A Focus Group Study of Factors Influencing African-American Men's Prostate Cancer Screening Behavior

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This study was conducted to identify the factors perceived by African-American men as influencing their behavior relative to prostate cancer screening. A total of 49 African-American men, age 40 and above, participated in 10 focus group discussions in Florida. Data collection was between October 12, 2001 and March 9, 2002 in Tallahassee, Tampa, and Miami. Data analysis was conducted using a comprehensive ethnographical analysis, including the use of an ethnographical retrieval program, Nonnumerical Unstructured Data Indexing Searching and Theorizing (QSR NUD*IST® 4.0) software. Factors identified as influencing prostate cancer screening participation by African-American men were impediments to prostate cancer screening; positive outcome beliefs associated with prostate cancer screening; social influence; negative outcome beliefs associated with prostate cancer screening; resources or opportunities that facilitate prostate cancer screening; prostate cancer knowledge; perceived susceptibility to prostate cancer; perceived threat of prostate cancer; perceived severity of prostate cancer; positive health activities; illness experience; and prostate cancer screening intervention message concept, message source, and message channel. The results of this study may offer an excellent guide to designing effective, culturally sensitive, and relevant interventions, which would increase African-American men's participation in prostate cancer screening.

Key words: prostate cancer ■ screening ■ African-American men ■ health behavior ■ focus group

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INTRODUCTION

The U.S. Healthy People 2010 goal for prostate cancer is to reduce prostate cancer death rate to 28.8 deaths per 100,000 males by 2010 (Objective 3-7 of the *Healthy People 2010*, second edition, 2000). The reported death rate for African-American men in 2000 was 66.9 per 100,000 males and for white men 27.7 per 100,000 males, as published in the 2002 *National Vital Statistics Report*, volume 50, number 16. White men already fare better than the projected goal for 2010, while African-American men have a long way to go to achieve this goal. According to the 2003 cancer facts,[1] African-American men have the highest prostate cancer incidence rates in the world! They are also more likely to die from the disease than any other group. A number of reasons have been noted in the literature for the prostate cancer disparity seen in the African-American population, including the fact that: i) they do not have adequate knowledge about prostate cancer disease, including basic components of prostate check-up;[2-6] ii) they are less likely to correctly identify early symptoms of prostate cancer;[2,3] iii) they are more likely to believe pain is the first symptom of prostate cancer;[3] iv) they do not know that their race makes them a high-risk group;[5] v) they have a poor prostate cancer survival rate;[7,8] vi) they are more likely to present at a later stage of prostate cancer;[9] vii) they have higher levels of prostate-specific antigen;[10] and viii) prostate tumors appear to be more aggressive in African-American men.[9] Another significant underlying factor is the delay in screening for (and ultimately diagnosis of) prostate cancer, which negatively impacts receiving timely treatment. The controversy surrounding screening for prostate cancer (whether prostate-specific antigen test or digital rectal examination) cannot be ignored.[11-24] The significant risks and uncertain benefits of treatment options once diagnosed with prostate cancer are discouraging. However, better chance of survival has been linked to early detection.[13,14,16,20-22,24] Since there is no recognizable symp-

tom for early prostate cancer, early detection should be promoted in at-risk men, especially African-American men, so that aggressive treatment can be provided to increase their survival rate.

Current reports on prostate cancer screening indicate low participation by African-American men.[6,25,26] A number of researchers have investigated factors influencing participation of African-American men in prostate cancer screening.[6,27-32] Using structured questionnaire, often based on existing theoretical frameworks, these studies investigated sociopsychological and environmental determinants of prostate cancer screening among African-American men. Although these studies provide great insight into reasons African-American men are less likely to participate in prostate cancer screening, they are limited by the methodology employed. None of these studies have attempted a naturalistic study of African-American men's views of participating in prostate cancer screening. In this study, we employed a qualitative, in-depth interview to explore factors which facilitate or deter prostate cancer screening among at-risk African-American men for the following reasons:

1. Use of existing theoretical framework reduces the reality of African-American men's behavior to variables that were not developed specifically for this population and, thus, not culturally sensitive to studying prostate cancer screening among African-American men;

2. Use of existing theoretical framework can only explain limited variance in African-American men's behavior based on the theoretical variables, resulting in loss of significant information highly relevant to African-American men;

3. Human behavior is often bound by the context in which it occurs. For preventive health behavior, such as prostate cancer screening, the behavior must be studied naturally rather than being manipulated using theoretical assumptions; and

4. With a qualitative study, an "insider's" perspective is obtained, which gives more credibility to the information obtained.

The primary objective of this study was to identify predisposing factors and program intervention factors delineated by African-American men as influencing their prostate cancer screening behavior. Predisposing factors are behavioral, psychological, biological, social, and cultural factors that influence participation in prostate cancer screening. These factors have been proposed by valid health behavior theories, such as the Health Belief Model,[33] Subjective Expected Utility Theory,[34] Protection Motivation Theory,[35] the Theory of Reasoned Action,[36] and the Attitude-Social Influence-Efficacy model.[37,38] Program intervention factors tap at characteristics of an intervention program that is likely to motivate or discourage an individual to participate in prostate cancer screening.

MATERIALS & METHODS

This study was part of a Florida Prostate Cancer Project funded by the U.S. Army Department of Defense to develop a model explaining the behavior of African-American men relative to prostate cancer screening. A qualitative study was conducted to elicit factors perceived by African-American men as influencing their participation in prostate cancer screening. A total of 10 focus group sessions were held in Florida.

Recruitment of Focus Group Participants

Participants were African-American men age 40 years and above residing in Tallahassee, Tampa, and Miami. Participants were recruited by community outreach using flyers and posters (through local black churches, barber shops, word of mouth), black newspaper advertisements, and advertisements on black radio stations. To encourage participation, the following incentives were provided: i) a lottery drawing that included everybody who called in to volunteer for the study and ii) $30 incentive for all focus group participants. Using a screening questionnaire, study participants were prequalified based on their responses to questions on prostate cancer diagnosis and their demographics. The prequalification step was conducted to ensure that participants have never been diagnosed with

Table 1. Focus Group Participants' Demographics

Demographics	N	Percent
Age		
40–50 years	18	37%
51–60 years	18	37%
Over 60 years	13	26%
Marital Status		
Single	17	35%
Married	20	41%
Divorced	7	14%
Widowed	2	4%
Not stated	3	6%
Education		
Less than high school	7	14%
High-school degree	12	25%
Some college training	18	37%
College degree	8	16%
Postgraduate	4	8%

Table 2. Examples of Participants' Statements Associated with Predisposing Factors

Predisposing Factors	Examples of Participants' Statements
Perceived susceptibility to prostate cancer	1. "By coming to this meeting, I have found out that I am in the bracket for being at risk. That alone will encourage me." 2. "The rate of incident. What percentage of people is susceptible to it."
Perceived threat of prostate cancer	1. "Quantitatively, how many have been determined to have gotten it each year. And if we were to look up age groups, just that basic information, if they said like ninety percent of African-American men at age 60 is at high risk that would send me running. Statistics, but in such a way that it makes sense to someone other than a mathematician or a statistician."
Perceived severity of prostate cancer	1. "The bottom line message to get across is that prostate cancer is a killer." 2. "The fear of premature death will do it." 3. "I think prostate is something that takes the manhood away from a man. You cannot have sexual relationships."
Positive outcome beliefs associated with prostate cancer screening	1. "Early intervention and peace of mind. Those two things. ... And peace of mind for your family and loved ones, too." 2. "The test has caused me to be more aware of other things out there like AIDS." 3. "... if it is diagnosed, the earlier treatment begins, whether it's surgery, radiation or whatever it may be." 4. "It's like the gospel. Once you find out about it, it becomes your duty to let someone else know."
Negative outcome beliefs associated with prostate cancer screening	1. "Being in a state of denial. Because it is a killer. That doctor has to be wrong." 2. "... some people will have a strange reaction ..... you can have some serious mental state, serious mental state could be altered if you don't have other kinds of anchors to deal with that." 3. " ... this could challenge your faith in terms of whether you can deal with the challenge. And sometimes faith is good, but sometimes in all faiths, you still tend to be human and you may feel sorry for yourself." 4. "If you find out you have it, you wind up cutting your life short. .... You stress yourself out. It might add problems to your body or your life."
Prostate cancer knowledge	1. "The disadvantage is that we're not informed enough. We as black males mainly, don't know enough about it to get tested." 2. "Like I said earlier for the other questions, the more and more I'm educated about it, I mean I'm just going to do it." 3. "... generally lack of knowledge will prevent everyday black man."
Resources or opportunities that facilitate prostate cancer screening	1. "I would assume that maybe just letters of reminders from doctor." 2. "I think they need to find a couple of ways to do the test. Because like I said, feels there needs to be a different way of being tested other than digital rectal exam or some kind of invasive probe." 3. "I have insurance so I make it my business to go get my yearly check up and that is all that is required." 4. "If the clinic would provide it, I would have done it for free even if it was a one-time screening."
Impediments to prostate cancer screening	1. "If you can't afford to go to the doctor, then of course you would not get it done." 2. "We also have an arrogance based on ignorance. It's unmanly to complain in Afro American society. We don't want to be too white ..." 3. "... due to the fact that we are a minority population, the money and other resources are not there to address these issues..." 4. "Everywhere a black man goes, he's got to be subjected to a white man ... You can't go anywhere but FAMU and be tested by a black physician, black nurses, whatever ... Don't blacks offer anything?" 5. "The digital is uncomfortable."

(continued on next page)

prostate cancer and that they were selected to represent diverse age group, marital status, and educational level.

Focus Group Topics

The primary objective of this study was to elicit the factors influencing prostate cancer screening behavior from at-risk African-American men. The following topics guided the focus group discussions.

1. Positive evaluations about prostate cancer screening,

2. Negative evaluations about prostate cancer screening,

3. Significant social pressures that influence the decision to participate in prostate cancer screening,

4. Resources needed to facilitate participation in prostate cancer screening,

5. Perceived barriers to prostate cancer screening, and

6. Characteristics of intervention messages that affect prostate cancer screening.

Data Collection

To create an atmosphere of comfort and trust during the prostate cancer screening focus group sessions, the study consultant, focus group facilitator, and focus group recorder were African-American men. Prior to data collection, a training session was held by the study consultant for the study facilitator and recorder. Following the training, a mock focus group session was held on September 29, 2001 with five African-American men volunteers. Based on study consultant and investigators' observations, as well as participants' feedback, the following changes were made to improve the focus group data collection:

i) meals were provided for participants,

ii) a 15-minute break was incorporated to prevent fatigue by participants,

iii) participants were encouraged to respond to each other's comments and

iv) prostate cancer educational materials were made available at the end of the focus groups sessions for those who would like more information about prostate cancer.

Data collection was done between October 12, 2001 and March 9, 2002. Four focus group sessions were held in Tallahassee, three in Miami, and three in Tampa. The focus group discussions were recorded on a laptop and audiotaped to ensure that no information was missed during the sessions. Study investigators and the research assistant met with participants only to obtain informed consent before each session and provide study incentives after the focus group sessions. The study personnel present during the focus group sessions were the study consultant, focus group facilitator, and the focus group recorder. Using the guide topics listed above and based on cues from each focus group session, the facilitator led the discussions while the study recorder transcribed the discussions on a laptop.

Data Analysis

A comprehensive ethnographical data analysis was employed using both note-based and transcribed-based methodology. The audiotape recordings transcribed by the study research assistant were merged with the field notes recorded during the focus group sessions. Following the transcription, unique statements were retrieved from the data transcript by study investigators. A process of "unitization" was then employed to delineate units of information that best described statements from the focus group sessions. A total of 136 units were identified by two faculty and four graduate students in the Pharmacy Administration Division at Florida A&M University. These 136 units were further categorized into 17 themes representing distinct factors.

The final analysis was the use of an ethnographi-

Table 2. Examples of Participants' Statements Associated with Predisposing Factors (continued)

Predisposing Factors	Examples of Participants' Statements
Social Influence	1. "My doctor, but in some cases doctors don't promote it." 2. "I am lazy by nature so my wife pushes me." 3. "My wife does a lot of the pushing and due to the aggravation I will go." 4. "My employer because it was required for my job."
Positive health activities	1. "Being focused on your health helps." 2. "Include in your annual physical and making it standard.
Illness experience	1. "I'm a diabetic and I see the doctor periodically, and I take tests." 2. "I get tested due to my disability benefits."

cal retrieval program, Nonnumerical Unstructured Data Indexing Searching and Theorizing (QSR NUD*IST® 4.0) software to summarize the data. The QSR NUD*IST® 4.0 is a software used to develop, support, and manage qualitative data analysis projects. In this study, the software was employed to summarize and identify emerging themes from the data. Data summary was conducted by using the soft-

Table 3. Examples of Participants' Statements Associated with Program Intervention Factors

Program Intervention Factors	Examples of Participants' Statements
Positive message channels	1. "I think visual is much more effective like TV or flyers." 2. "Advertisements on buses and taxis." 3. "If you go into the projects I bet you will find an *Ebony* magazine or they are watching BET." 4. "I believe the most effective thing is different organizations that sit or are housed in the center of the community where we need to reach people more." 5. "Church can probably expand their ministries so that we can do these kinds of educational programs from the health perspective. I have a friend who lives in Washington, DC who became a Seventh-day Adventist. One of the things they do regular, they have health screenings that are provided right there at the church. They have lots of awareness programs that make people aware. But you have to find a way to get the message out to the audience, because if the audience won't come to you, you've got to find a way to take it to the audience and find out where they are on, whether that's on the street corner or wherever."
Negative message channels	1. "The Internet because it is not in the street." 2. "The Newspapers if it is not in a sports magazine then I won't read it." 3. "I hate to be bias, but I'm truthful about the situation. I think the media dominated by Caucasians does not give us the perception as African men that we need versus their side of the story. ... We need to put a black face with advertising to this subject."
Positive message sources	1. "A black doctor, he is going to put it on the line, you either do it or you don't." 2. "A research team because a lot of doctors are misleading and misdiagnosing." 3. "To make it more effective, a black face who has experienced prostate cancer, because you are passionate about what you have gone through." 4. "The ministers in the church could promote me to go get the test."
Negative message sources	1. "... the mass media message sponsored by the drug company." 2. "Sometimes you can not trust people who don't look like you." 3. "All you need now is a white woman on the billboard or TV telling a black man he ought to do a prostate check. And you felt that, What? For me, I would just ignore it then, but it would tick me off, too."
Positive message concepts	1. "Since we are statistically more visual than anything else, something that showed a man, a prostate, and something that says 'No test, then a casket or a grave'. That may get somebody's attention." 2. "If you did these kinds of messages and stuff and they were not culturally or ethnically sensitive. It would be like having a white lady teaching black people how to raise black children. Even though she had some good information, the people didn't want to listen to her. I don't want to hear that."
Negative message concepts	1. "Statements about not being able to treat you even if you were tested." 2. ".. the negative message that the media presents about prostate cancer doesn't allow – or discourages some people from getting it. It is a message after the devastation has hit, that they see rather than the positive before the devastation occurs."

ware to calculate the total units of participants' statements (text units) representing each of the 17 factors.

RESULTS

Study Participants

A total of 49 African-American men participated in the 10 focus group sessions. There were 21 participants in Tallahassee, 15 in Miami, and 13 in Tampa. The demographic information of the participants is summarized in Table 1. Only 24% of the participants had a college degree. The majority of the participants (41%) were married. There were equal numbers of participants in the 40–50 and 51–60 age categories, while 26% were older than 60 years.

Prostate Cancer Screening Factors

The time spent to collect data during the focus group sessions ranged from 44- to 165 minutes. The total number of text units was 3,271. Of the 3,271 units, 1,595 were relevant to prostate cancer screening. Seventeen unique themes were identified as factors influencing participation in prostate cancer screening. Eleven of these 17 themes were labeled predisposing factors and six labeled program intervention factors. The 11 predisposing factors identified from this study were impediments to prostate cancer screening; positive outcome beliefs associated with prostate cancer screening; social influence; negative outcome beliefs associated with prostate cancer screening; resources or opportunities that facilitate prostate cancer screening; prostate cancer knowledge; perceived susceptibility to prostate cancer; perceived threat of prostate cancer; perceived severity of prostate cancer; positive health activities; and illness experience. Examples of participants' statements associated with these predisposing factors are provided in Table 2. Characteristics of the intervention message concept, the message channel, and the message source were also elicited from the focus group sessions. Examples of participants' statements associated with these factors are presented in Table 3.

Ethnographical Data Analysis Results

The data analysis results are presented in Table 4. The transcribed data had a total of 766 text units referring to predisposing factors. The number of text units retrieved for these factors ranged from 12 text units to 213 text units. Based on the number of text units retrieved, the top three predisposing factors most frequently discussed as affecting prostate cancer screening were impediments to prostate cancer screening, positive outcome beliefs about prostate cancer screening, and social influence. For the program intervention factors, a total of 829 text units were discussed by participants. The top three factors most talked about by participants were positive message concept, positive message channel, and positive message source.

DISCUSSION

This study identified predisposing and program intervention factors that influence African-American men's participation in prostate cancer screening. The predisposing factors were labeled using the constructs

Table 4. Data Summary of Prostate Cancer Data Unique Themes

Unique Themes	Number of Text Units	Percentage of Text Units
Predisposing Factors (766 Text Units)		
1. Impediments to prostate cancer screening	213	27.81%
2. Positive outcome beliefs associated with prostate cancer screening	131	17.10%
3. Social Influence	116	15.14%
4. Negative outcome beliefs associated with prostate cancer screening	87	11.36%
5. Resources or opportunities that facilitate prostate cancer screening	85	11.10%
6. Prostate cancer knowledge	51	6.66%
7. Perceived susceptibility to prostate cancer	24	3.13%
8. Perceived threat of prostate cancer	17	2.22%
9. Perceived severity of prostate cancer	15	1.96%
10. Positive health activities	15	1.96%
11. Illness experience	12	1.57%
Program Intervention Factors (829 Text Units)		
1. Positive message concept	325	39.20%
2. Positive message channels	157	18.94%
3. Positive message sources	122	14.72%
4. Negative message sources	98	11.82%
5. Negative message concept	66	7.96%
6. Negative message channels	61	7.36%

of existing health behavior theories. The most important findings in this study were the personal statements of the participants which reflect their true feelings. A major predisposing factor identified in the study was impediments to prostate cancer screening. Nonethnographical studies that have found perceived barriers to significantly impact prostate cancer screening include that of Shelton et al.,[27] Eisen et al.,[28] Weinrich et al.,[29] and Merrill.[30] In our study, examples of impediments noted by the participants were lack of access to healthcare, discomfort of the digital rectal examination, not trusting the healthcare system or the healthcare provider, black men not seeing doctors regularly, not receiving information from the doctor, not having a primary care doctor, not having a black doctor, illiteracy, lack of self-motivation, not wanting to appear "too white," services mostly provided by white physicians, having other priorities, and "powerlessness" because African-American men are noted to be at risk for many diseases. In another ethnographical study,[39] digital rectal exam embarrassing and uncomfortable, was listed as a barrier by African-American men as influencing their behavior. Regardless of whether these impediments are real or perceived, overcoming them will be significant in increasing prostate cancer screening in African-American men. On the opposite end, prostate cancer screening facilitators identified by participants were easier procedures for testing, testing required by employer, free screening, access to healthcare, transportation, and reminders from physicians.

Outcome beliefs about prostate cancer screening were also found to be a relevant factor affecting African-American men's decision to participate in prostate cancer screening. Some of the positive consequences of participating in prostate cancer screening that were identified by participants were: early result may result in appropriate treatment, saving one's life if detected early, knowing one's status, knowing your life expectancy, being able to plan your life, increased health consciousness, peace of mind if result is negative, increased awareness about other disease, and may influence others to get tested. The negative consequences discussed were: impact on sex life, emotional stress before getting the test result and if result is positive, humiliation of rectal exam, feeling of being violated by the rectal exam, decreased quality of life if test result is positive, challenge of religious faith if tested positive, one may give up on life if tested positive, and the association of the rectal exam with homosexuality. Other health belief factors described by African-American men as influencing their participation in prostate cancer screening were: perceived susceptibility to prostate cancer, perceived threat of prostate cancer, and perceived severity of prostate cancer. Participants frequently discussed the importance of knowing the probability of getting prostate cancer, knowing the risk factors associated with prostate cancer, realizing how deadly prostate cancer is, and knowing the consequences of not participating in annual prostate cancer screening.

Significant referents identified in this study that have the potential to impact African-American men's decision relative to prostate cancer screening are: family members, friends, healthcare providers, employer, an individual who has been diagnosed with prostate cancer, and other black males. The impact of social influence on prostate cancer screening has been documented by Odedina et al.[26] and Nivens et al.[31] In particular, physicians have a significant role to play in promoting prostate cancer screening to African-American men. Unfortunately, some of the participants in our study noted that their physicians had never suggested prostate cancer screening to them. This result is similar to Clarke-Tasker and Wade's findings,[39] with the African-American men stating that physicians did not adequately screen or suggest that they should screen for prostate cancer.

The impact of knowledge on prostate cancer screening has been documented by Weinrich et al.[32] and Agho and Lewis.[6] In this study, participants reiterated the importance of knowing the right information about the disease and early detection. Prostate cancer education and awareness were frequently brought up by participants as key factors in promoting prostate cancer screening. Positive health activities and illness experience, although not as frequently mentioned as other factors, were also reported to affect African-American men's participation in prostate cancer screening.

Study participants also discussed prostate cancer screening intervention factors believed to influence their participation in prostate cancer screening. Almost 40% of the discussions on program intervention factors were about the use of positive message concept. Examples of message strategies participants believed would enhance their participation are: appropriate, culturally sensitive messages tailored to the black community, graphic and visual messages, fear messages, messages clarifying myths and misunderstandings, provision of shocking statistics about prostate cancer, provision of general information about prostate cancer, local resources for prostate cancer screening, and statistics supporting early detection. Message concepts, such as nonculturally sensitive messages; messages with negative outcomes about screening; messages with medical jargons; and messages about the rectal exam that may cause fear, embarrassment, or homosexual stigma, were noted to likely deter participation in annual prostate cancer screening. Participants preferred the following message channels for the

promotion of prostate cancer screening messages: billboard; flyers; church; black hair salons and barber shops; grass-root community outreach; personal contact; street contact in black neighborhoods; television, especially during sporting events; black media, such as BET, Tom Joyner radio show, *Ebony* and *Essence* magazines; messages attached to utility bills; messages attached to payroll checks; advertisements at job sites; and messages sent home through children from school. The Internet and newspaper were noted to be ineffective means for promoting prostate cancer screening.

Participants were also particular about the message sources for prostate cancer screening intervention. The African-American men participants preferred obtaining the prostate cancer screening information from family and friends who are knowledgeable; prostate cancer survivors; healthcare professionals, especially black physicians; black organizations, such as the Black Caucus and Urban League; reputable cancer organizations, such as the American Cancer Association; ministers; a black celebrity who has been diagnosed with prostate cancer; black colleges, such as Florida A&M University; and reputable prostate cancer researchers. The message sources participants felt would deter their participation in prostate cancer screening were non-African-American physicians; drug companies, and politicians.

CONCLUSION

This study used qualitative methodology to elicit factors influencing participation in prostate cancer screening from African-American men. Although the importance of screening is still controversial, the only way to ensure control of prostate cancer is through early detection. This is especially crucial among African-American men so that the disease can be detected early and aggressive treatment provided to increase the survival rate. Several attempts have been made and are still being made to influence African-American men's decision to participate in prostate cancer screening. Unfortunately, only a small number of at-risk African-American men participate in annual prostate cancer screening. To truly eliminate the morbidity and mortality disparity experienced by African-American men, there has to be significant improvement in their prostate cancer screening behavior. Changing human behavior, however, is not easy. A first step would be to understand the factors that impact the behavior. This is especially significant for the African-American population given the powerful impact of cultural and health beliefs on health promotion and disease management behaviors.

The African-American men who participated in this study expressed that their decision to participate in annual prostate cancer screening is affected by perceived susceptibility to prostate cancer, perceived threat of prostate cancer, perceived severity of prostate cancer, positive and negative outcome beliefs associated with prostate cancer screening, their prostate cancer knowledge, resources or opportunities that facilitate prostate cancer screening, impediments to prostate cancer screening, the influence of significant referents, positive health activities, and illness experience. The participants also noted that in promoting prostate cancer screening, the source of the message as well as the message channel and the message concept are likely to affect their decision. These predisposing and program intervention factors offer an excellent guide to designing effective, culturally sensitive, and relevant interventions, which would increase African-American men's participation in prostate cancer screening.

REFERENCES

1. American Cancer Society. Cancer Facts and Figures 2003. National Home Office. American Cancer Society Inc., 1599 Clifton Road NE, Atlanta, GA; 2003.

2. Barber KR, Shaw R, Folts M, et al. Differences between African-American and Caucasian men participating in a community-based prostate cancer screening program. *J Comm Health.* 1998;23:441-451.

3. Abbott RR, Taylor DK, Barber K. A comparison of prostate knowledge of African-American and Caucasian men: changes from prescreening baseline to postintervention. *Cancer J Sci Am.* 1998;4:175-177.

4. Smith GE, DeHaven MJ, Grundig JP, et al. African-American males and prostate cancer: assessing knowledge levels in the community. *J Natl Med Assoc.* 1997;89:387-391.

5. Steele CB, Miller DS, Maylahn C, et al. Knowledge, attitudes, and screening among older men regarding prostate cancer. *Am J Public Health.* 2000;90:1595-1600.

6. Agho AO, Lewis MA. Correlates of actual and perceived knowledge of prostate cancer among African Americans. *Cancer Nurs.* 2001;24:165-171.

7. Robbins AS, Whittemore AS, Van Den Eeden SK. Race, prostate cancer survival, and membership in a large health maintenance organization. *J Natl Cancer Inst.* 1998;90:986-990.

8. Brawn PN, Johnson EH, Kuhl DL, et al. Stage at presentation and survival of white and black patients with prostate carcinoma. *Cancer.* 1993;71: 2569-2573.

9. Ndubuisi SC, Kofie VY, Andoh JY, et al. Black–white differences in the stage at presentation of prostate cancer in the District of Columbia. *Urology.* 1995;46:71-77.

10. Moul JW, Sesterhenn IA, Connelly RR, et al. Prostate-specific antigen values at the time of prostate cancer diagnosis in African-American men. *JAMA.* 1995;274:1277-1281.

11. Oesterling JE. Prostate specific antigen: a critical assessment of the most useful tumor marker for adenocarcinoma of the prostate. *J Urol.* 1991; 145:907-923.

12. Johansson J, Adami H, Andersson S, et al. High 10-year survival rate in patients with early, untreated prostatic cancer. *JAMA.* 1992;267:2191-2196.

13. Scardino PT, Weaver R, Hudson MA. Early detection of prostate cancer. *Hum Pathol.* 1992;23:211-222.

14. Cupp MR, Oesterling JE. Prostate-specific antigen, digital rectal examination, and transrectal ultrasonography: their roles in diagnosing early prostate cancer. *Mayo Clin Proc.* 1993;68:297-306.

15. Berger N. Prostate cancer: screening and early detection update. *Semin Oncol Nurs.* 1993;9:180-183.

16. Mettlin C, Jones G, Murphy G. Trends in prostate cancer in the United States, 1974–1990: observations from the patient care evaluation studies of the American College of Surgeons Commission on cancer. *CA Cancer J Clin.* 1993;43:83-91.

17. Chodak GW, Thisted RA, Gerber GS, et al. Results of conservative management of clinically localized prostate cancer. *N Engl J Med.* 1994;330: 242-248.

18. Krahn MD, Mahoney JE, Eckman MH, et al. Screening for prostate cancer: a decision analytic view. *JAMA.* 1994;272:773-780.

19. Barry MJ, Coley CM, Fleming C, et al. The safety, effectiveness, and cost of early detection and treatment of prostate cancer among older men: Final report of the Congressional Office of Technology Assessment. 1994.

20. Rosen M. Impact of prostate-specific antigen screening on the natural history of prostate cancer. *Urology.* 1995;46:757-768.

21. Slawin K, Ohori M, Dillioglugil O, et al. Screening for prostate cancer: an analysis of the early experience. *CA Cancer J Clin.* 1995;45:134-147.

22. American Cancer Society. Cancer Screening in underserved populations. American Cancer Society. 1599 Clifton Road NE, Atlanta, GA 30329-4251. 1995.

23. Collins MM, Barry MJ. Controversies in prostate cancer screening. *JAMA.* 1996;276:1976-1979.

24. American Society. Cancer facts and figures—1997. American Cancer Society, 1599 Clifton Road NE, Atlanta, GA 30329-4251. 1997.

25. Denmark-Wahnefried W, Strigo T, Catoe K, et al. Knowledge, beliefs, and prior screening behavior among blacks and whites reporting for prostate cancer screening. *Urology.* 1995;46:346-351.

26. Odedina FT, Scrivens J, Xiao H, et al. African-American males' views on prostate cancer screening. *Minority Health Today.* 2000;1:28-34.

27. Shelton P, Weinrich S. Barriers to prostate cancer screening in African-American men. *J Black Nurs Assoc.* 1999;10:14-28.

28. Eisen SA, Waterman B, Skinner CS, et al. Sociodemographic and health status characteristics associated with prostate cancer screening in a national cohort of middle-aged male veterans. *Ad Urol.* 1999;53:516-522.

29. Weinrich SP, Reynolds WA, Tingen MS, et al. Barriers to prostate cancer screening. *Cancer Nurs.* 2000;23:117-121.

30. Merrill RM. Demographics and health-related factors of men receiving prostate-specific antigen screening in Utah. *Prev Med.* 2001;33:646-652.

31. Nivens AS, Herma J, Weinrich SP, et al. Cues to participation in prostate cancer screening: a theory for practice. *ONF.* 1998;28:1449-1456.

32. Weinrich SP, Weinrich MC, Boyd MD, et al. The impact of prostate cancer knowledge on cancer screening. *Oncol Nurs.* 1998;25:527-533.

33. Rosenstock IM. Historical origins of the health belief model. *Heal Educ Monog.* 1974;2:328-335.

34. Ronis DL. Conditional health threats: health beliefs, decisions, and behaviors among adults. *Health Psychol.* 1992;11:127-134.

35. Maddux JE, Rogers RW. Protection motivation and self-efficacy: a revised theory of fear appeals and attitude change. *J Exp Soc Psychol.* 1983;19:469-479.

36. Fishbein M, Ajzen I, eds. Belief, attitude, intervention, and behavior: an introduction to theory and research. Reading, MA: Addison-Wesley. 1975.

37. De Vries H, Dijkstra M, Kuhlman P. Self-efficacy: the third factor besides attitude and subjective norm as a predictor of behavioral intentions. *Health Educ Res.* 1988;3:273-282.

38. Lechner L, De Vries H. Starting participation in an employee fitness program: attitudes, social influence, and self-efficacy. *Prev Med.* 1995;24:624-633.

39. Clarke-Tasker A, Wade R. What we thought we knew: African-American males' perceptions of prostate cancer and screening methods. *ABNF Journal.* 2002;13:56-60. ■

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