

DEVELOPING BELIEFS THAT SUPPORT VACCINATION: RESULTS FROM THE PHARMACISTS' PNEUMONIA PREVENTION PROGRAM



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INTRODUCTION

- Invasive pneumococcal disease causes an estimated 18,000 deaths per year in adults 65 years old and older.¹
- Despite pneumococcal vaccine (PV) availability, 36% of African Americans reported ever receiving PV vs. 62% non-Hispanic whites.²
- African Americans are at risk for decreased trust in the healthcare system due to historical incidences of racism, prejudice, and discriminatory practices.³⁻⁶
- Consequently, older African Americans may be at risk for decreased use of preventative care services.

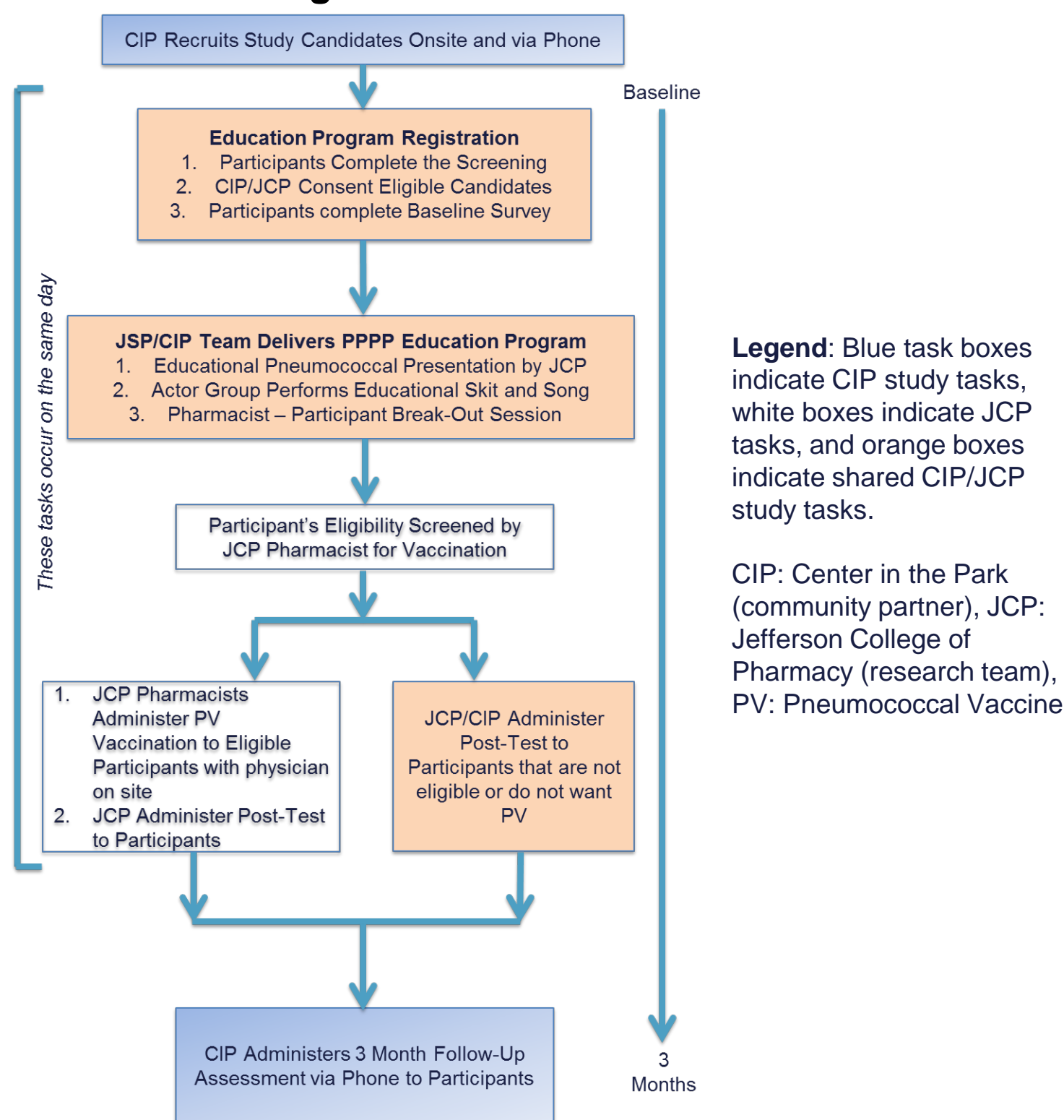
OBJECTIVE

To evaluate if a pharmacist-delivered educational intervention delivered through senior centers can positively impact older African Americans' beliefs about pneumococcal vaccination.

METHODS

- The educational intervention was called the Pharmacists' Pneumonia Prevention Project (PPPP)
- PPPP was conducted senior facilities eight times from March-November 2014 (Figure 1).

Figure 1. PPPP Intervention



Study Participants

- Center in the Park (CIP), a senior center located in northwest Philadelphia, recruited older community members for participation.
- Individuals who met all of the following criteria were eligible:
 1. Age ≥ 50
 2. Physically able to attend a 1.5-hour session
 3. Cognitively intact based on responses to an Abbreviated Mental Test Score of ≥ 7
 4. Speak and read English at ≥ 4 th grade level as evidenced by the ability to read a brief standardized passage

Beliefs Instrument

- Beliefs were measured using a 15-item instrument at baseline (in person), post-test (in person), and 3 months (by telephone) in the following four domains:
 1. Pharmacists as Immunizers
 2. Pneumococcal Vaccination
 3. Pneumococcal Disease
 4. Physicians as Immunizers
- Each item had a four-level Likert response scale, with responses ranging from 1 (completely agree) to 4 (completely disagree), except for the item "getting vaccinations can make me sick," which was reverse-coded.

Statistical Analysis

- Descriptive statistics were used to summarize demographics and participant responses.
- Two-tailed paired samples t-tests were conducted to identify statistically significant changes in mean belief responses between baseline, post-test, and 3 months.

RESULTS

- There was a total of 190 participants (Table 1).
- Statistically significant improvements in beliefs at post-test were observed with the following domains: pneumococcal vaccination, pharmacists as immunizers, and pneumococcal disease (Table 2).
- At 3 months, there were statistically significant improvements in mean belief scores from baseline in the following domains: pneumococcal vaccination and pharmacists as immunizers (Table 2).

RESULTS, continued

Table 1. Demographics of PPPP Participants (N=190)

Characteristics	n (%)
Gender	
Female	145 (76.3)
Ethnicity	
Black ^a	153 (80.5)
Caucasian	1.1
Other	1.6
Marital Status	
Never married	27 (14.2)
Married or living as married	32 (16.8)
Widowed, not currently married	60 (31.6)
Divorced, not currently married	32 (16.8)
Separated	8 (4.2)
Living Situation	
Lives Alone	68 (35.8)
Lives with 1 other individual	55 (28.9)
Lives with 2 or more individual	76 (16.2)
Education	
High school graduate or GED	63 (33.2)
Some college or vocational school	37 (19.5)
College graduate	40 (21.1)
Religion	
Christian	106 (55.8)
Jewish	2 (1.1)
Islamic	13 (6.8)
Other ^b	22 (11.6)

Note: The frequencies and percentages do not sum to 100 percent due to participants preferring not to answer.

^a Black represents the sum of participants that identify as African-American, Black-Caribbean, and Black-African.

^b Other represents all participants that are religious but are not Christian, Jewish, or Muslim, or do not identify with a religion.

Table 2. Changes in Beliefs (Baseline vs. Post-Test and Baseline vs. 3 months, N=190)

Domain 1: Beliefs About Pharmacists as Immunizers	Baseline vs. Post-Test		Baseline vs. 3 Months	
	Mean (SD) ^a	p-value ^b	Mean (SD) ^a	p-value ^b
I trust my pharmacist to give me information about vaccines	-0.160 (0.96)	0.09	0.056 (1.23)	0.67
I trust my pharmacist to give me information about my medications	-0.079 (0.88)	0.43	-0.219 (0.89)	0.04
I trust my pharmacist to vaccinate me	-0.663 (1.12)	0.00	-0.325 (1.28)	0.03
My pharmacist thinks it is important for me to get a pneumonia shot	-0.364 (0.83)	0.00	0.021 (1.26)	0.91
I am comfortable getting a vaccination at my pharmacy	-0.306 (1.05)	0.03	-0.352 (1.07)	0.02
Domain 2: Beliefs About Pneumococcal Vaccination	Mean (SD)^a	p-value^b	Mean (SD)^a	p-value^b
Getting vaccinations is important to my health	-0.155 (0.67)	0.01	-0.141 (0.59)	0.02
Getting vaccinations can make me sick	0.024 (1.12)	0.84	-0.314 (1.26)	0.04
Domain 3: Beliefs About Pneumonia	Mean (SD)^a	p-value^b	Mean (SD)^a	p-value^b
The pneumonia shot keeps a person from getting pneumonia	-0.302 (0.78)	0.00	-0.012 (1.07)	0.92
My friends and family think it is important for me to get a pneumonia shot	-0.123 (0.57)	0.11	0.058 (1.20)	0.73
A person who does not get the pneumonia shot will probably get pneumonia	-0.327 (0.83)	0.01	0.000 (1.14)	1.00
I am at risk of getting pneumococcal disease	-0.308 (0.99)	0.01	-0.029 (1.07)	0.82
It would be easy for me to get a pneumonia shot if I wanted one	-0.107 (0.45)	0.01	-0.087 (0.62)	0.18
Domain 4: Beliefs About Physicians as Immunizers	Mean (SD)^a	p-value^b	Mean (SD)^a	p-value^b
I trust my doctor to give me advice about vaccinations	-0.105 (0.60)	0.13	0.113 (0.82)	0.25
I am comfortable with getting vaccines from my doctor	-0.024 (0.61)	0.72	0.014 (0.75)	0.88
My doctor thinks it is important for me to get a pneumonia shot	-0.132 (0.57)	0.06	0.047 (0.86)	0.67

Note: Bold values represent statistically significant results.

^a Negative values indicate improved agreement with statement; positive values indicate reduced agreement with statement.

^b A 95% confidence interval with 2-tailed significance was used for the paired samples t-tests.

LIMITATIONS

- Results may not be generalizable to other ethnicities.
- Limited experience using this particular Beliefs Instrument as it was developed specifically for use in this study.
- 3 month study duration precluded our ability to measure long-term beliefs.

CONCLUSIONS

- Significant improvements in pneumococcal-related beliefs were observed following PPPP.
- Further research is necessary to identify approaches which improve beliefs over the long term.

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