

Perceptions of pregnant women about influenza vaccine: What do we know? Violetta Gerzen Feshchenko MPH(c)

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Background

Flu

Influenza (flu) is a contagious respiratory infection transmitted by droplet contact from person to person.

- Complications can arise after the initial infection such as: bacterial pneumonia, infections of sinus and ear and exacerbation of chronic conditions
- In 2017-2018 flu season
 - > 900,000 people were hospitalized
 - > 90,000 people died from flu including 185 children

Certain people are at increased risk of contracting flu and having poor outcomes

Immunocompromised

Young children

Older adults

Pregnant women



Why Vaccinate in Pregnancy?

- Seasonal Influenza vaccine is recommended to prevent infection in pregnant women and is considered to be safe in any trimester.
- · However, there is suboptimal vaccine uptake despite the recommendation.

Only 53.6% of pregnant women are vaccinated

Benefits

Reduced hospitalizations

• Systematic review by Mertz et. al., demonstrated that pregnant women who contracted influenza were at a higher risk for hospitalization and mortality (Mertz et al., 2017).

Protection for infants

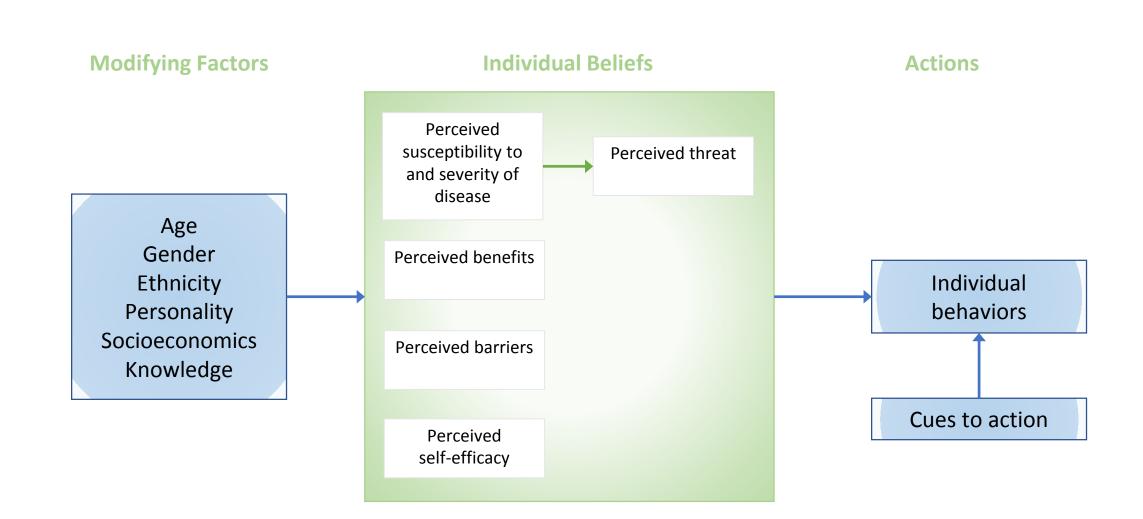
• Study by Zaman et al., revealed that women who received flu vaccine while pregnant had a lower rate of respiratory infections and their infants had fewer cases of influenza than infants whose mothers did not receive vaccine while pregnant (Zaman et al., 2008).

Cost effectiveness

• It is estimated that medical costs related to influenza during pregnancy can be as high as \$107,742,336 with overall costs of \$111,593,174 including loss of productivity and other aspects related to influenza (Xu et al., 2016).

Theoretical Model

Health Belief Model (HBM) "The HBM derives from psychological and behavioral theory developed in 1950 to understand and predict behaviors related to uptake of health services with the foundation that the two components of health-related behavior are 1) the desire to avoid illness, or conversely get well if already ill; and 2) the belief that a specific health action will prevent, or cure illness. In the end, decision making often depends on the person's perceptions of the benefits and barriers related to health behavior. There are six constructs of the HBM." (LaMorte, 2018).



Results

A final sample of 11 full text, peer-reviewed papers were reviewed and results were organized based on concepts from the Health Belief Model

Pregnant Women

Perceived susceptibility:

- Perception of risk as "high" or very high"
- Knowledge about *risk* and complications for self and babies
- Unvaccinated women: perceived risk as low, lack of knowledge about complications

Women who perceived influenza as a risk for themselves 15.9% and their babies 19.4%, were more likely to accept vaccine in Italy (Napolitano et al., 2017) Pregnant women who accepted influenza vaccine had higher knowledge about influenza during pregnancy and perceived that they were more susceptible to influenza than those who did not accept the vaccine 65.13% vs 27.95% (Hu et al., 2017).

Perceived severity:

- Perceived flu as "highly contagious" or "contagious" for self or babies
- Risk of *hospitalization* for babies and self
- Risk of *complication*s for self and babies (least important)

Perceived susceptibility to influenza infection in babies was number one reason for receiving flu vaccine among pregnant women in Korea and was reported by 22.8 % of vaccinated women along with perception of susceptibility in pregnant women 12.6%, were among top reasons to get vaccinated(Jung et al., 2016).

Perceived benefits:

- Desire to protect the baby from flu
- Desire to *protect self* from flu
 Trust in the *effectiveness* of vaccine

Important perceptions about influenza vaccine that led to vaccine uptake were desire to protect the baby from flu 33.1% and to protect self from flu 21.4% (Ding et al., 2015). Among vaccinated women, 63.5% perceived vaccine as safe and 12.6% had negative attitude regarding safety (Ding et al., 2015)

Perceived barriers:

- Vaccine *safety* concerns
 Concern that "will get flu"
- from vaccineLack of knowledge about *need*
- for vaccination

Perceived barriers were higher among unvaccinated women vs. vaccinated women in China and included beliefs that vaccine can cause illness 35.35% vs 17.17% followed by misconception that influenza vaccine is not safe during pregnancy 29.97% vs 14.87%, then followed by belief that it is not effective 30.30% vs. 16.23% (Hu et al., 2017).

Cues to action:

- Provider recommendation along with offer of vaccine
- during office visitProvider recommendation *no*
- offer of vaccine
 No recommendation, no offer
- of vaccine

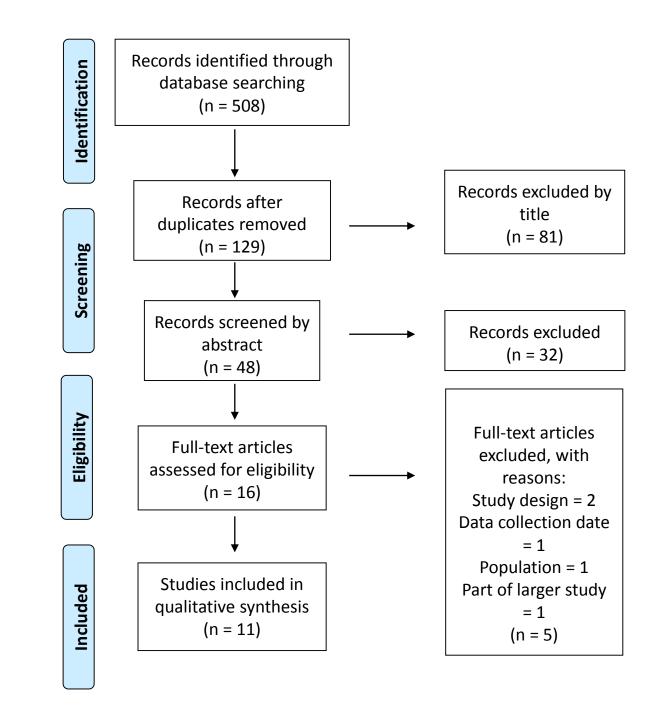
 Previous history of
- Previous history of vaccination

Pregnant women who accepted influenza vaccine were more willing to respond to cues to action such as provider recommendations than unvaccinated women 93.09% vs 74.41% (Hu et al., 2017). Even though, vaccination rate was very low in pregnant women in Italy, 9.7%, advice of a health care practitioner was the most important reason reported by 88.9% of women (Napolitano et al., 2017).

Vaccination Status

Methods

Four electronic databases were searched: PubMed, Ovid Full Journal, Ovid Medliner, CINAHL and Google Scholar with search terms such as "pregnant women, pregnancy, antenatal, influenza, influenza vaccine, flu vaccine, health belief, perceptions, attitudes, knowledge"



Inclusion criteria: Papers addressed human subjects, were English language, data were collected after December 2012, and were published between 2014-2019

Limitations:

- Limited generalizability not all countries or regions are represented in the final sample of papers.
- Most papers in the final sample used selfreport and online opt-in panels for data collection.
- Only one reviewer selected the papers.

Strengths:

- Sample sizes in all studies
- Comprehensive search supported by research librarian

Discussion

What do we know?

"Cues to action," a construct in the Health Belief Model was addressed in several papers and was a clear factor influencing vaccine uptake in pregnant women.

Provider recommendation along with offer of the vaccine at the time of an office visit was an effective way to improve take-up

What can we do?

To increase influenza vaccine uptake by pregnant women:

- Providers need to take advantage of the time during the office visit and discuss vaccine safety, effectiveness and risks of no vaccination and make recommendations.
- Vaccine needs to be available and offered during the office visit.
- Printed materials with evidence based information about safety of vaccine, benefits of vaccine to pregnant women and newborns can be provided as supplemental educational materials to increase knowledge and address misconceptions.

Acknowledgments

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