

Surveying rural healthcare workers for vaccine awareness and hesitancy

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INTRODUCTION

Rural communities = less vaccinated against SARS-CoV-2¹

- Due to misinformation, less available/affordable healthcare resources
- COVID-19 vaccine coverage in US in May 2021:
 - 38.9% in **rural** counties | 45.7% in **urban** counties
- Need to develop strategies to ↓ vaccine hesitancy → ↑ coverage

Promotores: lay community healthcare workers (CHWs)

- Share similar social, cultural, economic characteristics as patients
- Trusted sources of information → can have great success in delivering culturally-appropriate services
- Can alleviate healthcare pressures due to lack of healthcare resources and social determinants of health

Mariposa Community Health Center (MCHC) = FQHC in Nogales, AZ

OBJECTIVES

- Survey the opinions of rural CHWs and healthcare providers
- Assess awareness of vaccination rates and hesitancy in communities
- Identify vulnerable groups that would benefit from intervention
- Assess congruency of local perceptions about COVID-19 vaccines
- Provide ways to address vaccine hesitancy and rates in this setting

METHODS

Survey creation

- Two data collection surveys: one for providers, one for promotores
- One gift card survey (taken after data collection survey)
- Contains Likert-scale and free-response questions as well as basic demographic questions

Participant recruitment

- Participants employed at MCHC
- Must be 18 or older to participate
- Participation promoted via emails, flyers, and face-to-face recruitment
- Incentive: \$5 Walmart e-gift card

Data collection

- Data collected: April – May 2022
- Provided link/QR code that guided participants through e-survey(s)
- Data stored on Qualtrics and Box
- Personal info from gift card survey not connected to other responses

Data analysis

- Pearson's chi-squared tests via SPSS analysis software used to compare response counts
- $\alpha = 0.05$
- Descriptive statistics, frequencies utilized to find other patterns

RESULTS

	Providers	Promotores	χ^2 P value
Participants (N)	24	25	-
Demographic questions			
Age - 45 years old or older	10 (42%)	8 (32%)	$p = 0.064$
Race/ethnicity - Hispanic	12 (50%)	24 (96%)	$p < 0.001^*$
Gender - Female	16 (67%)	23 (92%)	$p = 0.028^*$
Zip code - Local resident/non-commuter	20 (83%)	25 (100%)	$p = 0.016^*$
Education - College or higher	17 (71%)	15 (60%)	$p = 0.008^*$
Vaccine uptake questions			
80% or more of colleagues are vaccinated	22 (92%)	21 (84%)	$p = 0.413$
80% or more community is vaccinated	11 (46%)	15 (60%)	$p = 0.032^*$
80% or more community has received booster	7 (29%)	9 (36%)	$p = 0.610$
70% or more children are vaccinated	6 (25%)	8 (32%)	$p = 0.767$
Vaccine attitude/knowledge questions			
Agree (or more) that rurality diminishes need for vaccines	4 (17%)	6 (24%)	$p = 0.524$
Agree (or more) that vaccines are safe and effective	23 (96%)	21 (84%)	$p = 0.171$
Agree (or more) that they are comfortable discussing vaccine topics	22 (92%)	17 (68%)	$p = 0.04^*$
Vaccine information source questions			
Medical professionals	22 (92%)	23 (92%)	$p = 0.966$
Family and friends	2 (8%)	7 (28%)	$p = 0.076$
Internet - websites or Google search	17 (71%)	10 (40%)	$p = 0.104$
Social media (Twitter, TikTok, Instagram)	3 (13%)	5 (20%)	$p = 0.478$

Table 1 – Quantitative results with Pearson's chi-squared statistical analysis

Age	Plurality = 35-44 years (36%, 18/49)
Race/ethnicity - Hispanic	73% overall (36/49) Almost all promotores (96%, 24/25)
Gender	39 female, 10 male Almost all promotores (92%, 23/25)
Level of education	Doctoral degree = only providers (10%, 5/49) Graduate degree = mostly providers (14%, 7/49) Promotores = 60% (15/25) with some college
Zip code - Local/non-commuter	100% of promotores 83% (20/24) of providers
Q1: Percentage of colleagues with COVID-19 primary series	88% (43/49) = 80% or more
Q2: Percentage of community with COVID-19 primary series	27% (13/49) = 70% 53% (26/49) = 80% or more
Q3: Percentage of adults with COVID-19 booster	24% (12/49) = 60% 20% (10/49) = 70% 33% (16/49) = 80% or more
Q4: Percentage of fully-vaccinated children	33% (16/49) = 50% All other options had lower frequencies
Q5: Vaccines are not as necessary in rural communities	20% (10/49) = agree or strongly agree 63% (31/49) = strongly disagree
Q6: Reasons someone should get vaccinated	Protection = 55% (27/49) Prevention of COVID-19 = 49% (24/49) Minimize death = 27% (13/49)
Q7: Reasons why patients do not get vaccinated	Misinformation = 51% (25/49) Fear and lack of trust = 41% (20/49) Side effects = 31% (15/49)
Q9: I am comfortable discussing vaccine topics	27% (13/49) = strongly agree 20% (10/49) = disagree, strongly disagree *Pearson chi-square significance = 0.04
Q10: Groups in need of vaccine education	Less than 18 years old = 35% (17/49) Minority groups = 31% (15/49) Older populations = 20% (10/49)
Q11: Vaccinations are safe and effective	59% (29/49) = strongly agree 10% (5/49) = disagree or strongly disagree *Pearson chi-square significance ~ 0.007

Table 2 – Descriptive statistical analysis of quantitative and qualitative questions

DISCUSSION

Implications: opportunities for educational interventions

- 20% believe vaccines aren't as prudent in rural communities, despite 2x mortality rate from COVID-19 vs urban areas²
- 29% of promotores are not comfortable discussing vaccine topics
- 10% of respondents disagree that vaccinations are safe and effective

Limitations

- Vaccine topics can be polarizing → limit participation in study
- Vaccine information, thus survey responses, can be transient
- Opportunity to survey second site unsuccessful → limited N size

Future projects

- Expand population surveyed to increase external validity of findings
- Create and test interventions supported by study findings
- Disseminate findings more to support associated initiatives, partnerships, and programs to increase vaccination rates

CONCLUSIONS

- Local COVID-19 vaccination coverage believed to be similar to, better than US rates amongst MCHC employees (at the time of the study)³
- Participants most hesitant to vaccinations due to misinformation, lack of trust in vaccines, side effects, and personal beliefs
- Groups in need of invention: younger and older patients, minorities
- Educational interventions could encourage more healthcare workers to support vaccine benefits and address vaccine hesitancy

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ACKNOWLEDGEMENTS

MCHC staff, including = Hee Ju, PharmD, BCACP, BC-ADM; Jeanna Szabliski, PharmD, CDCES; Patty Molina; Michael Castillo; Dan Prevost, MBA

Funding via a grant received from the National Rural Health Association (NRHA) to the Arizona Rural Health Association (AzRHA)

• Presented findings at NRHA (Albuquerque) and AzRHA (Flagstaff) conferences in 2022

LOGISTICAL INFORMATION

University of Arizona IRB approved as human research on 4/22/22 (STUDY0000904)

• All COIs reviewed with no issues, including author Daniel Tellez's employment at MCHC

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Figure 1 – Flowchart of project methodology