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Zika 2016: A 3-Phase Longitudinal Study of the Media Impact on Public Attitudes and Behavioral Response Characteristics

Karly Kownslar
Pittsburg State University

2016 Zika Virus outbreak and the Extended Parallel Processing Model

Karly Kownslar

Question

- How do people process risk messages during disease outbreaks?
- What can we learn from surveying people in real-time during the 2016 outbreak?
- What does theory tell us?

Zika

- Spread by mosquitos and human-to-human through bodily fluids
- Majority of cases lead to flu-like symptoms and rash
- In 2016, officials connected Zika infection to more serious disorders:
    - Microcephaly in fetuses and newborns
    - Guillain-Barre syndrome – temporary paralysis

Literature Review

- Media inflates negative health outcomes (Goodall et al., 2012)
- News reports use panic-inducing words that indicated themes of threat, susceptibility, fear, and uncertainty (Adeyanju & Neverson, 2005)
- When health agencies make mistakes during epidemics it impacts their credibility (Rosenbaum, 2015)
- People typically think *others* are more susceptible to negative messages or media contact, called the third person effect (Wei, Lo & Hu, 2008).
- All these things can impact how the public deal with health threats

Extended Parallel Processing Model (EPPM)
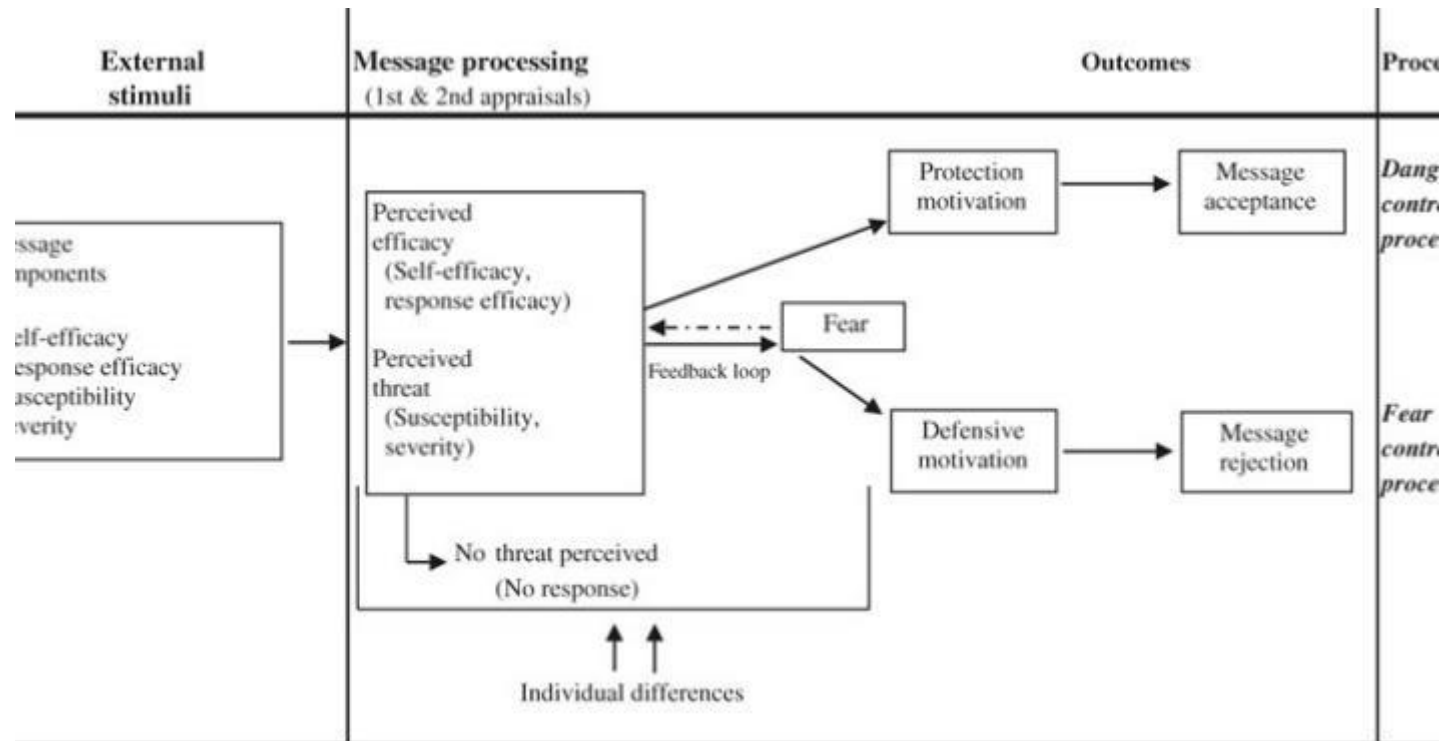
Research Questions

- *RQ1.* How does consumption of media content about Zika impact perceptions of severity?

- *RQ2.* How does consumption of media content about Zika impact perceptions of susceptibility?

- *RQ3.* Did consumption of Zika-related media impact participants' perceived self-efficacy over time?

- *RQ4.* Did consumption Zika-related media content impact participants' perceived response efficacy over time?

- *RQ5.* Does consumption of Zika-related media affect third person perception?

Hypothesis

- Consumption of messages from health agencies will lead to higher intent to adopt the preventative behaviors compared to consumption of Zika-related media from the other channels.

Method

- Quantitative study
- Participants answered surveys on the variables of the EPPM and media consumption
- Participants were recruited through Amazon Turk and Turk Prime to ensure anonymity and a large sample
  - 826 responses over three Time-Phases
    - April, September, and November 2016
    - 794 responses were analyzed
- Study approved by IRB

Participants

Participants
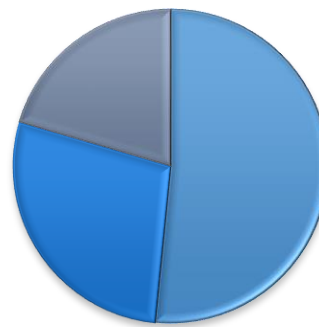
- TP 1
  n=426
- TP 2
  n=231
- TP 3
  n=169

Sex

- Female
  51%
- Male
  48%

Age
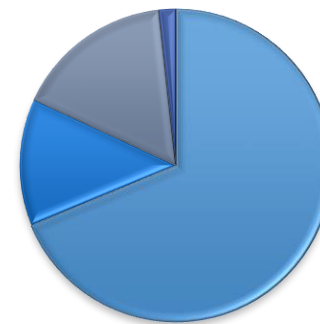
- 18-34
- 35-39
- 45-64
- 65+

Messages

External stimuli

Message components

Self-efficacy
Response efficacy
Susceptibility
severity
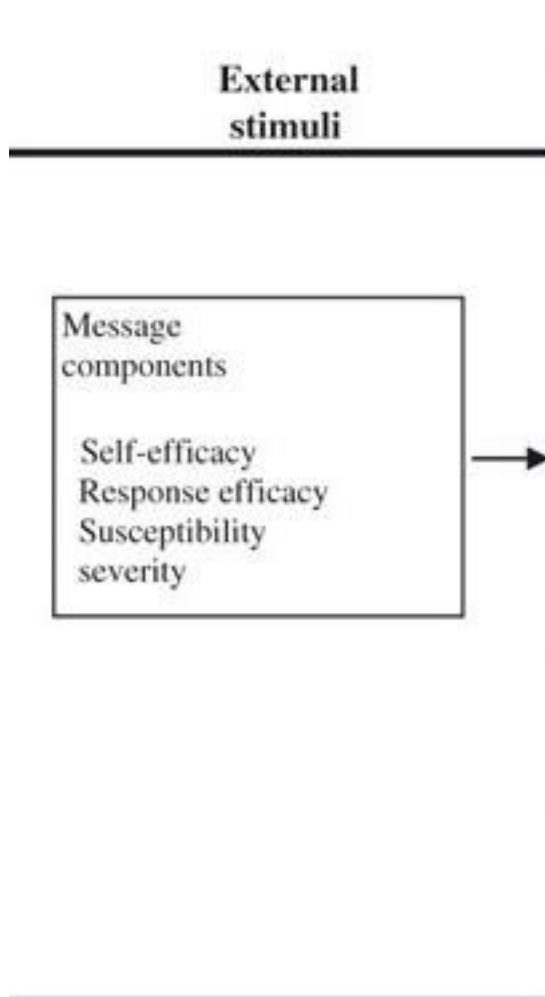
- Consumption of Zika-related media
  - How many times did they hear about the global and U.S. Zika outbreak
  - From which sources did they hear about Zika:
    - Friends/Family
    - Traditional Media (TV, radio, newspaper)
    - Social media
    - Government agencies
    - Healthcare workers

Message Processing

Message processing
(1st & 2nd appraisals)

Perceived
efficacy
(Self-efficacy,
response efficacy)

Perceived
threat
(Susceptibility,
severity)

Fear

Feedback loop

No threat perceived
(No response)

Individual differences
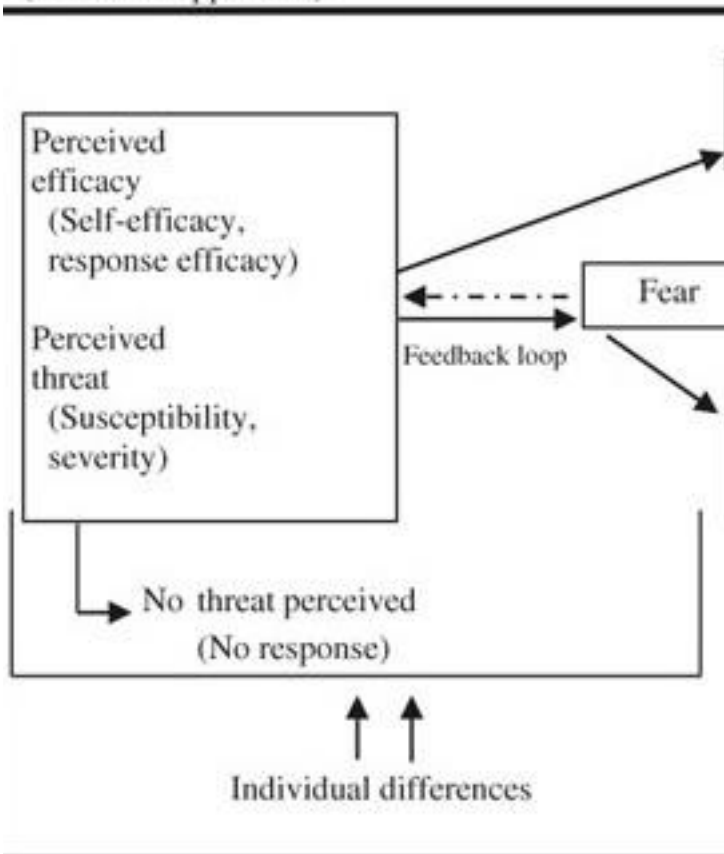
- Asked to report their perceptions on perceived threat on a 5-point Likert scale:
  - Severity
  - Susceptibility

Message Processing

Message processing
(1st & 2nd appraisals)

Perceived
efficacy
  (Self-efficacy,
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Perceived
threat
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Individual differences
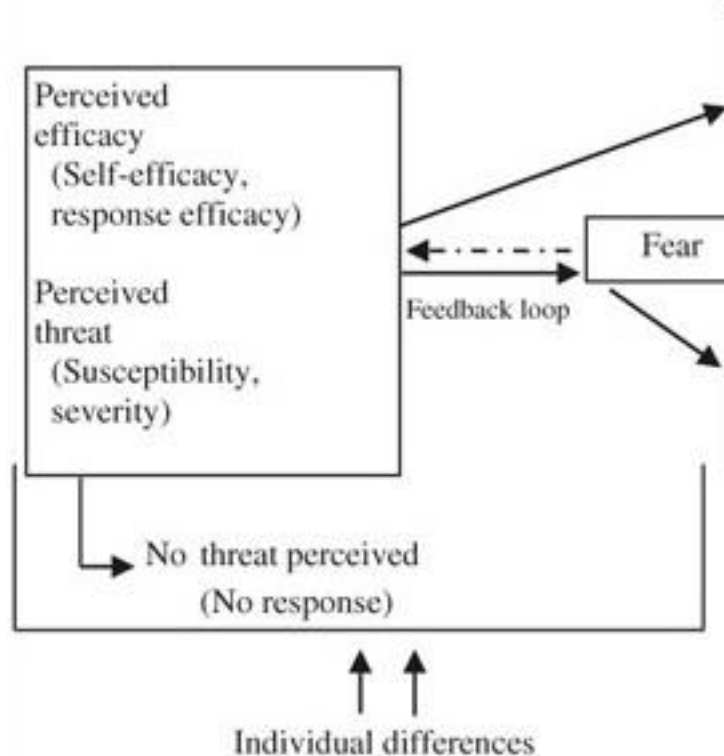
- Efficacy (5-point Likert scale)
  - Self
  - Response
  - Third person effects – added to original model
    - Others' self-efficacy
    - Others' response-efficacy

Outcomes

Outcomes		Process
Protection motivation → Message acceptance		*Danger control process*
Defensive motivation → Message rejection		*Fear control process*
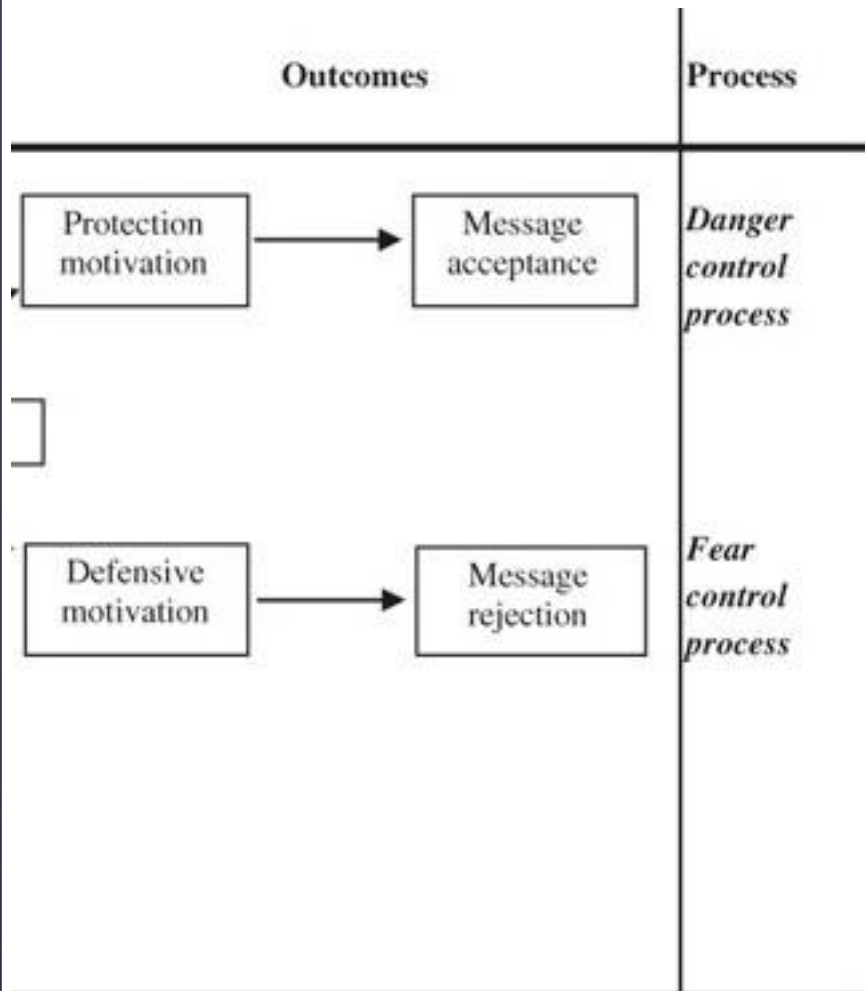
- Behavioral intentions
- Avoid Acquisition
  - Avoid traveling to impacted areas
  - Use mosquito nets, repellant
- Avoid transmission
  - Get screening
  - Family planning
  - Consider or obtain an abortion
- Share information
- Seek information

Results & Discussion

- *RQ1. How does consumption of media content about Zika impact perceptions of severity?*

  - Participants who heard about Zika more than 10 times had higher perceived severity than participants who had heard of Zika only once

Table 1. Media consumption of U.S. Zika Outbreak and Perceived Severity and Susceptibility

	Severity $M(SD)$	Susceptibility $M(SD)$
Not at all	3.88(.09)	2.35(.12)[a]
Once	3.87(.08)[a]	2.53(.10)
2-4 Times	3.94(.05)	2.73(.07)[b]
5-10 times	4.03(.06)	2.85(.08)[a]
10 or more times	4.08(.06)	3.04(.08)[a]
Don't know	4.60(.33)	3.53(.43)

Note: [a]significant at .01 level; [b]significant at .05 level

Results & Discussion

- *RQ2. How does consumption of media content about Zika impact perceptions of susceptibility*

- Participants who heard about the U.S. Zika outbreak multiple times had higher perceived susceptibility than those who had heard about Zika only once

Table 1. Media consumption of U.S. Zika Outbreak and Perceived Severity and Susceptibility

	Severity $M(SD)$	Susceptibility $M(SD)$
Not at all	3.88(.09)	2.35(.12)[a]
Once	3.87(.08)[a]	2.53(.10)
2-4 Times	3.94(.05)	2.73(.07)[b]
5-10 times	4.03(.06)	2.85(.08)[a]
10 or more times	4.08(.06)	3.04(.08)[a]
Don't know	4.60(.33)	3.53(.43)

Note: [a]significant at .01 level; [b]significant at .05 level

Results & Discussion

- *RQ3. Did consumption of Zika-related media impact participants' perceived self-efficacy over time?*

- *RQ4. Did consumption Zika-related media content impact participants' perceived response efficacy over time?*

- Participants' self-efficacy and response-efficacy increased over the times surveyed

Table 2. Severity, Susceptibility, Self-Efficacy, and Response-Efficacy over time

	T1 M(SD)	T2 M(SD)	T3 M(SD)
Severity	3.98(.74)	3.99(.75)	3.99(.76)
Susceptibility	2.81(.95)[a]	2.87(.95)	2.64(1.03)
Self-Efficacy	2.82(.86)[b]	3.20(.77)	3.34(.73)
Response-Efficacy	3.18(.84)[c]	3.41(.83)	3.53(.77)

Note: 1-5 Likert ranging strongly agree to strongly disagree, higher numbers indicate more positive reactions. [a]=.06, [b]p<.05, [c]p<.001.

Results & Discussion

- *H1. Consumption of messages from health agencies will lead to higher intent to adopt the preventative behaviors compared to consumption of Zika-related media from the other channels.*

- Participants who heard about Zika from government agencies did have significant more intentions to share Zika related information online, perhaps because government agencies have more credibility than the other sources

Implications

- As participants heard more information about the U.S. Zika outbreak, results indicate message acceptance and danger-control processes in the form of intention to do the behaviors listed

Implications

- Those who reported interpersonal communication about Zika felt others would be more effective dealing with the threat

Implications

- While perceived severity of Zika remained high, participants who reported hearing about Zika from any source had higher perceptions of self-efficacy and response-efficacy for themselves and others (TPP)

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