African American Elders' Perceptions of the Influenza Vaccine in Durham, North Carolina

Sohini Sengupta, PhD, MPH, Giselle Corbie-Smith, MD, Angela Thrasher, MPH, and Ronald P. Strauss, DMD, PhD

Abstract

Objective: *To qualitatively explore community perceptions among elderly African Americans about what makes it easy or difficult to get vaccinated for influenza.*

Sample: *A total of 28 elderly (age 65 years or older) African Americans living in Durham County, North Carolina, participated in this study.*

Data Collection Methods: *In-person, open-ended interviews were conducted to perform a content analysis on factors influencing influenza vaccination use, or lack thereof, in an elderly African American population. Interviews were conducted in participants' homes and at senior centers in Durham County, North Carolina. Interviews were transcribed and analyzed to identify themes.*

Principal Findings: *Ten facilitators to encourage obtaining vaccinations were identified, including reminders from a doctor to get the influenza vaccination and the perception that the vaccination prevents influenza. Eight barriers were identified, including community perceptions to not get vaccinated and the fear of getting the "flu" from the vaccination itself.*

Conclusion/Relevance: *The study identified community perceptions of what makes it easy or difficult for elderly African Americans to get vaccinated for influenza. The findings will be useful to design and implement programs targeted to improving vaccination rates in health clinics or private physician's offices since the elderly are more likely to receive influenza vaccinations in primary care settings.*

Key Words: *Aging, Access to Care, Immunization/Vaccines, African Americans/Blacks, Qualitative Research*

Introduction

Every year influenza epidemics cause more than 20,000 deaths and 110,000 hospitalizations in the United States.[1-4] Specific target groups, such as elderly persons (≥ 65 years), young children, and persons with underlying diseases (who are often elderly) are at highest risk of influenza-related complications and hospitalizations.[5] Mortality associated with influenza, however, disproportionately affects the elderly. In a recent study, influenza mortality correlated with age, with persons ≥ 85 years old being 32 times more likely than persons 65-69 years old to die of influenza-related complications.[6] Given that the average life expectancy at birth for men and women in the United States now exceeds 74 and 80 years, respectively,[7] annual influenza vaccination is, and must, remain among the most important public health priorities to control the healthcare burden associated with influenza morbidity and mortality.

The United States Preventive Service Task Force and the CDC's Advisory Committee on Immunization Practices recommend that elderly Americans get vaccinated against influenza as a preventive measure annually.[8-9] The 1996 Medicare Current Beneficiary Survey and the 2002 Behavioral Risk Factor Surveillance Survey—nationally representative surveys to assess influenza vaccination usage and reasons for not getting vaccinated among elderly Americans—demonstrated, however, that influenza vaccination rates differed among elderly racial/ethnic groups; approximately 68%-69% in whites, and 47%-50% in African Americans.[10,11] Furthermore, not getting vaccinated was associated with not perceiving influenza to be a health risk, regardless of race.[12] In *Healthy People 2010*, one of the objectives is to increase the proportion of all elderly Americans vaccinated annually against influenza to 90%.[13] "Eliminating," not just reducing health disparities, is one of the nation's goals for the next decade.

It will be a particular challenge to increase influenza vaccinations in elderly African Americans from 47% to 90%. The Medicare Current Beneficiary Survey provided little evidence as to why elderly African Americans are disproportionately not

Sohini Sengupta, PhD, MPH, Giselle Corbie-Smith, MD, Angela Thrasher, MPH, and Ronald P. Strauss, DMD, PhD, are affiliated with the University of North Carolina at Chapel Hill (UNC-CH). Dr. Sengupta is a Research Assistant Professor, Dr. Corbie-Smith is an Assistant Professor of Social Medicine, Ms. Thrasher is a doctoral student, and Dr. Strauss is Professor and Chair of Dental Ecology. Dr. Sengupta can be reached at sengups@med.unc.edu or at the UNC-CH Department of Social Medicine, CB# 7240, Chapel Hill, NC 27599-7240. Telephone: 919-843-6881.

getting vaccinated for influenza other than they may not know about the benefits of getting vaccinated.[14] Before we can wage a campaign to increase the proportion of elderly African Americans vaccinated against influenza, we must first understand the structural and interpersonal factors influencing their behaviors (i.e., getting or not getting vaccinated). The purpose of this qualitative study is to explore community perceptions of what makes it easy, as well as what makes it difficult, for elderly African Americans to get vaccinated for influenza.

METHODS

The target population was non-institutionalized, community dwelling elderly (≥ 65 years) African Americans living in Durham County, North Carolina. We recruited our convenience sample from senior centers, referrals from study participants already interviewed, as well as from a list of elderly African Americans through the University of North Carolina at Chapel Hill/North Carolina Central University Center for Minority Aging. Of the 41 potential participants approached or contacted over the telephone by our interviewer, 13 (31.7%) refused to participate. Reasons for refusal included that individuals were not interested, did not have the time, or they were not in good health. Our final sample was 28 participants, which was sufficient in achieving data saturation with respect to the expected and emergent issues associated with our research objectives.

Data Collection

The interviewer scheduled a one-hour interview with each of the 28 participants. Interviews were conducted either at the participant's home or at one of the senior centers where recruitment occurred. Written informed consent was obtained, followed by the interview. All interviews were audiotaped, and participants received financial compensation for their participation. The interviews were completed between May and October 2002. The Institutional Review Board of the University of North Carolina School of Medicine approved this study's protocol and consent form on October 19, 2001.

Qualitative Interview Guide

An interview guide was developed for this study to explore three main open-ended questions:

- What are the benefits (or risks) of getting vaccinated for the flu?
- What kinds of things do you think would help older African American adults get the flu shot?
- What makes it difficult for older African Americans to get the flu shot?

The interview concluded with a set of sociodemographic questions, including race/ethnicity of their main physician, age, education level, main source of income, health insurance status, whether or not they lived alone, whether or not they ever had the flu, whether or not they received a flu shot consistently on an annual basis, and whether or not their physicians offered them the flu shot during office visits.

Data Management and Data Analysis

Audiotapes of the interviews were transcribed into a word-processing program. The interviewer checked the accuracy of the transcripts by listening to, and reading along with each tape. Any identifying information in the transcripts was supplanted with generic references (e.g., Person A, Senior Center B) to protect confidentiality. The transcribed interviews were then imported into Ethnograph© v5.07, a qualitative software program for the purposes of content analysis.

For the Likert-type, and sociodemographic questions, data were entered into SPSS© 11.0.1. Frequencies were calculated for categorical variables, and medians were calculated for continuous variables. Content analysis involved the development of a thematic coding structure representing a hierarchy of codes.[15] Level 1 codes reflected each of the open-ended questions asked. Sub-codes reflected themes identified from answers to these questions. For example, *What are the benefits of getting vaccinated for the flu?*, was a theme earmarked by a level 1 code, and a sub-code for this theme was, *Protect myself from getting the flu.* We addressed validity systematically by first developing a codebook through an iterative process that delineated each

Table 1.
Sociodemographics

Variables	(N=28)
Gender	
Male	6 (21.4%)
Female	22 (78.6%)
Marital Status	
Married	12 (42.9%)
Widowed	11 (39.3%)
Other	5 (17.8%)
Income Source	
Social Security	18 (64.3%)
Retirement/Pension	10 (35.7%)
Education	
≤ High school	9 (32.1%)
Trade school	8 (28.6%)
College education	6 (21.4%)
Graduate degree	5 (17.9%)
Health Insurance	
Medicare + Private	19 (67.9%)
Private only	5 (17.9%)
Medicare only	1 (3.6%)
Other	3 (10.7%)
Lives alone	9 (32.1%)
Had the flu in the past	20 (71.4%)
Personal doctor offered vaccine in the past	24 (85.7%)
Personal doctor offered vaccine in Winter 2002	21 (75.0%)

Note: "Not sure" responses were excluded from totals that do not equal N = 28.

code (level 1 and sub-codes), their definitions, when is it appropriate to use each code, and when is it not appropriate to use each code after the research team had read a first passing of all of the interviews. The codebook provided the coders a framework of mutual understanding about each of the themes. The second step involved having coding teams independently read and code each interview for intercoder reliability. Percent agreement was compared for each code across interviews for the purposes of assessing intercoder reliability. Any code having less than 80% agreement was discussed, and discrepancies were resolved to improve agreement.

RESULTS

Description of the Sample

The 28 participants were all African American, 65 years of age or older, and living in Durham County, North Carolina (see Table 1). The mean age was 74.9 years, with the oldest participant being 86 years old. Overall, the majority of the participants was female, living on Social Security, and had both Medicare and private health insurance. Twenty (71.4%) of the participants had the flu in the past, and 13 (61.5%) of these participants received the annual flu shot consistently (data not shown in table). For 24 (85.7%) of the participants, a personal physician offered the vaccine to them in the past, and for 21 (75.0%), the personal physician offered the vaccine to them in winter 2002.

Facilitators and Barriers Affecting Influenza Vaccine Usage

To better understand why African Americans are getting or not getting vaccinated for influenza, we asked three open-ended questions to elicit what makes it easy and what makes it difficult for elderly African Americans to get the influenza vaccine. The three questions we asked were intended to improve understanding of community perceptions of the facilitators and barriers to influenza vaccine use. Tables 2 and 3 present the themes for facilitators and barriers, respectively, and quotation examples for each theme.

Facilitators Associated with Influenza Vaccination

All participants were asked about what makes it easy for members of their community to get vaccinated for influenza. Responses were categorized as either structural facilitators or personal factors (e.g., knowledge, attitudes, or health status) facilitating influenza vaccine usage (see Table 2). For structural factors, the predominant facilitator reported was receiving a reminder from their doctor to get a flu shot (N = 19). Reminders could range from an informal postcard in the mail, to a conversation with their personal doctor about the benefits for older African Americans to get vaccinated for influenza. Another important source of external information that facilitated vaccine usage was word-of-mouth from the community that getting the influenza vaccine is an important health behavior (N = 14). The "community" generally referred to other African Americans with whom they had discussed the influenza vaccine, such as friends, relatives, or church and religious leaders who were perceived as a source of positive information that older African American adults could trust. Lastly, it helped that the influenza vaccine was primarily covered by participants' health insurance (N = 7).

Several personal facilitator themes were identified. Seventeen (60.7%) participants strongly felt that being knowledgeable about influenza, its symptoms, and the possibility that it could be fatal, was a strong motivator to get vaccinated. Participants also described their own health conditions (e.g., heart disease or hypertension) as susceptible to the flu (N = 6), or the fact that they were getting older (N = 11), resulted in the need for getting a flu shot. Lastly, participants identified three main benefits about the influenza vaccination. The predominant perceived benefit given was that the influenza vaccination was effective in preventing individuals or communities from getting sick with the flu, or getting sick from cold-related illnesses (N = 24). The second most common benefit was the perception that the vaccine would diminish the severity of flu symptoms if the individual became infected with the flu (N = 12).

Barriers Associated with Influenza Vaccination

All participants were asked what makes it difficult for members of their community to get vaccinated for influenza. As in the analysis of facilitators, responses were categorized as either structural or personal factors (e.g., knowledge, attitudes, or health status) that posed as barriers to influenza vaccine usage (see Table 3). The predominant structural barrier was word-of-mouth from the community to not get a flu shot (N = 20). Within this context, "community" included community leaders, or relatives and friends, but this theme also reflected conversations individuals may have had, or might have heard at the barber shop, eateries, or other public places that were construed as dissuading elderly African Americans from getting a flu shot. Although not frequently mentioned, the theme, lack of access (N = 6), incorporated a number of different issues that prevented elderly African Americans from getting vaccinated, including not enough venues where individuals could go to get a flu shot. Lack of access also related to the issue of influenza vaccine shortages, which were salient even for participants who had regular primary care and could have received the vaccine through their physician's office.

Thirteen (48.1%) participants felt that not knowing about the severity of the flu was a personal barrier for most elderly African Americans. Participants also were influenced by what they perceived to be the risks of the influenza vaccination itself, focusing particularly on the contents of the vaccine. A predominant belief was that the flu shot itself could cause the flu (N = 21).

DISCUSSION

Our study demonstrated that participants' knowledge and attitudes about the severity and likelihood of getting influenza did not explain fully why elderly African Americans are getting or not getting vaccinated. Instead, exploring knowledge and attitudes in concert with structural facilitators and barriers provide a better picture of the challenges health professionals confront to improve influenza vaccination rates in this underserved racial group. We set out to understand the factors affecting

influenza vaccination use in one elderly African American sample and to provide recommendations on how to remedy some of the key factors identified.

The study findings focused on the facilitators and barriers affecting influenza vaccine usage among elderly African Americans in Durham County, North Carolina. Interestingly, some themes were identified as both facilitators and barriers to getting vaccinated for influenza. One of these themes was word-of-mouth from the community highlighting both the pros and cons of getting vaccinated. Although more participants expressed this theme within the context of what discourages individuals from getting vaccinated, it raises an important issue about how negative experiences with the influenza vaccine are emphasized, spread, and can linger within a community. Similarly, a predominant perceived risk was that the vaccine itself causes the flu. Most likely, what participants experienced

Table 2.
Facilitators to Getting the Influenza Vaccine

Theme	Text Example	(N=28) N (%)
STRUCTURAL		
Reminder from the doctor to get a flu shot	"...and pamphlets that they [doctor's office] send you in the mail to get the flu shot. And, they [doctor's office] do write you ...And tell you the flu shot will be given such and such a time." (Female, 73 years old)	19(67.9)
Word-of-mouth from the community to get a flu shot	"And that's where a lot of people gather, so around the flu time send notices or information to the churches and the schools informing people about this flu shot and sometimes people in the church will listen if it's coming from somebody else in the church." (Female, 73 years old)	14(50.0)
Written or visual media promoting flu shot use	"I think when you get information when you go to get your flu shot, they also give you pamphlets to hand out and things like that, I think that all is a good awareness." (Female, 67 years old)	11(39.3)
Vaccine is free or low cost	"Also cost, better health insurance for, insurance making it [flu vaccine] available that way." (Female, 65 years old)	7(25.0)
PERSONAL		
Being knowledgeable about the severity of the flu	"I have had the flu, and I know how sick you can get from it." (Female, 77 years old)	17(60.7)
Having a chronic condition that puts them at higher risk for getting the flu	"See I didn't have any serious medical problem. But since I had heart disease, he [doctor] encouraged it [getting flu shot]." (Female, 75 years old)	6(21.4)
Having (Had) a job that puts them at a higher risk for getting the flu	"Because it was part of the hospital's routine, the nurses there had to take, they had to take different vaccinations and all that kind of stuff." (Female, 66 years old)	8(28.6)
Getting older	"And the reason why I took the flu shot this year is because for the last—since I've made sixty five—I see that my resistance to colds and flus are getting worse." (Female, 68 years old)	15(53.6)
Benefits of the flu shot		
* Prevention	"I think it prevents you from being miserable during the winter." (Female, 68 years old)	24(85.7)
* Decreases symptom severity of the flu	"I guess stave, stave off colds, other diseases that might be connected with the flu." (Female, 78 years old)	12(42.9)
* Greater ability to do day-to-day activities	"Because my doctor is still telling me that if I have a breathing condition, that if I got the flu, it would be milder than if I did not take the flu shot." (Female, 73 years old)	8(28.6)
	I think it [flu shot] keeps my immune system stronger, so therefore I feel better, and I'm able to do the things that I enjoy doing and not have to spend time laying around, sneezing, coughing...so it really helps me so I can be more active." (Female, 67 years old)	

Note: Values represent the number (and %) of participants who reported each theme listed.

and were describing was an immunological response or side effects to the vaccine that they interpreted as the flu. Nevertheless, their negative experiences with taking the influenza vaccine will affect their future usage. In attempting to change behaviors among elderly African Americans, and in this case improve annual vaccination usage, we recommend the need to address historical, collective experiences (e.g., being exposed to a "bad batch" in early vaccination efforts), as well as urban myths (e.g., the vaccine causes the flu), in any targeted program developed.

Several other recommendations can be noted with respect to increasing knowledge and awareness of influenza and its vaccine in African American communities. A majority of the participants identified reminders from healthcare providers to get vaccinated

Table 3.
Barriers to Getting the Influenza Vaccine

Theme	Text Example	(N=28) N (%)
STRUCTURAL		
Word-of-mouth from the community to get a flu shot	"Those are the ones that are scared of, of getting the flu [from the flu shot]. They heard from somebody who heard from somebody else that it can give you the flu. It's hard to convince folks once they start thinking that." (Male, 72 years old)	20(71.4)
Irregular or lack of preventive healthcare	"When you're talking about medical visitation, regular visitations, a lot of people my age don't go to a doctor until they're sick. And the doctor, when they find out what's the matter with them, you know where they go first, the Emergency room." (Male, 76 years old)	7(25.0)
Lack of access	*Regarding vaccine shortage:* "When I went to the health department, they said it was somewhat late that they couldn't get the vaccine or something. I went there three times, you know. But anyway she said, 'I'll call you,' but when I did go back there was, something didn't come in... and I was interested in getting my flu shot." (Female, 77 years old) *Regarding location access:* "I think it's access to health, to places where you know the flu shot is given. There may be not as many clinics or places that you know that they can go to, or the distance that they may have to travel." (Female, 77 years old)	6(21.4)
PERSONAL		
Not knowledgeable about the severity of the flu	"Some of them are not knowledgeable enough to know what it can do for you. They don't realize the risks or the advantages." (Female, 76 years old)	13(48.1)
Fear	"I think some people are afraid. They're afraid that they're going to get sick or something from it." (Female, 79 years old)	13(46.4)
Risks of the flu shot		
* Side effects	"I think when they give you the shot, they're giving you part of that, parts of flu? And, if you're not strong enough or you can't fight it off, that's the way I feel about it. Your body's not strong enough, then I guess you just have the flu, it will give you the flu." (Female, 80 years old)	21(75.0)
* Getting the flu from from the flu shot	"My arm swolled up and I had chills and fever. Just like I was having, just like flu. And, I was just sick. And so, that stopped me from taking them [flu shots]." (Female, 80 years old)	18(64.3)
* Past problems with flu shot batches	"...sometimes the flu shot can, depending upon the batch of the flu shots that's being given sometimes they can have adverse effects and that is something I do think about." (Female, 65 years old)	5(17.9)

Note: Values represent the number (and %) of participants who reported each theme listed.

as a facilitator. The reminders can lead to elderly patients asking for the vaccine or just asking questions about the vaccine should they have concerns. Through simple reminder systems, providers can play an important role in reducing racial/ethnic disparities in vaccine use,[16] not to mention encouraging more patient education about influenza and its prevention. A second recommendation is to educate African American communities about the fact that an annual influenza vaccine is covered under Medicare, to which all over the age of 65 are entitled, and cost should not be a barrier to getting vaccinated. Lastly, since influenza immunization is seasonal, it would be useful to develop local media campaigns notifying the public in a timely and coordinated fashion when and where the vaccine will be available. This will most likely target individuals who have a desire to get vaccinated, but have had access difficulties due to vaccine shortages, late arrival of the vaccine, or not knowing locations where to get the vaccine, particularly in cases where individuals do not have a regular healthcare provider and rely on chain pharmacies or health departments for their vaccine source.

Our study has two primary limitations. First, our convenience sample was not heterogeneous with respect to socioeconomic status and gender, i.e., low-income and male participants were not equally represented. Second, our findings have limited generalizeability only to elderly African Americans with similar population characteristics to our sample living in Durham, NC. Further research would need to be conducted on a national sample of older African Americans to determine whether the same facilitators or barriers may apply in other regions of the United States. Despite its limitations, the findings demonstrate what works, and what factors pose as obstacles for elderly African Americans to get the influenza vaccination.

The public health benefits of improving influenza vaccination rates among the elderly include primary prevention, preventing secondary complications, and reducing hospitalizations and deaths associated with influenza.[9] These actual benefits, unfortunately, are not translating into increased vaccination use among the elderly, particularly elderly African Americans. In order to improve vaccination use, any public health intervention should have a multi-system approach that emphasizes what facilitates and overcomes the barriers to vaccine use at the individual, provider, community, and healthcare system levels. In so doing, eliminating health disparities, at least for influenza morbidity and mortality among elderly African Americans, could be a possibility. **NCMJ**

Acknowledgments: The study was funded by grants from University of North Carolina at Chapel Hill (UNC-CH)/North Carolina Central University (NCCU) Center for Minority Aging (#NR04716), the National Institutes of Health (HL04039), and the Robert Wood Johnson Minority Medical Faculty Development Program.

We also would like to thank Mr. Anthony Gauchie from the UNC-CH/NCCU Center for Minority Aging for assisting us with the recruitment of potential participants, and our Community Advisory Board members for their feedback on the design and implementation of this study.

REFERENCES

1 Barker WH, Mullooly JP. Influenza vaccination of elderly persons. Reduction in pneumonia and influenza hospitalizations and deaths. JAMA. 1980;244(22):2547-9.
2 Lui KJ, Kendal AP. Impact of influenza epidemics on mortality in the United States from October 1972 to May 1985. Am J Public Health. 1987;7(6):712-6.
3 Schoenbaum SC. Economic impact of influenza. The individual's perspective. Am J Med. 1987;82(6A):26-30.
4 Simonsen L, Clarke MJ, Williamson GD, Stroup DF, Arden NH, Schonberger LB. The impact of influenza epidemics on mortality: introducing a severity index. Am J Public Health. 1997;87(12):1944-50.
5 Barker WH. Excess pneumonia and influenza associated hospitalization during influenza epidemics in the United States, 1970-78. Am J Public Health. 1986;76(7):761-5.
6 Thompson WW, Shay DK, Weintraub E, Brammer L, Cox N, Anderson LJ, Fukuda K. Mortality associated with influenza and respiratory syncytial virus in the United States. JAMA. 2003;289(2):179-86.
7 National Center for Health Statistics. Data warehouse on trends in health and aging. http://www.cdc.gov/nchs/agingact.htm. Accessed June 12, 2003.
8 Centers for Disease Control and Prevention. Vaccine-preventable diseases: Improving vaccine coverage in adolescents, and adults. MMWR. 1999;48(RR-8):1-15.
9 Centers for Disease Control and Prevention. Prevention and control of influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR. 20029;51(RR03):1-31.
10 Marin MG, Johanson WG Jr, Salas-Lopez D. Influenza vaccination among minority populations in the United States. Prev Med. 2002;34(2):235-41.
11 Centers for Disease Control and Prevention. Public Health and Aging: Influenza Vaccination Coverage Among Adults Aged >50 Years and Pneumococcal Vaccination Coverage Among Adults Aged >65 Years—-United States, 2002. MMWR. 2003;52(41):987-992.
12 Zimmerman RK, Mieczkowski TA, Wilson SA. Immunization rates and beliefs among elderly patients of inner city neighborhood health centers. Health Promotion Practice. 2002;3(2):197-206.
13 US Department of Health and Human Services. Immunization and infectious diseases. Healthy People 2010 (2nd ed.). Washington, D.C.: U.S. Government Printing Office, 2000.
14 Centers for Disease Control and Prevention. Reasons reported by Medicare beneficiaries for not receiving Influenza and Pneumococcal vaccinations-United States, 1996. MMWR. 1999;48(39):556-890.
15 Strauss RP, Sengupta S, Kegeles S, McLellan E, Metzger D, Eyre S, Khanani F, Emrick CB, MacQueen KM. Willingness to Volunteer in Future Preventive HIV Vaccine Trials: Issues and Perspectives from Three U.S. Communities. J Acquired Immune Def Syn. 2001;26:63-71.
16 van Ryn M, Fu SS. Paved With Good Intentions: Do Public Health and Human Service Providers Contribute to Racial/Ethnic disparities in Health? Am J Public Health. 2003;93(2):248-255.