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TITLE: Changing the Attitudes and Behaviors of Black Men to  
Screening for Prostate Cancer

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14. ABSTRACT The objectives of the project were a) to explore the prevailing attitudes toward screening for prostate cancer among Black men in the Cape Fear region of North Carolina b) to determine the comparative effectiveness of a one-time presentation of information advocating prostate cancer screening to that of repeated presentation of the message, and c) to determine the characteristics and impact of the agent of information delivery on the attitudes and behaviors of Black men toward screening for prostate cancer. The study involved the presentation of uniform messages advocating the benefits of prostate cancer screening to a group of 120 Black men 40 years and older who had never screened for prostate cancer, nor participated in a prostate cancer screening education program. Researchers, health professionals, and peer facilitators delivered educational messages once to one group, and three times to a second group. The comparison of attitudes before exposure to the messages to those after exposure was to help determine the impact of the program on attitudes in the groups. The number of men screened following exposure to the messages was to determine the impact of the program on behavior change. Data continue to be collected to help address the stated objectives of the study.					
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## Introduction

Although research suggests that one out of every 6 African American men will develop prostate cancer in his lifetime (Wingo et al., 1996), many investigators have reported that African American men are the least likely to participate in prostate cancer screening and regular check ups (see for example, Catalona et al., 1994). This low rate of participation in prostate cancer screening suggests that African American men present their diseases at more advanced stages, and thereby also increase their mortality rate from the disease.

There is some evidence that early detection through screening and treatment of prostate cancer significantly reduces mortality from the disease (Gefland, Parzuchowski, Cort, & Powell, 1995). Men whose cancer is diagnosed at a localized stage have a 5-year survival rate compared to those whose diagnosis occurs at an advanced stage (Mettlin, Jones, Averette, Gusberg, & Murphy, 1993). Screening for prostate cancer is perhaps the only avenue for the early detection of the disease. There is, nevertheless, a high refusal rate by Black men in screening for the disease. A number of previous studies have identified and examined the factors underlying this high rate of nonparticipation in prostate cancer screening among Black men. These factors include fatalism, fear, helplessness, and the sheer dislike of digital rectal examination (DRE) (Weinrich, Greiner, Reis-Starr, Yoon, & Weinrich, 1998).

Many researchers have emphasized the need to educate Black men about the benefits of prostate cancer screening. It has also been suggested that educational messages must clarify to this population the personal risks for prostate cancer, and emphasize the importance and ease of screening (Myers, Wolf, Balshem, Ross, Chodak, 1994). Researchers have further suggested that to maximize the impact of this message, messengers from the community should be actively engaged in the education process. The need for education is underscored by the fact that a substantial number of African American men do not have adequate knowledge about prostate cancer. Although it appears that education about prostate cancer and the screening process can be helpful, the specific cues that facilitate participation by African American men in screening for prostate cancer have not yet been identified.

Health professionals recognize that behavior change is a complex process that cannot depend on a one-shot presentation of educational information to the target group (see for example, Runyan & Runyan, 1991). Repetition of the message has been found to provide more opportunities for the recipient to elaborate cognitively upon the message and realize its cogency and favorable implications (Cacioppo & Petty, 1979). The literature suggests that moderate repetition of messages advocating prostate cancer screening may have a larger impact on attitudes toward screening for prostate cancer among Black men.

In addition to the message and the frequency of delivery to the target audience, the communicator also plays an important role in determining the persuasive impact of the message. Factors that influence the effectiveness of the message include the perceived expertise of the communicator, and the degree of trustworthiness of the communicator. Some studies have shown that testimony by peers is effective in encouraging participation in screening for prostate cancer among African American men (Black, Schweitzer, & Dezelsky, 1993; Freeman, Muth, & Kerner, 1995; Powell, Gefland, Parzuchowski, Heilbrun, & Franklin, 1995; Weinrich, Weinrich, Frank-Stromborg, Boyd, & Weiss, 1993).

Although previous research has identified many variables related to screening for prostate cancer among Black men, many other important issues on this subject have not been explored. A review of the literature suggests that many important questions have not been asked

and therefore there are no answers to these issues. The outstanding issues that are the focus of this study have been highlighted below as follow:

1. Although research has shown the effect of a one-time only presentation of information advocating prostate screening on the attitudes and behaviors of Black men to screening for prostate cancer, not much is know about the relative effectiveness of a one-time only presentation versus repeated presentations of the message to the same target of Black men. The issue of interest is whether the repetition of information about prostate cancer screening would produce greater attitude change followed by a corresponding greater participation in screening for prostate cancer compared to the one-time only presentation format.
2. Most of the previous work on prostate cancer screening use the researchers or health care practitioners as agents for the delivery of information about screening for prostate cancer to Black men. The important question is whether there would be a difference in the change in attitude, and subsequent prostate cancer screening behavior of Black men based on the characteristics of the agent of communication. Specifically, the relative impact of the agent or agents of information delivery on the attitudes and behaviors of Black men to screening for prostate cancer has not been adequately investigated.
3. Previous studies have not specified whether there are significant changes in attitudes resulting from the educational programs, and whether these attitude changes correspond to the behavior changes observed.
4. The long-term impact after the first presentation of information about prostate cancer screening has not been adequately explored.

Based on the outstanding questions raised in the foregoing, the current project was designed to address the following hypotheses:

1. That the repetition of educational information on the need for yearly prostate cancer screening to Black men will lead to significantly stronger positive change in attitude with a corresponding significantly larger number of first-time participation in screening for prostate cancer by Black men as compared to a one-shot presentation.
2. That peer facilitators and registered nurses or members of the medical profession in congregations will significantly influence more positive attitude and behavior change toward prostate cancer screening compared to an outside researcher.
3. That there will be significant positive attitude change towards screening for prostate cancer following participation in the prostate cancer education program compared to attitudes before participation in the program.
4. There will be a long-term significantly positive change in attitude to screening for prostate cancer following participation in the educational program rather than a transient change.

## Body

### ***Study Design***

A quasi-experimental study was set up to examine the hypotheses listed above. The communicator of educational messages (Communicator) and the number of times messages advocating prostate cancer screening to groups of Black men (Frequency) were manipulated in this study. Specifically, a 2(Frequency) X 3(Communicator) quasi-experimental factorial design was used to test the hypotheses.

### ***Communicators***

For the Researcher category of the Communicator factor, the principal investigator (PI) assisted by graduate students presented educational messages on prostate cancer screening. A general medical practitioner who is well known to many in the Black community in Fayetteville served as the communicator with a medical profession background. The pastor from one of the congregations who had been diagnosed and treated for prostate cancer presented information from the perspective of a survivor. The communicators presented the same educational information for one-time only to one group of participants, and repeated the presentation for three occasions to a second group of participants. Three months elapsed between each presentation for the groups exposed for multiple times to the information.

### ***Participant Recruitment***

Participants were recruited from Black churches, barbershops, and community centers throughout the Cape Fear region of North Carolina. The region includes Cumberland county in which Fayetteville, the main business and regional center is located, Sampson, Hoke and Harnett counties.

Radio, television, and newspaper advertisements, mass distribution of fliers at community centers and health fairs were used as recruitment tools for this study. We also used our extensive contacts with pastors, deacons, and other church leaders to enlist participants from all known predominantly Black churches in Cumberland County, and mailed solicitation letters to Black churches in the other counties. The most effective means through which participants were recruited was through mass mailing of letters to all Black men in Cumberland and the adjoining counties.

To qualify for participation in the study one had to satisfy the following conditions:

- i) Be an African American man of at least forty years old.
- ii) Have no history of prostate cancer diagnosis and/or treatment.
- iii) Have no previous or current diagnostic testing for prostate cancer.

The above stated criteria were necessary for examining the effect of educational information on attitudes and behavior change in individuals who had never before been screened for prostate cancer. It was necessary to exclude individuals with previous knowledge of prostate cancer screening because they were likely to be better informed about the disease. Such previous knowledge was deemed likely to influence their attitudes and behavior regarding screening for the disease. The inclusion of such individuals would have introduced confounds that could prevent a study of the effectiveness of educational message on the attitudes and behaviors of those with little prior knowledge of the risks posed by the disease.

### ***Attitudes and Screening Behavior***

Before exposure to the educational information advocating yearly screening for prostate cancer, all participants responded to a questionnaire designed to measure their baseline attitudes to prostate cancer screening. At least three months following the last presentation of educational material, participants in all groups were asked to complete a follow-up questionnaire on their attitudes to prostate cancer screening. The comparison of attitudes before exposure to the messages to those following exposure was to help determine the impact of the program on attitudes in the groups. An assessment of the number of men screened following exposure to the messages was to help determine the impact of the program on behavior change. The most important feature of this study was to explore whether the Communicator and Frequency variables interacted, by how much, and how they did so, in determining changes in attitudes toward screening for prostate cancer, and prostate cancer screening behaviors of Black men.

### ***Education on Prostate Cancer and Screening***

After identifying eligible participants, research assistants directly interviewed them about their attitudes to prostate cancer screening. Following the interviews, we conducted educational sessions on prostate cancer screening for groups of 20 men each. The sessions included the presentation of information on the anatomy and functions of the prostate gland, symptoms of prostate infections and cancer, epidemiological and statistical information on prostate cancer for Black men, the nature of prostate cancer screening using DRE and PSA, and treatment options for prostate cancer.

The theme of the presentations was the need for yearly prostate cancer screening to facilitate early detection of the disease. Emphasis was given to the high survival rate following early detection of prostate cancer through DRE and PSA screening and treatment of the disease. The presenters used multimedia resources including slides, charts, and video segments on prostate cancer screening.

All Communicators conducted two educational sessions: one involving the one-time presentation of information, and three sessions involving the repetition of messages. At each of these sessions, a voucher to cover the screening cost was given to each participant. A letter explaining the study and requesting DRE and PSA screening of the bearer was given to each participant. The participants were encouraged to obtain screening from their respective primary care doctors. Those without access to primary care doctors were directed to obtain screening from a group of medical doctors in Fayetteville who agreed to screen participants. Each participant was given a screening certification form that had to be completed by the examining physician and returned to the PI.

### ***The Current State of the Study***

As outlined in previous yearly reports, a number of practical problems with the recruitment of eligible participants have made it necessary to drastically revise the timelines originally proposed for the project. An important reason for the delays in the fulfillment of the originally proposed timelines is the extreme difficulty experienced with the recruitment of participants. It takes several months to recruit and interview eligible participants, in addition to the setting up of educational sessions.

Some participants who completed the initial interviews have not attended the educational sessions. Many participants in the multiple session groups have not attended the follow-up sessions. The most noteworthy problem is that of the numbers that participated in the educational

sessions, only a handful has so far been screened for prostate cancer. The table below summarizes the numbers of participants interviewed and screened for the one-time and repeated exposure groups respectively.

#### One-Time Exposure

Group Educator	Number Interviewed (Initial)	<sup>1</sup> Number Interviewed (Follow-up)	<sup>1</sup> Number Attendance at Educational Session	<sup>1</sup> Number Screened
Researcher	20	13	14	4
Survivor	20	8	10	6
Medical Personnel	20	12	17	1

<sup>1</sup>The numbers in these columns have been revised for additions and corrections from the 2005 report.

#### Repeated Exposures

	Interviews		Attendance at Educational Sessions			Number Screened
Group Educator	Initial	Follow-up	Session 1	Session 2	Session 3	
Researcher	20	10	14	3	4	6
Survivor	20	13	16	1	2	4
Medical Personnel	20	15	16	4	2	2

Although data from the initial interviews have been entered into the database, only preliminary analysis of the initial attitudes to prostate cancer screening can be performed at this moment. Meaningful analysis of the data to address the hypotheses of this investigation requires continued collection of information from the participants who participated in the educational programs. Although we have made some progress on this front, there are still outstanding data that need to be collected to facilitate a comparative analysis of attitudes to prostate cancer screening before and after exposure to information advocating yearly screening to the participants. Similar points apply to the prostate screening behavior of the participants. The collection of these data requires further no-cost extensions to the project.



### Key Research Accomplishments

1. One hundred and twenty Black males have been interviewed for their initial attitudes on screening for prostate cancer.
2. Educational sessions advocating prostate cancer screening have been conducted for 87 participants who had not previously been screened for prostate cancer.
3. Follow-up data that will facilitate a comparative analysis of attitudes to screening for prostate cancer before and after exposure to educational information on the subject continue to be collected.

### Reportable Outcomes

More data from participants must be collected before data analysis will make the presentation of reportable outcomes possible.

### Conclusions

Significant progress has been made towards fulfilling the goals and objectives of this project, albeit, at a much slower pace than originally anticipated. A major problem has been the large amount of time and resources required to enlist participants. The collection of follow-up data on attitudes has improved somewhat, although more work needs to be done to obtain the numbers that will make meaningful comparative analysis possible. The related analyses to determine the effect of Communicator on attitudes toward prostate cancer screening, and screening behavior following exposure to the information requires more data. We plan to continue the effort until all the remaining resources are exhausted.

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N/A

## Appendices