Vaccine Hesitancy: Countering the Anti-Vaccine Lobby

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NRP74: Determinants of Vaccine Hesitancy and Under-Immunization with Childhood and Human Papilloma Virus Vaccines in Switzerland

Goals of the presentation

- To discuss the current situation about the heightened attention and interest toward vaccine hesitancy globally
- To clarify some of the terminology concerning vaccine hesitancy and underimmunization
- To provide some socio-historic context and some of the recurring themes of vaccine hesitancy literature
- To propose several evidence-based methods to address vaccine hesitancy in the public sphere and in clinical settings
- To give a brief overview of an ongoing National Research Program on vaccine hesitancy and under-immunization in Switzerland

Vaccine hesitancy: Among ten threats to global health in 2019

Number of Reported Measles Cases (6M period)

<table>
<thead>
<tr>
<th>Country</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madagascar</td>
<td>84,765</td>
</tr>
<tr>
<td>Ukraine</td>
<td>56,094</td>
</tr>
<tr>
<td>India**</td>
<td>19,544</td>
</tr>
<tr>
<td>Nigeria</td>
<td>10,610</td>
</tr>
<tr>
<td>Brazil</td>
<td>8,663</td>
</tr>
<tr>
<td>Philippines</td>
<td>7,518</td>
</tr>
<tr>
<td>Yemen</td>
<td>6,779</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>5,902</td>
</tr>
<tr>
<td>Thailand</td>
<td>5,784</td>
</tr>
<tr>
<td>Venezuela (Bolivarian Republic)</td>
<td>5,668</td>
</tr>
</tbody>
</table>

Notes: Based on data received 2019-05; Surveillance data from 2018-10 to 2019-03; * Countries with highest number of cases for the period **WHO classifies all suspected measles cases reported from India as measles clinically compatible if a specimen was not collected

Clarifying terminology

- WHO Strategic Advisory Group of Experts (SAGE) on Vaccine Hesitancy defined vaccine hesitancy as a “delay in acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place and vaccines” (MacDonald, 2015, p. 4163)
- This definition has been criticized for the following reasons:
  1. VH is often discussed as a behavior, whereas hesitancy is a psychological state
  2. VH is used as an umbrella term that incorrectly includes conscientious non-vaccinators
  3. VH can be erroneously used as a causal explanation for underimmunization, whereas social determinants of health, such as pragmatics, access, inadequate services, or policies, may play more important roles in uptake (Bedford et al., 2018)

Clarifying terminology (continued)

- From a global perspective, a systematic review showed that, “A variety of factors were identified as being associated with vaccine hesitancy but there was no universal algorithm; the independent and relative strength of influence of each factor is complex and context-specific – varying across time, place and vaccines” (Larson et al. 2014, p. 2155)
- It is important to distance ourselves from the pro- and anti-vaccine dichotomy by “getting past polarization in the public discourse” (Brunson and Sobo, 2017)
- Antipro stances do not accurately reflect the range of views people have
  - Ambivalence; vaccine-specific views; context-specific views; views can change over time

June 21, 2019
Social trends and other considerations

- The term VH is ambiguous and its common use does not generally take into account larger socio-medical trends. Peretti-Watel et al. (2015) propose a framework that "considers VH a kind of decision-making process that depends on people's level of commitment to health/risk culture and on their level of confidence in the health authorities and mainstream media." (p. 2)
- Patient adherence to "healthism" (Greenhalgh & Wessely, 2004)
- Consumerism of healthcare (Tomes, 2001; O'Hara, 2013)
- Increase in patient autonomy and the shift away from doctor paternalism (Armstrong, 2014)
- Experiential and lay knowledge in patient decisions (Caron-Flinterman et al., 2005)
- Skepticism toward health authorities, perceptions of the influence of pharma industry in scientific knowledge production and profit-seeking (Epstein, 1996, Salmon et al., 2015; Ward, 2017)
- The prevalence and popularity of complementary and alternative medicine (CAM) in Western countries (Barnes et al., 2008, Kemmppainen et al., 2018, Hart, 2017, Attwell et al., 2018)
- Social networks and their influence on vaccination perspectives (Brunson, 2013)
- Multitude of information, particularly via the press, the Internet, and social media → 'information overload,' 'misinformation,' and increased levels of anxiety and indecision (Kata, 2010, Betsch and Sachse, 2012; Yaqub et al., 2014, Wang et al., 2015, Sobo et al., 2016)

So, what can scientists and healthcare professionals do?

In the public arena

WHO's Best Practice Guidance: "How to respond to vocal vaccine deniers in public"

National Research Program 74

- National study, 4 years (2017 – 2021)
- Two research phases: Mixed-methods approach
  1) Qualitative phase (German and French-speaking CH)
     - Semi-structured interviews
     - Providers ("CAM" and "biomedical")
     - "Novel part of our study: exploring CAM/biomedical provider distinction and its relationship to VH with qualitative methodologies
     - Observation of medical consultations
     - Discourse analysis: Vaccine information sources and Internet sites
  2) Quantitative phase (German, French, and Italian-speaking CH)
     - PACV15 - Telephone survey (Opel et al. 2013) + other questions based on qualitative findings
     - Year 4 – Pilot Intervention
     - Likely concerning biomedical providers and their communication practices and approaches
     - Will not seek to implement mandatory vaccination

Example of 'weaponized' information on Twitter

Weaponized Health Communication: Twitter Bots and Russian Trolls Amplify the Vaccine Debate

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National Research Program 74 Study Objectives

1) to provide a detailed characterization of the medical, demographic, geographical and sociocultural determinants of vaccine hesitancy and under-immunization in Switzerland
2) to explore and quantify the determinants of vaccine hesitancy and under-immunization with childhood and human papilloma virus vaccines in Switzerland
3) to use the knowledge gained as the necessary background to design and submit a pilot intervention and to design an effective intervention randomized clinical trial to address vaccine hesitancy in Switzerland (to be conducted after completion of this research)

Preliminary Qualitative Results

Vaccine hesitancy-acceptance spectrum

Completely anti-vaccine
Completely pro-vaccine

- Parents who consult biomedical providers
- Parents who consult CAM providers
- Parents who consult both CAM and biomedical providers

Excerpts from an interview with a former travel doctor

Researcher: During these consultations with parents, particularly for the catchup vaccines, who made the decision? Was it the mom, the dad, the child? Did the child have their say in the decision?

Doctor: The child, no. They never asked their child, well particularly for the small children when they would travel as a family. (...) In standard couples, it was mostly the mother. In the ‘alternative’ couples, it was more the father. (...) It could be super emotional because whatever I would say, it would make the mother afraid for her children. However, the one who was really determined was the father, with his preconceived notions and I wasn’t going to change his mind. So, yeah, that could sometimes even create tension for the couple, when one changed her mind and the other said, "No, no, we’ve always said we would [not vaccinate]."

More excerpts from an interview with a former travel doctor

Researcher: Would you be interested in training in ways that you can broach vaccination, in a way that would be more convincing?

Doctor: In my current job, not really, because it’s no longer an issue. But, when I used to work as a travel doctor, I think that would have really helped, yes.

Researcher: So really about the communicative aspects? How to talk about it?

Doctor: Yes! Like how to present it because I’m not so sure [laughs]. Because, now that I think about it, I realize that I used to explain it by scaring parents a little bit [laughs].

Researcher: Ok [laughs].

Doctor: This is the risk, bla-bla-bla. And I’m not so sure anymore, actually, that that is going to convince the parents.

Quantitative Phase Methods and Sample Sizes

- 120 (+) participating medical providers (CAM and biomedical) to assist with recruitment
- 21 medical students -> recruitment in provider offices
- Estimated sample size of 1,350 parents of children 0-11 years old for childhood vaccinations
- Estimated sample size of 722 adolescents/young adults (females 15-26 years old) and their parents for the HPV vaccination
- All participants will also be asked to provide us with copies of vaccination certificates so that we can compare vaccine hesitancy scores and other variables to vaccination uptake

Data Collection:

November 2018 -> December 2019
Quantitative Questionnaires

Questionnaires are administered over the telephone and have been translated from English into German, French, and Italian.

1. Items from the PACV 15, demographic questions, information sources on vaccination, health-seeking behaviors, risk perception, exercising agency in healthcare decisions (i.e. ‘healthism’), self-reported health, CAM usage, perceived control over exposure to vaccine preventable diseases, knowledge about the HPV vaccine, access to the HPV vaccine, roles of Cantonal vaccine programs, and a validated moral value questionnaire.

2. Study objective 2: to explore and quantify the determinants of vaccine hesitancy and under-immunization with childhood and human papilloma virus vaccines in Switzerland.

Conclusions

- Vaccine hesitancy and under-immunization are complex, multifaceted, and historically situated social phenomena with medical and public health consequences.
- Vaccine hesitancy is composed of a spectrum of attitudes towards vaccinations.
- Vaccine hesitancy ≠ anti-vaccination.
- Remember: when responding to vaccine hesitancy, you represent the legitimacy of the institutions of science, medicine, and health authorities.
- Trust and emotions largely shape how people make health decisions.
- Addressing vaccine hesitancy and under-immunization on social and individual levels will require that health systems ensure equitable access to vaccination and that healthcare professionals are able to provide tailored messages that make sense to people in ways that align with their values and worldviews.

References

- Betsch, C. and Sachse, K. 2012b. Dr. Jekyll or Mr. Hyde? (How) the Internet influences vaccination decisions: Recent evidence and tentative guidelines for online vaccine communication.

Qualitative Study Participants

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<td>9</td>
<td>20</td>
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<tr>
<td>Expessed vaccine hesitancy</td>
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<tr>
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<td>8</td>
<td>18</td>
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<tr>
<td>Total</td>
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