Engaging Latino Families About COVID-19 Vaccines: A Qualitative Study Conducted in Oregon, USA



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Abstract

Objectives. Latinos are disproportionately vulnerable to severe COVID-19 due to workplace exposure, multigenerational households, and existing health disparities. Rolling out COVID-19 vaccines among vulnerable Latinos is critical to address disparities. This study explores vaccine perceptions of Latino families to inform culturally centered strategies for vaccine dissemination. Method. Semistructured telephone interviews with Latino families (22 mothers and 24 youth, 13-18 years old) explored COVID-19 vaccine perceptions including (1) sources of information, (2) trust of vaccine effectiveness and willingness to get vaccinated, and (3) access to the vaccine distribution. We identified thematic patterns using immersioncrystallization. Results. We found that (1) 41% expressed optimism and willingness to receive the vaccine coupled with concerns about side effects; (2) 45% expressed hesitancy or would refuse vaccination based on mistrust, myths, fear of being used as "guinea pigs," and the perceived role of politics in vaccine development; (3) families "digested" information gathered from social media, the news, and radio through intergenerational communication; and (4) participants called for communityled advocacy and "leading by example" to dispel fear and misinformation. Optimistic participants saw the vaccine as a way to protect their families, allowing youth to return to schools and providing safer conditions for frontline essential workers. Conclusions. Culturally centered vaccine promotion campaigns may consider the Latino family unit as their target audience by providing information that can be discussed among parents and youth, engaging a range of health providers and advocates that includes traditional practitioners and community health workers, and disseminating information at key venues, such as schools, churches, and supermarkets.

Keywords

COVID-19 vaccines, culturally centered health promotion, Latino families, Oregon

The COVID-19 pandemic exacerbated health disparities among Latinos and further restricted access to basic needs, including work, education, food, and housing (Centers for Disease Control and Prevention [CDC], 2020). Latinos represent 13.4% of the population of Oregon, but they account for 27% of COVID-19 infections (Oregon Health Authority, 2021b; U.S. Census Bureau, 2020), and bear a higher prevalence of underlying conditions, such as type 2 diabetes and obesity, that place them at a higher risk for severe COVID-19 disease (Baquero et al., 2020; Davis et al., 2017; Poulson et al., 2021). Latino families with larger, multigenerational households are more vulnerable to infection, especially when family members are exposed to the virus as frontline essential workers in the food industry, factories, construction, and other essential services (Baquero et al., 2020; CDC, 2020; Dooling et al., 2021; Hall et al., 2019; Stokes & Patterson, 2020). Although they are disproportionately vulnerable, Latinos "account for only 5% of the vaccinations administered" as of April 9, 2021 (Oregon Health Authority, 2021a, p. 30).

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These biological, social, and structural determinants of COVID-19 health disparities resulted in policy conversations about how to make the national response accessible to and culturally appropriate for people of color (POC), including Latino communities. According to the CDC, "reports of high incidence and outbreaks within multiple critical infrastructure sectors illustrate the COVID-19 risk in these populations and the disproportionate impact of COVID-19 on workers who belong to racial and ethnic minority groups" (Dooling et al., 2021, p. 1658). As the CDC and state health departments strategize to distribute authorized COVID-19 vaccines, engaging vulnerable Latino communities in vaccine uptake requires accurate, trustworthy, and culturally resonant communication (CDC Advisory Committee on Immunization Practices, 2020a, 2020b).

Mistrust and fear of institutions challenge the rollout of COVID-19 vaccines among Latinos (Ojikutu et al., 2021). Historical experiences with structural discrimination may drive Latino communities to believe that the medical system will deny them quality health care. Among Latino Oregonians, medical mistrust and perceived discrimination were associated with dissatisfaction with the health care system (López-Cevallos et al., 2014; Oakley et al., 2019). Immigration laws and "public charge" policies may discourage recent migrants from seeking the health and social services they need (Lee et al., 2020). Effective community engagement and dissemination strategies are necessary to dispel mistrust.

This study explored vaccine perceptions among Latino mothers and youth to inform culturally centered strategies that engage the Latino family as a unit for disseminating accurate and culturally appropriate information about vaccines. This approach was guided by familismo-a concept used in health promotion to describe the family's centrality in defining obligation, providing social support, and making decisions (Sabogal et al., 1987). Research among Latinos on hepatitis C treatment (Davila et al., 2011), adolescent mental health (Piña-Watson et al., 2013), and breast cancer treatment (Sheppard et al., 2008) indicates the effectiveness of promoting health seeking as a way to protect the family. In Davila et al. (2011, p. e70), participants emphasized "commitment, loyalty, and obligation to family . . . as the underlying principles" guiding "health-related decision making and subsequent health behaviors."

Emphasizing the vaccine as a way to protect the family's well-being may effectively tap into collectivist social values (Smith-Morris et al., 2013). Dissemination campaigns may strongly consider the role of parent–youth communication and messaging that upholds the value of the family. We describe perceptions driving hesitancy for emerging COVID-19 vaccines among families and discuss family-centered strategies for dissemination.

Method

From July 2020 through January 2021, we conducted community-engaged research (Comfort et al., 2018) to address social

Impact Statement

COVID-19 has widened health disparities in Latino communities. Public health strategies to address mistrust of medical and government institutions are critically necessary to address these disparities. This study advances the literature on familismo and culture-centered health promotion by highlighting the importance of intergenerational communication in the Latino family unit for promoting COVID-19 vaccines, especially among frontline essential workers. Our findings suggest specific venues where accurate and culturally centered information may be disseminated. Promoting vaccines as a way to protect the family's health and social well-being may be an effective strategy for dissemination.

isolation among Latino youth participating in 4-H guided by a 45-person community advisory board (CAB) of Latino youth, parents, and health providers/educators. As part of this study, we conducted multimethod telephone interviews with Latino youth and parents, which included questions about their willingness to receive COVID-19 vaccines. Perspectives about vaccination were collected after emergency use authorization was granted for Pfizer-BioNTech and Moderna vaccines. Table 1 describes interview domains, sequencing, and timeline. The procedures used in this study were approved by the institutional review board at Oregon State University.

Participants

We recruited a community-driven convenience sample (Valerio et al., 2016) of Latino families by contacting parents through Oregon State University Extension and 4-H listservs. Flyers in English and Spanish mentioned the inclusion criteria. For youth, the criteria were to be 13 years of age and older, in Grades 9 to 12, self-identified as Latinx/Latino/Hispanic, and to be able to speak, read, and understand English. For parents, the criteria were to be parents of self-identified Latinx/Latino/Hispanic youth and to be able to speak, read, and understand either Spanish or English. In total, we distributed invitations to 140 parents, and 39 expressed interest in participating: 12 were ineligible; five decided not to participate; and 22 agreed to participate with their children; two parents enrolled two of their children (for a total of 24 children enrolled). Before they provided verbal consent and enrolled, we emailed parents the consent form, verbally explained the document, and assessed their understanding of the study. Children were invited and verbally assented to participate after their parents consented. Parents received a \$100 Amazon gift certificate as compensation for their time after the parent and child had completed their interviews.

Procedures

We conducted 90-minute semistructured telephone interviews with 22 mothers; 60-minute semistructured interviews with

Table 1. Sequence of Multimethod Community-Engaged Approach.	d Community-Engaged Approach.		
Instrument	Domains/questions	Participants	Timeline
Community Advisory Board (CAB) member consultation	Discuss instrument about responses to COVID-19 pandemic. Consultation on interview domains, format, interpretation, and analysis.	CAB of Latino youth, parents, and health providers/educators	July 2020–January 2021
Multimethods telephone interview	 Sociodemographic data, impact of COVID-19 on family health, history of access to health services 	22 mothers (19 interviewed in Spanish	August–December 2020 December 2020–lanuary 2021
Part 1: Coronavirus Health Impact Survey (Merikangas et al. 2020)	 Experiences with social isolation and strategies to cope with COVID-19 pandemic across the social determinants of health (i.e. work education health care acress to food) 	and three in English)	(after Moderna and Pfizer- BioNTech vaccines received
Part 2: Open-ended qualitative	Follow-up: What do you and your family think about the emerging COVID-19 vaccines? To probe this open-ended question, we explored the following: (1) sources of information, (2) trust of vaccine effectiveness and willingness to get vaccinated, and (3) access to the vaccine distribution. If the vaccine were offered to you today, would you take it?		
Semistructured telephone interview	Experiences with social isolation, family communication about health and COVID-19; self-esteem, allyship, community and civic engagement; and strategies to cope with COVID-19	24 youth	December 2020–January 2021

24 youth; and a follow-up conversation with mothers about vaccination perspectives (see Table 1). All closed- and openended responses were typed verbatim into Qualtrics during telephone interviews by the study coordinator (NV), a Latinx, young public health professional (State COVID-19 Emergency Line Specialist and community vaccine advisor) with close ties to several Latino community organizations that serve farmworkers and migrants in Oregon.

Data Analysis

We used immersion-crystallization to identify salient patterns in the data (Borkan, 1999). Data organization and coding were assisted by Dedoose software. We began this focused analysis on perceptions of emerging COVID-19 vaccines by structurally coding by interview questions and extracting responses about vaccines and related probes from interview transcripts. Next, the co-first authors (JG and NV) generated and agreed on a list of emergent subcodes, including the following: (1) vaccine knowledge (2) positive perceptions, (3) mistrust/desconfianza/myths, (4) side effects/risk, (5) sources of information, (6) "feeling like the experiment"/"guinea pigs," (7) proposed alternative, (8) prioritizing POC, (9) access, and (10) proposed solutions to promote vaccination. Analysis was grouped by type of participant (i.e., mothers and youth) rather than dyadically in tandem. Codes were applied by one coder (JG) to the data collected from each group. Next, we engaged in several cycles of individual review of code reports, created analytic memos for each group by thematic code to explore withingroup patterns, and held team meetings to compare these patterns across both groups. CAB members were engaged in interpreting results and as coauthors, contributing to the trustworthiness of our approach. We contextualized quotes by including age, occupation, and household size (HS).

Results

All participating families were Mexican or multiethnic Mexican. The mean HS was 5.23 (SD = 1.72), and 59% lived with frontline essential workers. Table 2 describes sociodemographic characteristics to contextualize our sample.

Through immersion–crystallization, our data were distilled into four main themes: (1) tempered optimism for vaccines to protect family well-being, (2) vaccine hesitancy rooted in mistrust of medical and political institutions, (3) intergenerational communication and informational support, and (4) meaningful community engagement to convey trustworthy information.

Tempered Optimism for Vaccines as a Way to Protect Family Well-Being

Several participants perceived vaccines as "a really good option" that will "help save people;" to "stop all of these deaths;" and one suggested that "they should be mandatory." As a 47-year-old mother explains,

It is good that there is a vaccine, it will end the pandemic ... There are some that don't believe in vaccines; those people are a risk for society ... I would get the vaccine and so would my family (Unemployed teacher, HS 6).

Several participants believed that essential workers should be prioritized, but they were concerned about access to health care to address potential side effects. In fact, lacking insurance was a barrier for 11 (50%) of the families in our study; of those with insurance, only five were covered by their employer, as shown in Table 3.

Because there is a limited supply, we have to prioritize who gets it; essential workforces get it . . . If there are long-term side effects, we could be causing a lot of health problems . . . I have the same concerns if they prioritize POC first . . . I'm concerned about prioritizing people that have difficult access to health care.

(37 years old, business owner/professional, HS 2)

Vaccination was valued to protect the family as a pathway for employment, for the health of vulnerable elders, and for youth to return to school.

Show them that the kids will be able to go back to school. Parents, they want their kids to go to school so they can feel like their kids are doing something good in life, because I think they haven't gone to school, they want their kids to go to school. If you tell them kids can go to school, if you get the vaccine, you can get a proper education. (15 years old, HS 10)

Optimistic mothers saw the vaccine as a tool to alleviate their families' suffering due to the pandemic, which included fear of seeking basic resources because of the "public charge" rule for those applying for legal residence. A 54-year-old mother explained,

We came to work and contribute to the economy. You always feel excluded; in our minds we don't feel like we're a part of the U.S. . . . Then, they tell us to use their services, but I'm afraid to use them. I'm scared to become a public charge.

The fear and isolation they experienced placed them in precarious situations in which some "only had cereal to eat" and others were on the brink of losing their housing. These families saw the vaccine as a way to safely return to work and recover some socioeconomic stability.

Hesitancy Rooted in Mistrust

Vaccine hesitancy was rooted in an interrelated lack of information about side effects and mistrust for the medical establishment. Several mothers expressed these concerns: They tell me to try it [vaccine] out, and if I die? In terms of the vaccine, I wouldn't take it. I don't trust it (*desconfio*). I need to read the information in terms of how it will help us, and the side effects. I would decide after. (39 years old, farmworker, HS 7)

I think there are consequences where some people will get bad side effects . . . We would probably wait before taking them . . . I'm a little worried, I think I need to make sure they are 100% safe. Like with flu shots, they gave me the vaccine, and I got the flu even worse. (45 years old, waitress, HS 5)

I am not very convinced. There is not enough information that is valid . . . they need to be honest about the side effects. Don't lie to us. (47 years old, farmworker, HS 5)

As shown in Table 3, 31.8% (7) did not trust doctors and 13.6% (3) named fear of encountering law enforcement/immigration as barriers to accessing health care. Several mothers worried that public health efforts to prioritize vaccination among Latino communities would be using them as "the guinea pigs (*Conejillos de Indias*)."

If Oregon gives vaccines to Latino people, I think it's good, but the people will think, "I have heard that we are the experiment, guinea pigs (*Conejillos de Indias*)." (48 years old, housekeeper, HS 6)

We always get the flu vaccination. I don't want to be the first one to get the COVID vaccination, but I will eventually get it for me and my son. I don't want to be an experiment. (50 years old, agricultural worker, HS 2)

A 54-year-old mother was "worried" because she believed that vaccines "didn't go through an extensive approval process. I didn't hear about them testing on animals or humans; I think we are the first ones." This reminded her of when she was a young girl:

The [Mexican] government sent *Mazapanes* [sweets] to give to kids. The kids were worried because the adults said, "don't eat the Mazapanes because they want to sterilize the people"—that the government wanted people to have fewer kids to address poverty. We believed it because there was a lot of propaganda; our families were big, like 8-10 kids, and no help at all for the economic situation. (Cleans offices, HS 5)

This fear that vaccines would lead to sterilization was echoed by other participants. Another mother relates mistrust of the COVID-19 vaccine to "myths" about sterilization that she heard when the HPV vaccine was released.

For the HPV vaccine, when they started, they said girls wouldn't have babies anymore; these are myths, things that people get stuck in their heads. (48 years old, housekeeper, HS 6)

Fears of sterilization may need to be addressed among Latino migrants who carry this historical trauma from their experiences with population control in Latin America.

Characteristic	n (%) or M (SD)
Mother age (years), ^a M (SD)	43.68 (4.63)
Mother marital status, ^a n (%)	
Married and living with spouse	16 (72.73)
Divorced	3 (13.64)
Single	3 (13.64)
Mother education level, ^a n (%)	
Elementary school	2 (9.09)
GED (General Educational Development)	3 (13.64)
Some high school	6 (27.27)
High school graduate	4 (18.18)
Some college	2 (9.09)
Technical/vocational training	I (4.55)
4-year degree	3 (13.63)
Graduate degree	2 (9.09)
Youth age (years), ^b M (SD)	15.92 (1.18)
Youth grade, ^b n (%)	
Grade 9	5 (20.83)
Grade 10	6 (25)
Grade 11	9 (37.5)
Grade 12	4 (16.67)
Youth gender identity, ^b n (%)	
Woman	12 (50)
Man	7 (29.17)
Nonbinary or trans or nonconforming gender expression	5 (20.83)
Family income (\$), ^a n (%)	
<10,000	l (4.55)
10,000–19,999	l (4.55)
20,000–29,999	3 (13.64)
30,000–39,999	5 (22.73)
40,000–49,999	3 (13.64)
50,000–59,999	l (4.55)
60,000–69,999	2 (9.09)
90,000–99,999	l (4.55)
100,000–149,999	l (4.55)
l don't know	4 (18.18)
Family city of residence population, ^{a.c} <i>n</i> (%)	
250,000+	l (4.55)
100,000–249,999	4 (18.18)
50,000–99,999	14 (63.64)
5,000–49,999	3 (13.64)
Family housing situation, ^a n (%)	
l rent or own an apartment/house but live with other families or individuals	2 (9.09)
l rent an apartment with my family only	II (50)
I own a home with my family only	8 (36.36)
Other: Temporary living situation/transnational family	l (4.55)
Household size, ^a M (SD)	5.23 (1.72)
Number of children, ^a M (SD)	3.50 (1.44)
Essential workers living in the home, an (%)	
Yes	13 (59.09)
No	9 (40.91)
Parents born outside the United States, ^a n (%)	20 (90.91)
Years living in the United States, M (SD)	19.42 (5.77)
Mexican identity, n (%)	21 (95.45)
Multiethnic Mexican family (Mexican and White), n (%)	l (4.55)

Note. Total N = 46 (mothers n = 22; youth n = 24). ^altem from data collected from mother. ^bItem from data collected from youth. Participants reported specific cities, which were aggregated according to population size to protect confidentiality of small sample.

Variable	n (%)
Insurance status ^a	
Insurance from work/employer	5 (22.73)
Medicaid (OHP or other state health insurance, Medi-Cal)	6 (27.27)
Other (emergency coverage programs, including community-based sliding scales)	6 (27.27)
No health insurance	5 (22.73)
Vhere health accessed in Oregon ^a	
Medical doctors (PCP)/clinics	21 (95.45)
Emergency room	14 (63.64)
Urgent care	12 (54.54)
Dentist	21 (95.45)
Hueseros (traditional bonesetter)	4 (18.18)
Herbalist	3 (13.64)
Sobadores (traditional masseuse)	7 (31.82)
Chiropractor	4 (18.18)
Massage	2 (9.09)
Physical therapy	I (4.55)
lanked barriers to access health care ^a	
Lack of insurance	II (50)
Takes too long to get appointment	11 (50)
Waiting room time too long	II (50)
Cost of care	10 (45.45)
Difficulty with referral	7 (31.82)
Do not trust doctor	7 (31.82)
Medication has too many side effects	7 (31.82)
Language barrier	7 (31.82)
Do not want to ask employer for time off	6 (27.27)
Do not want to miss work and lose income	6 (27.27)
Doctor or clinic has discriminated me	4 (18.18)
Hard to find <i>curanderos/hierberos/hueseros</i> (alternative care providers)	4 (18.18)
Lack of transportation	4 (18.18)
l get better on my own	, ,
	4 (18.18)
Fear of encountering law enforcement/immigration Child care	3 (13.64)
	3 (13.64)
Employer will not give time off	3 (13.64)
Loss of employment	3 (13.64)
Unsure of where to go	2 (9.09)
Distance to care	I (4.55)
No difficulty receiving care	I (4.55)
the vaccine were offered to you today, would you take it? ^a	
Willing to receive immediately/only positive	9 (40.91)
Hesitant/mixed	9 (40.91)
Unwilling to receive/only negative	I (4.55)
No response	3 (13.63)
Discussed health with parent in past week	19 (79.17)
Minutes spent discussing health with parent past week, ^b M (SD)	50.79 (59.19)
low comfortable talking to parent about health ^b	
Extremely uncomfortable	0 (0)
Somewhat uncomfortable	0 (0)
Neither comfortable nor comfortable	0 (0)
Somewhat comfortable	7 (29.17)
Extremely comfortable	17 (70.83)
low often did your child ask questions or talk about COVID-19?ª	
Never	0 (0)
Rarely	2 (9.09)
Occasionally	7 (31.82)
Often	5 (22.73)
Most of the time	8 (36.36)

Note. PCP = primary care physician; OHP = Oregon Health Plan.

altem from data collected from mother. bltem from data collected from youth.

Concerns about being test subjects stemmed from a lack of access to culturally resonant information explaining Phase 3 clinical trials and vaccine safety, as well as from the historically entrenched mistrust of government that was exacerbated by the complicated relationship between politics and science. As this 39-year-old mother explained,

When hearing about the plan to prioritize minorities, I'm afraid. We never know if Trump is involved. I think we need much more information and understand why we should be first [to receive the vaccine]. We are very resistant people. The OHA (Oregon Health Authority) are trying to help us be priority. Their intentions are good. But we have doubts about this President; we think about how Trump is. (Farmworker, HS 7)

This mistrust in the government was echoed by several youth concerned about conspiracy theories their parents heard through social media, including the misconception that a "tracking device" or "microchip" would be implanted with the vaccine.

I have had a conversation with my parents: so, it's kind of a weird situation she started talking about the bad part of Facebook and the microchips they put inside of you with the vaccine. (15 years old, HS 10)

Las Noticias (Spanish news) and Facebook is where my mom receives the news. I think the information is somewhat accurate. Honestly, sometimes people say fake news stuff, so sometimes she sees that. (14 years old, HS 6)

Intergenerational Communication and Informational Social Support

Intergenerational communication about vaccines within the family was central to "digesting" information, determining its trustworthiness, and decision making. In the past week, 79% of the youth had discussed health with their families for an average of 50 minutes (see Table 3).

My children are the ones that follow the news, they tell me things as they come out. I just want them to tell me the good news. My children knew that it started in China before it got worse here. They told me about it, and we didn't believe, and now it's a global pandemic. (39 years old, farmworker, HS 7)

I am a source of information for them; they don't even know how to work their phones. (17 years old, HS 5)

I have had that conversation about the vaccination with my kids ... I have a daughter that works in nursing homes, and she's getting it this month, they test her frequently; she lives with us. She's the meter for our family; that's how we know if we are infected. (46 years old, agricultural worker, HS 5)

My parents get their info from TV like Telemundo, Univision, all the Mexican news, on their phone . . . on Facebook, on YouTube.

I give them information from what I see, and from what I read, and they do pay attention to it. (15 years old, HS 5)

Three sets of participants had family members (i.e., children, siblings, and cousins) who worked or were studying to work in health care and could therefore explain emerging information.

I talked about it [vaccine] with my parents, like that when it comes out, when they should get it. My sister told them; she's a pre-med student; they know the info she gets is reliable; they believe her more than me. My parents were suspicious of the government and conspiracies about the COVID vaccine that it doesn't help or if it's a scam. I don't know, it's hard to convince Latino parents because they are so stubborn. (15 years old, HS 4)

Some lower resource families depended on the information their youth gathered from the internet and schools, as this 16-year-old explains.

We don't have cable, we [my brother and I] browse through the internet and our school provides weekly information, our only source of information for us is our family. We are keeping updated with news. Sometimes our parents don't believe us, we say this is from a credible doctor or university. (HS 7)

Trustworthy Information From Extrafamilial Community Engagement

To dispel mistrust, participants suggested informational campaigns that target venues with cultural significance, feature trusted community advocates, and acknowledge historical trauma.

I need to know why they want to vaccinate me first. They should explain this on television or radio. In stores, where we shop, on a poster explain why. If they did a vaccine clinic, I think we should do it at libraries or in one of the Catholic churches nearby. I think seeing health care workers getting it will help me. My mom would say the same: They should lead by example. It helps people like me who are afraid. (39 years old, farmworker, HS 7)

I think we should have informational conversations (*charlas informativas*) about vaccines so that there is less fear and to educate parents. It's dangerous that when we need to decide, we stay quiet. Fear paralyzes. (48 years old, housekeeper, HS 6)

The locations listed for effective dissemination of information about vaccines included schools, district welcome centers (*Centro de Bienvenida*), churches, public parks, large supermarkets, and Latino community health clinics. Table 3 shows the variety of providers where families accessed care, including *sobadores* and *hueseros* (traditional masseuse/ bonesetters). To improve trust, participants believed that information should be disseminated through well-known Latino leaders, advocacy groups, and community health workers (CHWs). I think to most people you need to set an example; you need to bear witness (*testimonios*). Have leadership say, "it's good," I think that's best, get people to give *testimonios*. I do think that prioritizing minority people will cause mistrust. I've heard that in the community. I'm a community leader. I do think it's good for us as minorities, but it will worry people. (46 years old, agricultural worker, HS 5).

I think they need to advertise that organizations are advocating starting now, don't wait. They should tell people about the vaccination committees, and who is in the committee, and what they are fighting for. It should be equitable . . . I think so many people will be more suspicious if they start with Latinos, an effect of mistrust. To encourage people to vaccinate, I think they need people from the community to do campaigns, people that are already involved, and we know they are working for the good of the community. (45 years old, cleaner, HS 3)

These narratives emphasized the need for Latino advocates, and they warned against prioritizing Latinos without clarity about why they are being prioritized. Interpreting these findings, a 24-year-old Mexican American CHW in our CAB stated,

CHWs build relationships with people in the community and make systems navigation more accessible, thus building trust and familiarity. For vaccine education and outreach, CHWs can find answers to the community's concerns, and then explain information, reducing language and academic barriers. Personal connections and stories are important. I find that when I talk about my experience being vaccinated, people who are wary about vaccines are more willing to seek the vaccine. In a world full of misinformation and government surveillance, the community, especially the undocumented population, relies on trusted CHWs and community advisors to find resources. In a global pandemic where access to health care is not guaranteed, it is understandable that there is vaccine hesitancy in historically marginalized groups.

Discussion

Our study indicates that the rollout of COVID-19 vaccines among Latino communities may be challenged by historical mistrust, suspicion of the unprecedented speed of vaccine development, and the range of information and misinformation they receive. Key gaps in health literacy included (1) knowledge about the function of Phase 3 clinical trials to directly address misconception that POC are being used as "guinea pigs," (2) interpretation of vaccine efficacy and safety to gain a realistic understanding of side effects and adverse events, (3) reflection on the relationship between politics and the production of scientific discovery, and (4) acknowledgement of racism and historical trauma (Stern, 2005). Similar mistrust was expressed in previous studies on human papillomavirus vaccines (HPV), suggesting the importance of addressing medical mistrust as a root barrier to vaccine acceptance among Latinos (Jaiswal, 2019; Katz et al., 2016; Kolar et al., 2015).

Participants identified several locations (e.g., schools, churches, Latino clinics, supermarkets), sources (e.g., radio, Facebook), and providers (e.g., sobabores/hueseros, Latino clinics) where accurate information may be disseminated. Churches and faith-based organizations have been used to deliver health services among Latinos (Allen et al., 2020), such as cancer screening (Allen et al., 2014) and obesity prevention (Derose et al., 2019), which indicates their potential as trusted venues for COVID-19 vaccination efforts. Interventions that provide materials for families to critically discuss vaccines may dispel the COVID-19 infodemic of misinformation and myths (Webb Hooper et al., 2021). Research indicates that youth can influence their parents' access to technology and digital media and reduce digital inequalities driven by gender, age, and socioeconomic disparities (Correa, 2015). Wholefamily learning that draws on cultural capital (e.g., games, heritage, cultural idioms) has been effective in intergenerational financial education programs (Robles, 2014). Similarly, culturally centered vaccine literacy may regard intergenerational communication in Latino families as a source of informational social support.

Our study reflects past findings about intergenerational solidarity and caregiver responsibility as key components of familismo (Ruiz & Ransford, 2012). An extensive literature describes the key role of Latino youth as language and cultural (Corona et al., 2012; Roche et al., 2015; Weisskirch & Alva, 2002) as well as data brokers (Vacca, 2019) who help their families navigate social services, institutions, and technology. Our study also suggests expanding the concept of familism by considering ethnic enclaves and community advisors as part of an extended kinship network (Smith-Morris et al., 2013). This supports the role of Latino advocates and CHWs for improving vaccine implementation and access. As suggested by research on HPV vaccination completion, a Latina mother-child education program coupled with CHW navigation may improve vaccination completion (Parra-Medina et al., 2015).

Participatory approaches that engage Latino families, lay health workers, and advocates can help address these gaps in health literacy, while repairing trust in both medical and government institutions (Peretz et al., 2020; Pérez-Escamilla et al., 2010; Schoch-Spana et al., 2020). In other areas of health education, prevention literacy based in critical consciousness theory advanced the adoption of the HIV prevention toolkit by drawing on cultural idioms and dismantling the top-down dynamic of information exchange that dominates health education (Parker et al., 2016). Rather than internalizing blame for vaccine hesitancy, as some participants did by calling Latinos "stubborn" and "resistant," the responsibility lies with inadequate engagement systems. Community-owned vaccine literacy that draws on familial and extrafamilial social connections to interpret information, build trust, and make decisions may improve equitable access to COVID-19 vaccines (Ojikutu et al., 2021; Parra-Medina et al., 2015).

Limitations

This study does not include a representative sample of the Latino population. Self-reported data were collected to describe the range of perceptions about COVID-19 vaccines. Although mothers and fathers were invited, we successfully enrolled only mothers. Social desirability bias (Larsen et al., 2020) during telephone interviews may have led to underreported mistrust for medical institutions because the interviewer was a known public health worker.

Conclusion

Meaningful community engagement of stakeholders in decision making and disseminating information will be central to dispelling mistrust and realizing the promise of COVID-19 vaccines for those most affected by the pandemic (Ojikutu et al., 2021). Interventions may target families for a learning exchange and authentic dialogue rather than a top-down exchange of information. By describing how information is organically processed in Latino families, we may develop culturally centered and trustworthy public health messaging about vaccines.

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References

- Allen, J. D., Pérez, J. E., Tom, L., Leyva, B., Diaz, D., & Torres, M. I. (2014). A pilot test of a church-based intervention to promote multiple cancer-screening behaviors among Latinas. *Journal* of Cancer Education, 29(1), 136–143. https://doi.org/10.1007/ s13187-013-0560-3
- Allen, J. D., Shelton, R. C., Kephart, L., Jandorf, L., Folta, S. C., & Knott, C. L. (2020). Organizational characteristics conducive to the implementation of health programs among Latino churches. *Implementation Science Communications*, 1(1), Article 62. https://doi.org/10.1186/s43058-020-00052-2
- Baquero, B., Gonzalez, C., Ramirez, M., Chavez Santos, E., & Ornelas, I. J. (2020). Understanding and addressing Latinx COVID-19 disparities in Washington State. *Health Education & Behavior*, 47(6), 845–849. https://doi. org/10.1177/1090198120963099
- Borkan, J. (1999). Immersion/crystallization. In B. Crabtree & W. L. Miller (Eds.), *Doing qualitative research* (pp. 179–194). Sage.

- CDC Advisory Committee on Immunization Practices. (2020a). Grading of Recommendations, Assessment, Development, and Evaluation (GRADE): Moderna COVID-19 vaccine. https:// www.cdc.gov/vaccines/acip/recs/grade/covid-19-modernavaccine.html
- CDC Advisory Committee on Immunization Practices. (2020b). Grading of Recommendations, Assessment, Development, and Evaluation (GRADE): Pfizer-BioNTech COVID-19 vaccine. https://www.cdc.gov/vaccines/acip/recs/grade/covid-19-pfizerbiontech-vaccine.html
- Centers for Disease Control and Prevention. (2020). *Health equity considerations and racial and ethnic minority groups*. https://www. cdc.gov/coronavirus/2019-ncov/community/health-equity/raceethnicity.html?CDC_AA_refVal=https%3A%2F%2Fwww. cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extraprecautions%2Fracial-ethnic-minorities.html
- Comfort, M., Raymond-Flesch, M., Auerswald, C., McGlone, L., Chavez, M., & Minnis, A. (2018). Community-engaged research with rural Latino adolescents: Design and implementation strategies to study the social determinants of health. *Gateways: International Journal of Community Research and Engagement*, 11(1), 90–108. https://doi.org/10.5130/ijcre. v11i1.5721
- Corona, R., Stevens, L. F., Halfond, R. W., Shaffer, C. M., Reid-Quiñones, K., & Gonzalez, T. (2012). A qualitative analysis of what Latino parents and adolescents think and feel about language brokering. *Journal of Child and Family Studies*, 21(5), 788–798. https://doi.org/10.1007/s10826-011-9536-2
- Correa, T. (2015). The power of youth: How the bottom-up technology transmission from children to parents is related to digital (in)equality. *International Journal of Communication*, 9, 1163–1186.
- Davila, Y. R., Reifsnider, E., & Pecina, I. (2011). Familismo: Influence on Hispanic health behaviors. *Applied Nursing Research*, 24(4), e67–e72. https://doi.org/10.1016/j.apnr.2009.12.003
- Davis, J., Penha, J., Mbowe, O., & Taira, D. A. (2017). Prevalence of single and multiple leading causes of death by race/ethnicity among US adults aged 60 to 79 years. *Preventing Chronic Disease*, 14, 160241. https://doi.org/10.5888/pcd14.160241
- Derose, K. P., Williams, M. V., Flórez, K. R., Griffin, B. A., Payán, D. D., Seelam, R., Branch, C. A., Hawes-Dawson, J., Mata, M. A., Whitley, M. D., & Wong, E. C. (2019). Eat, pray, move: A pilot cluster randomized controlled trial of a multilevel church-based intervention to address obesity among African Americans and Latinos. *American Journal of Health Promotion*, 33(4), 586–596. https://doi.org/10.1177/ 0890117118813333
- Dooling, K., Marin, M., Wallace, M., McClung, N., Chamberland, M., Lee, G. M., Talbot, H. K., Romero, J. R., Bell, B. P., & Oliver, S. E. (2021). The Advisory Committee on Immunization Practices' updated interim recommendation for allocation of COVID-19 vaccine—United States, December 2020. *MMWR Morbidity and Mortality Weekly Report*, 69(5152), 1657–1660. https://doi.org/10.15585/mmwr.mm695152e2
- Hall, M., Musick, K., & Yi, Y. (2019). Living arrangements and household complexity among undocumented immigrants. *Population and Development Review*, 45(1), 81–101. https:// doi.org/10.1111/padr.12227
- Jaiswal, J. (2019). Whose responsibility is it to dismantle medical mistrust? Future directions for researchers and health care

providers. *Behavioral Medicine*, 45(2), 188–196. https://doi. org/10.1080/08964289.2019.1630357

- Katz, I. T., Bogart, L. M., Fu, C. M., Liu, Y., Cox, J. E., Samuels, R. C., Chase, T., Schubert, P., & Schuster, M. A. (2016). Barriers to HPV immunization among Blacks and Latinos: A qualitative analysis of caregivers, adolescents, and providers. *BMC Public Health*, 16(1), Article 874. https://doi.org/10.1186/s12889-016-3529-4
- Kolar, S. K., Wheldon, C., Hernandez, N. D., Young, L., Romero-Daza, N., & Daley, E. M. (2015). Human papillomavirus vaccine knowledge and attitudes, preventative health behaviors, and medical mistrust among a racially and ethnically diverse sample of college women. *Journal of Racial and Ethnic Health Disparities*, 2(1), 77–85. https://doi.org/10.1007/s40615-014-0050-2
- Larsen, M., Nyrup, J., & Petersen, M. B. (2020). Do survey estimates of the public's compliance with COVID-19 regulations suffer from social desirability bias? *Journal of Behavioral Public Administration*, 3(2), 1–9. https://doi.org/10.30636/ jbpa.32.164
- Lee, J., Bruce, J., & Wang, N. E. (2020). Opportunities for supporting Latino immigrants in emergency and ambulatory care settings. *Journal of Community Health*, 46, 494–501. https:// doi.org/10.1007/s10900-020-00889-7
- López-Cevallos, D. F., Harvey, S. M., & Warren, J. T. (2014). Medical mistrust, perceived discrimination, and satisfaction with health care among young-adult rural Latinos: Satisfaction with care among rural Latinos. *Journal of Rural Health*, 30(4), 344–351. https://doi.org/10.1111/jrh.12063
- Merikangas, K., Milham, M., & Stringaris, A. (2020). Coronavirus Health Impact Survey (CRISIS) V0.3: Parent/caregiver baseline form: Current form (Spanish version:: Formulario Breve de Línea Base para Padres/Cuidadores). https://www.nlm.nih. gov/dr2/CRISIS_Parent_Caregiver_Baseline_Current_Form_ V0.3.pdf
- Oakley, L. P., López-Cevallos, D. F., & Harvey, S. M. (2019). The association of cultural and structural factors with perceived medical mistrust among young adult Latinos in rural Oregon. *Behavioral Medicine*, 45(2), 118–127. https://doi.org/10.1080/ 08964289.2019.1590799
- Ojikutu, B. O., Stephenson, K. E., Mayer, K. H., & Emmons, K. M. (2021). Building trust in COVID-19 vaccines and beyond through authentic community investment. *American Journal* of Public Health, 111(3), 366–368. https://doi.org/10.2105/ AJPH.2020.306087
- Oregon Health Authority. (2021a). COVID-19 health talking points. http://www.oregon.gov/oha/PH/PREPAREDNESS/PARTNERS/ Documents/COVID-19-Health-Talking-Points.docx
- Oregon Health Authority. (2021b). COVID-19 weekly report. https:// www.oregon.gov/oha/covid19/Documents/DataReports/ COVID-19-Weekly-Report-2021-1-13-FINAL.pdf
- Parker, R. G., Perez-Brumer, A., Garcia, J., Gavigan, K., Ramirez, A., Milnor, J., & Terto, V. (2016). Prevention literacy: Community-based advocacy for access and ownership of the HIV prevention toolkit. *Journal of the International AIDS Society*, 19(1), 21092. https://doi.org/10.7448/IAS.19 .1.21092
- Parra-Medina, D., Morales-Campos, D. Y., Mojica, C., & Ramirez, A. G. (2015). Promotora outreach, education and navigation support for HPV vaccination to Hispanic women with

unvaccinated daughters. *Journal of Cancer Education*, 30(2), 353–359. https://doi.org/10.1007/s13187-014-0680-4

- Peretz, P. J., Islam, N., & Matiz, L. A. (2020). Community health workers and COVID-19: Addressing social determinants of health in times of crisis and beyond. *New England Journal of Medicine*, 383(19), e108. https://doi.org/10.1056/ NEJMp2022641
- Pérez-Escamilla, R., Garcia, J., & Song, D. (2010). Health care access among Hispanic immigrants: ¿Alguien está escuchando? [Is anybody listening?]. *NAPA Bulletin*, 34(1), 47–67. https:// doi.org/10.1111/j.1556-4797.2010.01051.x
- Piña-Watson, B., Ojeda, L., Castellon, N. E., & Dornhecker, M. (2013). Familismo, ethnic identity, and bicultural stress as predictors of Mexican American adolescents' positive psychological functioning. *Journal of Latina/o Psychology*, 1(4), 204–217. https://doi.org/10.1037/lat0000006
- Poulson, M., Neufeld, M., Geary, A., Kenzik, K., Sanchez, S. E., Dechert, T., & Kimball, S. (2021). Intersectional disparities among Hispanic groups in COVID-19 outcomes. *Journal* of *Immigrant and Minority Health*, 23(1), 4–10. https://doi. org/10.1007/s10903-020-01111-5
- Robles, B. (2014). Economic inclusion and financial education in culturally diverse communities: Leveraging cultural capital and whole-family learning. *New Directions for Adult and Continuing Education*, 2014(141), 57–66. https://doi.org/10.1002/ace.20085
- Roche, K. M., Lambert, S. F., Ghazarian, S. R., & Little, T. D. (2015). Adolescent language brokering in diverse contexts: Associations with parenting and parent–youth relationships in a new immigrant destination area. *Journal of Youth and Adolescence*, 44(1), 77–89. https://doi.org/10.1007/s10964-014-0154-3
- Ruiz, M. E., & Ransford, H. E. (2012). Latino elders reframing familismo: Implications for health and caregiving support. *Journal of Cultural Diversity*, 19(2), 50–57.
- Sabogal, F., Marín, G., Otero-Sabogal, R., Marín, B. V., & Perez-Stable, E. J. (1987). Hispanic familism and acculturation: What changes and what doesn't? *Hispanic Journal of Behavioral Sciences*, 9(4), 397–412. https://doi.org/10.1177 /07399863870094003
- Schoch-Spana, M., Brunson, E. K., Long, R., Ruth, A., Ravi, S. J., Trotochaud, M., Borio, L., Brewer, J., Buccina, J., Connell, N., Hall, L. L., Kass, N., Kirkland, A., Koonin, L., Larson, H., Lu, B. F., Omer, S. B., Orenstein, W. A., Poland, G. A., . . . White, A. (2020). The public's role in COVID-19 vaccination: Human-centered recommendations to enhance pandemic vaccine awareness, access, and acceptance in the United States. *Vaccine*. Advance online publication. https://doi.org/10.1016/j. vaccine.2020.10.059
- Sheppard, V. B., Figueiredo, M., Cañar, J., Goodman, M., Caicedo, L., Kaufman, A., Norling, G., & Mandelblatt, J. (2008). Latina a Latina: Developing a breast cancer decision support intervention. *Psycho-Oncology*, *17*(4), 383–391. https://doi. org/10.1002/pon.1239
- Smith-Morris, C., Morales-Campos, D., Alvarez, E. A. C., & Turner, M. (2013). An anthropology of familismo: on narratives and description of Mexican immigrants. *Hispanic Journal of Behavioral Sciences*, 35(1), 35–60. https://doi. org/10.1177/0739986312459508
- Stern, A. M. (2005). Sterilized in the name of public health: Race, immigration, and reproductive control in modern California.

American Journal of Public Health, 95(7), 1128–1138. https://doi.org/10.2105/AJPH.2004.041608

- Stokes, J. E., & Patterson, S. E. (2020). Intergenerational relationships, family caregiving policy, and COVID-19 in the United States. *Journal of Aging & Social Policy*, 32(4–5), 416–424. https://doi.org/10.1080/08959420.2020.1770031
- U.S. Census Bureau. (2020). *QuickFacts: Oregon*. https://www.census.gov/quickfacts/OR?
- Vacca, R. (2019). Brokering data: Co-designing technology with Latina teens to support communication with parents: Leveraging cultural practices of Latinx youth through co-design. In *Proceedings* of the 18th ACM International Conference on Interaction Design and Children (pp. 197–207). Association for Computing Machinery. https://doi.org/10.1145/3311927.3323142
- Valerio, M. A., Rodriguez, N., Winkler, P., Lopez, J., Dennison, M., Liang, Y., & Turner, B. J. (2016). Comparing two sampling methods to engage hard-to-reach communities in research priority setting. *BMC Medical Research Methodology*, 16(1), Article 146. https://doi.org/10.1186/s12874-016-0242-z
- Webb Hooper, M., Nápoles, A. M., & Pérez-Stable, E. J. (2021). No populations left behind: Vaccine hesitancy and equitable diffusion of effective COVID-19 vaccines. *Journal of General Internal Medicine*, 36, 2130–2133. https://doi.org/10.1007/ s11606-021-06698-5
- Weisskirch, R. S., & Alva, S. A. (2002). Language brokering and the acculturation of Latino children. *Hispanic Journal of Behavioral Sciences*, 24(3), 369–378. https://doi.org/10.1177 /0739986302024003007