangerous at all	0 (0.0)	Extent of agreement that the Ministry of Health provided comprehensive information on Ebola prevention	
Do not know	14 (4.4)	Strongly agree	3 (0.9)
Missing	7	Agree	24 (7.5)
Knowledge score		Not sure	132 (41.1)
Knowledge score for correct answers	4.18 ± 0.83 (2-5)	Disagree	117 (36.4)
		Strongly disagree	45 (14.0)
		Missing	6
(continued)		NOTE. Values are n (%), n, or mean ± SD.	

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 (Table 1). No statistically significant difference was found between health care workers versus nonhealth care workers in the knowledge score (Table 2). Additionally, no statistically significant association was found between knowledge and worry levels (Table 3).

Table 2
Differences between health care workers versus nonhealth care workers in the overall knowledge level, of who could contract Ebola, and Ebola treatment or vaccine

Measure/Question	Health care workers	Nonhealth care workers	χ^2 test or t test*	P value
Overall knowledge level (score), mean ± SD	4.15 ± 0.82	4.28 ± 0.83	-1.13	0.259
Infected with Ebola			9.19	0.027†
Immigrants or international workers from Africa	1 (1.4)	25 (10.1)		
Everyone	68 (97.1)	221 (89.5)		
Pregnant women and children	0 (0.0)	1 (0.4)		
Health care workers (doctors, nurses, etc)	1 (1.4)	0 (0.0)		
Treatment for Ebola or vaccine			8.63	0.035†
There is a treatment for Ebola	3 (4.3)	31 (12.6)		
As of today, there is no treatment for Ebola, but there is a vaccine for Ebola	6 (8.7)	22 (8.9)		
As of today, there is neither a treatment for Ebola nor a vaccine	57 (82.6)	163 (66.3)		
Do not know	3 (4.3)	30 (12.2)		

NOTE. Values are n (%), n, or as otherwise indicated.
*P value is statistically significant at P < .05.
†For categorical variables the χ^2 test is used, and for continuous variables the t test is used.

Table 3
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

Demographic characteristics	Worried to be infected			Worried to find Ebola cases in Israel		
	High	Medium	Low	High	Medium	Low
Age	0.98 (0.94-1.02)	0.97 (0.95-0.99)*	Ref	1.00 (0.97-1.02)	0.99 (0.97-1.01)	Ref
P value	0.273	0.009		0.923	0.524	
Sex						
Male	Ref	Ref	Ref	Ref	Ref	Ref
Female	2.39 (0.75-3.59)	2.19 (1.30-4.27)*		0.94 (0.46-1.96)	1.38 (0.72-2.65)	
P value	0.139	0.020		0.883	0.331	
Education						
≤High school	Ref	Ref	Ref	Ref	Ref	Ref
≥High school	NS	1.04 (0.29-3.78)		0.88 (0.19-4.11)	0.80 (0.19-3.36)	
P value		0.538		0.220	0.693	
Academic degree	NS	0.59 (0.20-1.75)	Ref	0.13 (0.11-1.63)	0.46 (0.14-1.57)	Ref
P value		0.157		0.085	0.110	
Health care worker						
Health care worker	Ref	Ref	Ref	Ref	Ref	Ref
Nonhealth care worker	1.99 (0.51-7.85)	1.56 (0.75-3.27)		1.75 (0.70-4.43)	1.84 (0.72-3.07)	
P value	0.324	0.235		0.228	0.290	
Knowledge score	1.05 (0.56-1.97)	1.18 (0.82-1.72)	Ref	0.88 (0.58-1.34)	1.04 (0.71-1.51)	Ref
P value	0.875	0.377		0.555	0.848	

NOTE. Values are odds ratio (95% confidence interval) or as otherwise indicated.
NS, odds ratio included a wide interval that yielded an insignificant outcome because of the small numbers in the high level category of the worry level; Ref, reference.
*P value is statistically significant at P < .05.

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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