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ABSTRACT

Objective: To describe the perceptions of pharmacist-delivered vaccination services among community members that live in a diverse urban metropolitan area and to identify potential strategies to improve the use of vaccines provided by pharmacists.

Design: Qualitative study. **Setting:** Metropolitan urban diverse community in Wayne County, MI. **Participants:** Individuals 50 years of age and older that reside in a defined urban metropolitan community. **Intervention:** Four, 45-minute, focus group discussions were conducted to gather the experiences and perceptions of participants around pharmacists that immunize. A focus group guide was developed to facilitate focus group sessions. **Main Outcome Measures:** Focus group discussions were audio-recorded and transcribed. Content analysis was used to analyze data and identify relevant themes. **Results:** Three main themes were identified related to the use of pharmacist-delivered vaccination services: trust with vaccine providers, interaction with pharmacy personnel, and the factor of accessibility. **Conclusion:** Study participants expressed views that will guide the development of interventions aimed to reduce disparities in vaccine utilization. It is suggested that future efforts improve accessibility to pharmacy-delivered vaccines in this community and enhance the interaction between patients and pharmacists.

Keywords: pharmacists, vaccinations, pharmacist-delivered vaccinations, patient-pharmacist relationship, perceptions, qualitative research

INTRODUCTION

Disparities in the use of vaccines that prevent influenza and pneumococcal diseases among ethnic minority adults have been well documented.¹⁻⁵ In 2011, it was reported that 57.3% of adults aged ≥ 65 years in African-American communities and 63.3% in Hispanic communities were immunized against

influenza compared to the national median of 70.1%.¹ Similarly, pneumococcal vaccination rates were lower in both the Hispanic (58.5%) and African-American (59.7%) communities than the national median (68.5%).¹ Several factors associated with these disparities include lack of access to vaccinations, provider-patient relationships, negative attitude(s) toward immunizations, and patient education level.¹⁻³

Nationally, the inclusion of pharmacists as immunization providers helped to improve vaccination rates.^{6,7} Patients reported high satisfaction with pharmacy-based

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immunizations due to decreased wait times and improved access at community pharmacy locations.^{8,9} Murphy and colleagues reported that during the 2009-10 influenza season, more than one-third of influenza immunizations were delivered by pharmacists in medically underserved areas (MUAs).¹⁰ The promotion of pharmacy-based immunizations expanded in the 2000s aiming to increase immunization rates toward recommended goals.

Although positive trends influenced legislative bodies in all 50 states to allow pharmacists to vaccinate in varying capacities, the impact was not demonstrated equally.^{8,11-13} Wang and colleagues reported that among community pharmacy patrons, African Americans were less likely to receive influenza vaccinations than white individuals.¹² Importantly, one study concluded that residents of Wayne County, MI, which has a higher proportion of African-American residents compared to the rest of the state, have less access to pharmacy-based immunization services compared to individuals in other demographics.¹³ This particular study is relevant to our research group which consists of pharmacists and community leaders that practice and work in the Wayne County, MI. Our ultimate goal is to improve use of vaccines in our community. The literature suggests multi-level culturally appropriate interventions are necessary to improve vaccine use in ethnic minority communities.^{3,14,15}

OBJECTIVES

In our attempt to begin the process of establishing an intervention, we developed a study to: 1) identify and describe the barriers to the use of pharmacist-delivered vaccinations among residents in the east Metropolitan Detroit area and 2) examine community residents' perceptions of pharmacists as providers of vaccinations.

METHODS

Design

This was an exploratory qualitative study conducted using focus group discussions. The study was approved by the Wayne State University (WSU) Institutional Review Board (IRB).

Investigators used the ecological health belief model to develop the study aims and the focus group guide (Appendix A). This model describes how internal and external factors provide support and nonsupport for health behavior change (Figure 1).¹⁶ It is also a model that displays the interplay between the individual and various other levels surrounding the individual that influence health and wellness behaviors. We devised our data collection script based of the individual and community domain of the ecological health belief model. We also focused on community organizations and services such as pharmacy providers of vaccines and possible

interventions that could be developed collaboratively between community members and pharmacists.

Figure 1 Social Ecological Model¹⁶



Setting and subjects

Adults aged ≥ 50 years of age that resided in East Metropolitan Detroit, Harper Woods, and Grosse Pointe, MI were eligible to participate. These areas were selected because they represent communities located within a 10-mile radius around the principal investigator's practice site and pharmacy patrons live in these areas. These communities are within Wayne County, MI and are ethnically diverse. During the time of the study it was reported that African-Americans represent 45% and 82% of Harper Woods, MI and Detroit, MI respectively.¹⁷ Additionally, a list of community-based organizations were compiled from a google search near the practice site to identify potential partners that would host focus group discussions. The principal investigator called each organization to discuss the project and two expressed interest in participating by holding focus groups discussions. Participants were recruited from Friends of Parkside, a community-based organization located in a low-income housing community in Detroit, MI and the Harper Woods Public Library located in Harper Woods, MI. In each location, flyers with detailed information about the study were posted to stimulate interest. In addition, study investigators were available for a short period of time at both locations to recruit participants and answer questions regarding the study. Individuals interested in participating called an investigator to sign up for a focus group discussion. All participants were required to be fluent in the English language.

An experienced medical anthropologist and co-investigator facilitated all four focus groups between April and November 2014. Another investigator observed and took notes during the focus group sessions. Six to nine individuals participated in each focus group and all of them were invited to complete a demographic survey prior to the initiation of each focus group session. The sessions were audio-recorded and ranged from 45 to 80 minutes. A focus group guide was developed to facilitate discussion about participant views on vaccines,

pharmacists as immunizers and potential strategies that might impact use of vaccines in the community (Appendix A). Investigators focused on influenza and pneumococcal vaccines during focus group discussions because pharmacy-based immunization programs traditionally began with the offering these two types of vaccines in the late 1990's and early 2000's. We also thought these vaccines would be most familiar to study participants. Participants 50 years of age and older were selected because that demographic was the original target of pharmacy-based influenza clinics until the Advisory Committee on Immunization Practices (ACIP) expanded recommendations to include all adults in 2010.¹⁸ Two focus group discussions took place onsite at the Friends of Parkside community building and two were conducted at the Harper Woods Public Library community center. Participants were offered lunch and a \$20 gift card to a local grocery store. All participants signed an informed consent form.

Data Analyses

Each audio-recorded session was transcribed verbatim by an external professional company. Participant personal identifiers and names of pharmacy companies were not included in the written text. Written transcripts were coded and analyzed using content analysis as described by Halcomb et al.¹⁹ Initially, two investigators compared written notes taken during each focus group session with transcribed text and created preliminary themes. To refine the themes, the same two investigators reviewed the transcripts independently and came together at a later time to reconcile final themes. All investigators read each transcript line-by-line to code each phrase or statement and extracted major themes and quotations. A final meeting was conducted with all investigators to discuss the analysis of themes.

RESULTS

Table 1 Study Demographics

Characteristics	N=30
Female Gender	17 (57%)
Age	
50 to 54	3 (10%)
55 to 64	12 (40%)
65 to 70	8 (27%)
>70	7 (23%)
Ethnicity	
African-American	18 (60%)
White	10 (33%)
Two or more races	1 (3.3%)
Greater than a bachelor's degree	5 (17%)
Time lived in the community	
6-10 years	5 (17%)
10-20 years	5 (17%)
>20 years	20 (66%)

A total of 30 individuals participated, majority between 55 and 64 years of age (Table 1). More participants were women (57%) and individuals identified themselves as African-American (n=18), two or more races (n=1), or white (n=10). One participant did not indicate ethnicity on the demographic survey. Sixty-six percent of participants reported that they lived in the East Detroit community for more than 20 years. Additionally, 5 individuals earned a bachelor's degree or more of education.

Analysis of transcripts led to the emergence of 3 major themes: 1) trust with vaccine providers, 2) interaction with pharmacy personnel, 3) the factor of accessibility. Based off themes and supporting quotes, we will discuss potential interventions in the discussion section. Each theme is discussed in the following section.

Trust with vaccine providers

Despite the typical arguments that lead individuals to reject use of vaccinations, such as concern about contracting influenza or pneumonia and experiencing adverse effects, several participants mentioned how their personal physician's endorsement of vaccinations led them to become vaccinated. We found that individuals went to the same physician for multiple decades and highly trusted his or her advice on the use of preventative health services. One individual mentioned how a conversation with his physician influenced his decision to become vaccinated:

"My doctor told me that I should get it. He don't force it upon me. He said I should get it, so I know it's benefiting me."

Another participant explained how she was undecided about receiving the vaccine. She asked friends and family members about the vaccine and they mentioned the risk of side effects. Once she talked to her physician she gained a better understanding of how vaccines work which influenced her decision to receive vaccine:

"I think they should break that down so people can understand the real deal and so they can understand it. That's the only reason I started taking my flu shot because I had to really understand it. I take it now."

When asked if they would talk to a pharmacist or physician about vaccines, patients mentioned they would rather talk to their physicians:

"If you had a choice between a doctor and a pharmacist coming to talk to you, I do my doctor. They study medicine. He's studied a little bit hard and for longer too. He's got the depths of things, you know, I do the doctor."

"My most reliable source of information about vaccines in through my doctor."

When participants were asked about their experience conversing with pharmacists about influenza or pneumococcal vaccines, participants had various responses. Some individuals explained that while picking up a prescription from the pharmacy, someone would ask if they needed the flu shot. Participants expressed positive sentiments about this service because it was quick and convenient, avoiding the need to make an additional trip to their doctor's office to receive the vaccine. Other participants expressed strong views against pharmacists vaccinating patients. One focus group participant mentioned that the pharmacist does not have enough information to adequately assess the need for an influenza vaccine:

"I don't think pharmacies should give a flu shot. And I think so because you don't have my records there. Unless it's [a] prescription from the doctor, I don't think that a pharmacist should be giving out flu shots if they don't have your records right there with them."

Another individual cited the lack of trust as a reason not to go to a pharmacist:

"It's a judgment call. I'm not going to a drug store. Anybody [back there] could give me a shot, they might not know what they're doing. I just don't trust them that much. I look at my doctor."

Interaction with pharmacy personnel

The second theme that emerged was how participants felt it was difficult to develop a relationship with pharmacists. This became clear as investigators questioned about the interaction between pharmacists and participants on vaccine-related issues. Participants from multiple focus group sessions presented consistent views that workers in the pharmacy change too often. Individuals may get to know one pharmacist in their neighborhood during one visit, and then that person would be replaced with someone new at a later visit. These changes created negative feelings about the pharmacy and lack of trust between the pharmacist and the individuals in the focus group sessions.

"I have nothing against [my pharmacy], I keep my prescriptions there, but you just get to know a pharmacist and [then] they move them on [to] someplace else, and I've never had one before or after her that took that kind of interest."

"The problem that I find with my pharmacy is that they changed their actual pharmacist person what (like) every 30 days or every ten days or something like that."

"They actually rotate, the whole store, the pharmacists in the store, they rotate them out. And you won't see him for another two or three months, maybe four months, until he rotates back into that store."

"You know, when I go in to pick up my prescription I may see this person working here, then go back tomorrow [and] it's a different person working there. You know, I'm not

going to complain about that, I don't have relationship with the pharmacy."

As focus group members discussed reasons why they personally converse with a pharmacist, medication-related questions topped the list of reasons why participants consulted with a pharmacist:

"I go to [my pharmacy] a lot, and if I have a question medically, I'll go over to the pharmacist and I'll ask them. I ask them sometime the differences from one medication to another, and they pretty much explained it to me."

It was apparent that study participants viewed pharmacists more as experts in medications rather than providers of vaccines. The vast amounts of information related to health and medications available on the internet and television overwhelmed participants. They also talk to friends and family members about medications and trust various sources of information. Despite the use of multiple sources for medical advice among participants, they overwhelmingly expressed that pharmacists are a high quality resource that can reconcile medication-related information:

"If I had any questions about my meds I would ask the pharmacist because my expectation is that they are familiar with the [Physicians' Desk Reference] PDR."

"I ask the pharmacist about interactions. Should I take it with food or without. That kind of thing basically."

However, some participants did request additional knowledge from pharmacies, yet were not very specific in what information would be useful. It was evident that there were knowledge gaps with some participants. One individual did specifically request more information regarding the efficacy of vaccines:

"I would like to see statistics on how it is really helping everybody. I would like to see that."

Role of accessibility

We asked participants how pharmacy can improve the use of vaccinations in the community. Participants thought that pharmacy brings a convenient factor that makes it easy to become vaccinated:

"I went to the pharmacy for the flu shot because I was there and they was giving then and it was convenient."

"Well, [the] pharmacist by far is more accessible [than my primary care provider]."

Although accessibility was a big factor for going to the pharmacy for a vaccination, not all participants felt they had accessibility to pharmacist-delivered vaccinations. A woman at Friends of Parkside mentioned the lack of access in her community:

“But some pharmacies don’t give out vaccine[s]. At this pharmacy over here in the shopping center, they don’t (give out vaccines).”

Another woman mentioned how a service used to come to the apartment complex to provide vaccines. This service stopped a few years ago which made it difficult for some to get a vaccination:

“Okay, years ago they used to do vaccines at Parkside. And we wondered why they stopped. A lot of people don’t have transportation who stay out here, and it’s much easier to walk up on Parkside.”

DISCUSSION

Disparities in the use of preventative health services such as vaccines in ethnic minority communities require stakeholders, including pharmacists, to assist in the creation of interventions to close the gaps. The ultimate goal of this research was to discover the needs of participants and generate ideas collaboratively to inform the development of a culturally appropriate intervention for area residents. It was not expected that this research project would lead to an ultimate solution to improve vaccination rates. There are many factors beyond the scope of this project and the resources available to conduct that type of analysis. Our work was to develop a discussion with individuals that reside in the community and form relationships. Additionally, reporting the perspectives of patients is missing in the literature and as Wenger et al. concluded, patient perspectives enhance understanding as to why there is a disparity to use of pharmacy services.²⁰ To begin the process, researchers used focus group discussions to elicit opinions about the use of influenza and pneumococcal vaccines, and the roles pharmacists play in delivering these vaccines.

Discussions during the focus groups highlighted how the provision of information is important in impacting vaccination decisions. Study participants that were originally indecisive about using a vaccine commented how a provider, usually a family physician, was able to effectively address key concerns and knowledge gaps that resulted in a person becoming vaccinated. Literature supports that primary physicians are commonly discussing issues of preventative medicine with their patients due to better awareness of vaccine needs, and enhanced insurance coverage of preventative health services.^{21,22} These points suggest pharmacy personnel modify messages communicated about vaccines and communication strategies to improve use of pharmacy-based immunization services. Communication styles that resemble patient and physician interactions may be more familiar to these patients and adequately address concerns about vaccines.

Findings from this work suggest that adults consider pharmacists to be more helpful addressing medication use issues rather than administering vaccines. Considering the recent evolution of pharmacy practice to include the provision of vaccine delivery, it is not surprising that some adults 50 years old and older were unsure as to whether pharmacists should provide these additional services. Many patients still continue to think of pharmacists as individuals that “count, pour, lick, and stick” and they do not see them conducting other patient care services.²³ Although participants were uncomfortable with pharmacists vaccinating, these are services patients can witness in the pharmacy which may enhance the professional image of pharmacists. Future work should address strategies to improve the understanding of pharmacists’ ability to provide vaccines.

According to participants, the change of personnel in the pharmacy makes it challenging to develop a relationship with a community pharmacist. In multiple focus group sessions, participants expressed discontent with pharmacies that displace pharmacists too often. A few participants explained pharmacists changed monthly, while some mentioned that personnel change weekly within the pharmacy. Keshishian and colleagues discussed how community dwelling adults in an urban metropolitan community perceived a better quality relationship with physicians than pharmacists due to multiple factors.²⁴ They reported ecological factors such as the presences of busier pharmacies in metropolitan communities where patients must actively seek consultation to talk with a pharmacist as a contributor to the finding. Additionally, pharmacists that practice in these communities may not embrace the patient-centered approach due to being understaffed and heavy workloads. When a patient may not be able to distinguish the pharmacist from the pharmacy technician, the perception of changing pharmacy staff too often may impact the pharmacist-patient relationship.²⁴ Better relationships with physicians than pharmacists may also explain why some participants in our study felt physicians were able to influence their vaccination decisions more than pharmacists. As reported by Worley-Louis et al., older adult perceptions that the pharmacist is participating and creating a patient-centered relationship correlates positively with medication-related outcome expectations and influences patient medication beliefs.²⁵ Improved patient-pharmacist relationships as perceived by older adults may help pharmacists become more influential in vaccination decisions among patients. Further work should measure how often pharmacies in urban communities change pharmacy personnel and how that impacts the patient-pharmacist relationship. Future projects should also determine the relationship quality between patients and pharmacists in these types of communities and facilitators and barriers to good quality relationships as perceived by patients.

Although it is commonly stated that pharmacists are the most accessible health care provider, study participants perceived pharmacist-delivered vaccination services to be limited in their community. Ericsson and colleagues performed a descriptive analysis in the same community as our study and concluded that a disparity in access to pharmacy-based immunization services based on race and household income exists.¹³ Our study confirms that area residents perceive this to be the case as well. Future work should determine why some pharmacies in this community do not offer vaccinations. Study participants that utilized pharmacy-based immunization services expressed positive comments about the service and appreciated the convenience of the service.

In addition, it was evident that there was a knowledge gap in the participants' views of vaccines and vaccine related side effects. This may prompt the idea of vaccine counseling, or having the pharmacist provide more vaccine related information to patients through advertising and handwritten information. This may help increase trust with pharmacists, while expanding the pharmacist's role from the patient perspective to fulfill more than just medication-related needs.

LIMITATIONS

Data generated represent the opinion of a small sample of individuals that volunteered to participate in the study. Readers should also consider the demographic characteristics of study participants including age. This group may be more resistant to change and more familiar with physician based services compared to younger patient populations. Participants in focus group sessions varied by ethnic groups and resided in a few specific areas selected for the study. Study participation was not limited to certain ethnic groups and was more inclusive of all people that lived in the community at the time of the study. Consequently, results are limited to their experiences and views of topic discussions. Additionally, analyses of results were conducted by researchers who do not reside in the community. Extensive efforts were taken to conduct culturally appropriate focus groups and analyses as suggested by Halcomb et al., but investigators' interpretation of data may have introduced bias in findings.¹⁹ Further studies involving larger and more diverse populations are necessary to confirm our results.

CONCLUSION

Study participants expressed valuable insights and thoughts about pharmacists providing vaccinations in their community. Examinations of these views are the first step in developing multi-level interventions aimed to improve use of pharmacist-delivered vaccinations. Results suggest that future interventions consider factors that impact the interaction between patients and pharmacy personnel and accessibility

to pharmacist-delivered vaccinations. Authors and community practitioners that conducted this project plan to use these results to develop future projects and interventions to improve use of pharmacist-delivered vaccinations.

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APPENDIX A
Data Collection Script

Project Title: Promoting partnership and engagement in a diverse urban community to describe community residents' perceptions of pharmacists as immunizers.

The facilitator will focus on several key questions in each group. The questions are below:

1. Tell us what you know about the flu shot?
2. Tell us what you know about the pneumonia shot?
3. Has anyone ever had the flu or pneumonia shot? Where did you get the shot(s)? Did anyone recommend you get the shot(s)? What was your experience?
4. Do you know others that have received a flu or pneumonia shot? Where did they go? What did they tell you about their experience?
5. Tell us what you know about pharmacists giving shots? What do you think about that? Should pharmacists provide this service?
6. Does anyone have an experience with a pharmacist giving them a flu shot or pneumonia shot (or any shot)? What was your experience? Do you know others that have gone to a pharmacist for a shot? What did they say about their experience?
7. What would prevent you from getting your flu shot? Or if you do not want to get it why?
8. What would prevent you from getting your pneumonia shot? Or if you do not want to get it why?
9. The number of people that get their shot in the country and Michigan can improve. Why do you think people do not go to get their shots (flu and pneumonia)?
10. How can pharmacists help teach people about flu and pneumonia shots in your community?
11. Who could pharmacists team up with in your community to help people learn about vaccines such as flu and/or pneumonia shots?
12. Who could pharmacists team up with in your community to provide these vaccines (outside of the pharmacy)?