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Introduction and Background

Problem:

- Communities experiencing high social vulnerability face barriers to vaccination and to accessing reliable health information <sup>1</sup>
- Infodemic: rapid spread and overabundance of information during an epidemic <sup>2</sup>
- Misinformation: incorrect/false information given current scientific understanding <sup>3</sup>
- Measles resurgence (2025: 2,280 cases) <sup>4</sup> despite proven vaccine effectiveness <sup>5</sup>
- Disproven claim linking MMR vaccine to autism undermines vaccine confidence <sup>6</sup>

Knowledge Gap:

- How communities identify and navigate sources of reliable health information

Objectives:

- Examine how information ecosystem challenges shaped vaccine perceptions in a mid-sized Midwestern city
- Identify community-driven solutions for future public health crises

Theoretical Framework:

- Social Ecology of Health Beliefs and Misinformation Framework (SEHBMF): integrates Social Ecological Model (SEM) and Health Belief Model (HBM) in the context of misinformation <sup>7</sup>
- Examines information challenges across individual, interpersonal, community, and structural levels

Methods

Study Setting:

- >50% of the population in high social vulnerability areas (SVI  $\geq$  0.90) <sup>8</sup>
- Three target zip codes: 27% Black, 21% Hispanic/Latino <sup>9</sup>
- High COVID-19 rates, low vaccination uptake <sup>10</sup>

Study Design:

- Qualitative: 5 focus groups and 5 phone interviews (N=31)
- Semi-structured protocol on information navigation and vaccine communication

Participants (N=31):

- Recruited by community task force; word-of-mouth in target zip codes

| Table 1: Participant Demographics          |                                                  |
|--------------------------------------------|--------------------------------------------------|
| Group                                      | Demographics                                     |
| Community Resident Focus Groups (N=13)     | Mixed vaccination status<br>11 females; 2 males  |
| Community Leaders Focus Group (n=6)        | 3 African American<br>2 White; 1 Hispanic/Latino |
| Healthcare Providers Focus Group (n=7)     | Predominantly White<br>1 identified as Latina    |
| Spanish-speaking Resident Interviews (n=5) | 3 females; 2 males                               |

Analysis:

- Thematic analysis identified three primary themes (95% intercoder agreement)
- SEHBMF was applied to examine information challenges and identify subthemes across individual, interpersonal, community, and structural levels
- Peer debriefing ensured analytical rigor

IRB Approval

- University of Illinois College of Medicine Rockford (Protocol #21064)

Results

Theme 1: Communication Challenges

Subtheme: Language Barriers

“We need the language support. If you go now through Google, you will find...a few flyers on the State of Illinois Health Department website... But there’s no education...Educate the people about why we have to take the vaccine, why we should do the test ” (community resident, unvaccinated)

Theme 2: Barriers to Vaccination

I think that one thing that we are lacking is a **centralized place** to find all of those locations... Because you Google it, and **it changes from day to day**, week to week. One minute it’s a church, the next minute it’s a pop up, the next minute it’s a community center” (community resident, unvaccinated)

Theme 3: Lack of Reliable Information about the Vaccine and COVID-19

Subthemes: Difficulty Interpreting Information and Reliance on Social Media

Individual Level

“A lot of the interpretation is left up to individuals.... Just a lot of **miseducation** and not because anybody is interpreting it wrong. But because it has **not been appropriately interpreted for the public**” (community resident, vaccinated, age 30-49)

“I think that people do not think the vaccine will help. They have information but it is **wrong information** they read from **comments and posts online** that say the vaccine is bad. But that is **not the truth**” (Spanish-speaking community resident)

Subthemes: Micro-Communication and Culturally Congruent Messengers

Interpersonal Level

“Somebody in that neighborhood knows what’s going on, and **everyone trusts them**... We have got to **get down to that micro-communication level** if we honestly want to communicate with everyone” (community leader)

“I think it could be helpful if the information is coming from **other minorities** and **people like themselves**” (healthcare provider)

Subthemes: Education Needs and Faith-Based Organizations

Community Level

“They said, ‘I will not take vaccination because **I will not be able to make babies.**’ Another one said, ‘**No, I will have GPS in my body.**’ Another one said, ‘**No, it’ll change my DNA...**’ We need to educate the community about this. **We need knowledge. We need learning**” (community resident, vaccinated, age 30-49)

“I would suggest to start with the **faith centers**, either church or temples. I will **trust any resource coming from my church** because as **moral faith**” (community resident, vaccinated, age 30-49)

Subthemes: Rapidly Changing Guidance and Historical Trauma

Structural Level

“Today they said that the age is 12 and above. Suddenly, next day, oh no! It’s 15 to 12, so **within a 24- hour change**. Quarantine was 10 days. **Next day... it is five days** even though the same virus... They made it worse, so it’s just a matter of **rush or unplanned directions**” (community resident, vaccinated, age 30-49)

“The **historical trauma** ... and different situations also feed into the notion of why people are... **misinformed**... and just the **mistrust**. Once you don’t trust something, it is hard to trust... If you don’t trust the government, it is **hard for you to trust** and hear the information they are giving you” (community leader)

Discussion and Conclusions

Key Findings:

- Information challenges operate across all ecological levels simultaneously
- Individual: confusing, technical information pushed many to rely on social media
- Interpersonal: preferred communication from local, trusted messengers
- Community: trusted information from faith-based organizations
- Structural: shifting guidance and historical trauma eroded institutional trust

Recommendations and Implications for Practice:

- Interventions should be implemented across levels simultaneously through a coordinated communication approach grounded in health literacy strategies
- Individual: use plain-language messaging tailored to community health literacy and provide tools to support identifying reliable, evidence-based information
- Interpersonal: invest in hyperlocal trusted messengers and train them in health literacy strategies before crises occur
- Community: partner with faith-based institutions to deliver culturally congruent messaging and strengthen community education to build health literacy skills
- Structural: advance policy to address structural barriers and historical mistrust and promote organizational health literacy practices to improve accessibility

Limitations:

- Single city (limited generalizability), convenience sampling, and self-reported data

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