Published in final edited form as:

Public Health. 2012 January ; 126(1): 64–66. doi:10.1016/j.puhe.2011.09.019.

‘Too much trouble for what I get out of it’: acceptability of cancer screening tests among low-income rural men and women in the Deep South

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Cancer continues to exact a significant toll worldwide, with the cancer burden expected to grow.¹ Encouragingly, routine screening can detect many cancers at an early stage, when treatment is most likely to improve survival. For some cancers, precancerous abnormalities detected in screening can be promptly removed before becoming malignant, thus preventing disease.² Despite the benefit of screening, the uptake of cancer screening tests is less than optimal. Proposed US Healthy People 2020 objectives include increasing the proportion of adults who participate in cervical, colon and breast cancer screening, and increasing the proportion of men who discuss prostate cancer screening with their healthcare provider.³

In the USA, cancer screening is primarily paid for by private insurance or, for those aged ≥65 years, by a government health insurance programme for older Americans (i.e. Medicare). Medicare covers the cost (i.e. no co-payment from the patient) for breast, cervical, colorectal and prostate cancer screening, although patients may incur costs associated with colorectal cancer screening (e.g. cost for anaesthesia). For uninsured, underinsured and low-income women, federal legislation has provided limited funding for breast and cervical cancer screening.⁴ The funding supports the National Breast and Cervical Cancer Early Detection Program implemented by the Centers for Disease Control and Prevention. An estimated 8–11% of US women who meet screening age requirements are eligible for the programme. Regardless, minorities, who represent a large proportion of the un- and under-insured, are a population at high risk for late-stage cancer diagnosis and have the highest cancer mortality in the USA.²

Beyond race, data suggest that beliefs play an important role along the cancer continuum. A study by Lannin *et al.*, for example, found that the racial difference in the presentation of late-stage cancer (i.e. African Americans being more likely to present with more advanced cancer) was primarily explained by socio-economic variables and cultural beliefs related to breast cancer, cancer treatment and health care.⁵

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Ethical approval: University of Alabama at Birmingham

Competing interests: None declared.

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This study explored cancer-related beliefs in low-income, minority rural residents in order to further understanding of the uptake of cancer screening recommendations. Data for this study were taken from a baseline assessment of participants in a randomized controlled trial evaluating an intervention to improve adherence to hypertension medication.⁶ Participants were adults with a household income below the federal poverty level, recruited from two county health department clinics and a federally qualified health centre in a rural South-eastern state in the USA. The primary recruitment area was one rural county with a majority African American population (73%) where over 30% of the population lived below the federal poverty level (almost twice the state poverty rate and nearly three times the national rate).⁷ Data on uptake of cancer screening tests (via self-report) and cancer screening beliefs were obtained via computer-assisted telephone interview. The study was approved by the University Institutional Review Board, and all participants provided written informed consent.

Four hundred and thirty-four hypertensive patients participated in this study. The mean age was 56.1 (standard deviation 13.1) years, and the majority were African American (94.7%), female (67.5%), not married (65%) and had a yearly income below US\$15,000 (81.8%). Among adults aged ≥ 50 years, 53.7% indicated a history of at least one faecal occult blood test (FOBT) and/or colonoscopy/sigmoidoscopy. Among women aged ≥ 40 years, 83.3% reported ever receiving a mammogram. Among all women, 98.3% reported ever having a Pap test. Of African American men aged ≥ 45 years and Caucasian men aged ≥ 50 years, 50.9% reported ever receiving a digital rectal examination (DRE). As African American men are encouraged to begin prostate cancer screening earlier, the receipt of tests was assessed at an earlier age for African American men compared with Caucasian men.

Belief in the efficacy of different cancer tests to detect cancer at an early stage varied by screening test (Table 1). Only 61% of men believed that DREs could detect prostate cancer at an early stage. In contrast, $>80\%$ of women believed in the efficacy of Pap smears and mammograms. Among men and women, 69.8% of respondents had a strong belief that colonoscopy/sigmoidoscopy could detect cancer at an early stage, while 75.3% believed that this was true for FOBT. Approximately 25% believed, at least somewhat, that colonoscopy/sigmoidoscopy was 'too much trouble' for what one gets out of it, compared with 23.4% who had similar beliefs for DRE, 19% for FOBT, 16% for Pap test and $<13\%$ for mammogram.

Whereas many studies explore cancer-related beliefs within the context of a single cancer site, this study assessed four sites and thus provides important information regarding the relative acceptance of, and belief in, recommended screening tests. There was great variability in the perceptions of low-income, rural minority patients, and cancer screening tests were not viewed as equally efficacious. Even among the tests most endorsed as being able to detect cancer at an early stage (i.e. mammograms and Pap smears), 17% of women did not believe, believed a little or believed somewhat that these tests were effective in detecting cancer. Participants reported great ambivalence about the benefits of cancer screening; again, this varied by screening test. The finding that almost 25% of participants believed, at least somewhat, that colonoscopy/sigmoidoscopy was 'too much trouble' for what they gained is concerning. As racial/ethnic disparities in colorectal cancer screening persist,⁸ empirically supported approaches to resolving ambivalence, such as motivational interviewing,⁹ may be critical.

This study has some limitations. For example, the participants were recruited from a department of public health and a healthcare facility, and thus the findings cannot be generalized to individuals without access to healthcare providers or who choose not to access health services. Future studies should consider population-based recruitment

approaches. This study also has several strengths. First, the study population was vulnerable on many levels. In the USA, minorities, those with fewer financial resources and those residing in rural areas tend to have poor health outcomes. Second, by exploring belief systems for different cancer screening tests within a single sample, the study provides important information. The findings suggest that increasing public confidence in cancer screening tests may require approaches that target individual screening tests specifically. Future research should seek to understand why individuals believe in the efficacy of some screening tests to detect cancer while believing less so for other cancer screening modalities.

Acknowledgments

Funding: National Institutes of Health-NHLBI. Sponsored Project Identification #: RO1HL69375.

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Table 1

Beliefs in common cancer screening tools to detect cancer.

How strongly do you believe that:	Not at all <i>n</i> (%)	A little <i>n</i> (%)	Somewhat <i>n</i> (%)	A lot <i>n</i> (%)	Don't know <i>n</i> (%)	Refused <i>n</i> (%)
How strongly do you believe that:						
A faecal occult blood test can detect early colon cancer (<i>n</i> =434)	13 (3.0)	19 (4.4)	47 (10.8)	327(75.3)	27 (6.2)	1 (0.2)
Colonoscopy or sigmoidoscopy can detect early colon cancer (<i>n</i> =434)	17 (3.9)	31 (7.1)	53 (12.2)	303 (69.8)	28(6.5)	2 (0.5)
Digital rectal examination can detect early prostate cancer (<i>n</i> =141, men)	7 (5.0)	20 (14.2)	21 (14.9)	86 (61.0)	7(5.0)	0
Pap test can detect early cervical cancer (<i>n</i> =293, women)	4 (1.4)	13 (4.4)	29 (9.9)	244 (83.3)	3 (1.0)	0
Mammogram can detect early breast cancer (<i>n</i> =293, women)	5 (1.7)	16 (5.5)	26 (8.9)	244 (83.3)	2 (0.7)	0
How strongly do you believe that _____ is too much trouble for what you get out of it?						
Faecal occult blood test (<i>n</i> =434)	286 (65.9)	42 (9.7)	25 (5.8)	58 (13.4)	21 (4.8)	2 (0.5)
Colonoscopy or sigmoidoscopy (<i>n</i> =434)	265 (61.1)	33 (7.6)	36 (8.3)	73 (16.8)	26(6.0)	1 (0.2)
Digital rectal examination (<i>n</i> =141, men)	83 (58.9)	20 (14.2)	14 (9.9)	19 (13.5)	5 (3.5)	0 (0)
Pap test (<i>n</i> = 293, women)	218 (74.4)	28 (9.6)	15 (5.1)	31 (10.6)	1 (0.3)	0 (0)
Mammogram (<i>n</i> =293, women)	229 (78.2)	21 (7.2)	9 (3.1)	28 (9.6)	6 (2.0)	0 (0)