PROSTATE CANCER SCREENING IN THE AFRICAN AMERICAN COMMUNITY:

“Establishing the Efficacy of Tangible Prostate Phantoms as an Educational Aid to Improve the Screening Compliance of Black Men”

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PRESENTATION OUTLINE:

• Background
  • Prostate Health Disparities

• Justification
  • Impact on Health Literacy Education

• Objectives
  • Increase Prostate Screening
  • Kinesthetic vs. Linguistic
  • Summer Research 2013

• Materials and Methods

• Results
  • Surprises!

• Discussion

• Conclusion

• Questions
PROSTATE CANCER HEALTH DISPARITIES OF AFRICAN AMERICAN MEN

SEER reports that the 2011 adjusted PCa mortality rate for Black men was 48.9/100,000 compared to 20.6/100,000 for White men.

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Male PCa Deaths by Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Races</td>
<td>23.0 per 100,000 men</td>
</tr>
<tr>
<td>White</td>
<td>20.6 per 100,000 men</td>
</tr>
<tr>
<td>Black</td>
<td>49.8 per 100,000 men</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>10.1 per 100,000 men</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>20.7 per 100,000 men</td>
</tr>
<tr>
<td>Hispanic</td>
<td>19.2 per 100,000 men</td>
</tr>
</tbody>
</table>

**BACKGROUND:**

Prostate cancer screening has the potential to reduce these mortality rates by 31%.

- Annually, only 28.3% = 1,681,626 African American men get screened for PCa.

**Literature Review Keywords:** Prostate Cancer Screening, African American, Prostate Specific Antigen Test, Digital Rectal Exam, Prostate Cancer Mortality Rates 2013.
“Establishing the Efficacy of Tangible Prostate Phantoms as an Educational Aid to Improve the Screening Compliance of Black Men”

OBJECTIVES

• 1,000 men would have to be screened in order for one life to be saved due to prostate cancer screening5.

Question:
Does having a tangible structural model of the prostate to demonstrate diseases such as
• benign prostatic hyperplasia,
• prostatitis, and
• prostate cancer
prompt African American men to get screened earlier and more often?

JUSTIFICATION

Summer 2013 Results

Question 1:
• Experiment Arm = 85% of participants are now interested in PCa Screening

• Control Arm = 78% of participants are now interested in PCa Screening

416 African American men could be alive to due to our prostate phantoms as an educational aid1.

Summer 2014 Revisions

• Larger Number of Participants
  • The Black Men Health and Wellness Expo Health Summit
  • Man Up 2014: Health Summit

• Standard Educational Material
• Follow-Up Survey Questions
• More culturally competent survey
  • Word reduction
  • Visually Conducive
  • Health literacy rate of AA men
  • Pamphlet
2014 HYPOThESIS

• CaP mortality rate for African-American men with fewer than 12 years of education was more than twice the rate of African-American men with 12 or more years of education (Ashford et al.).

• Observations in learning styles report that AA men retain personal health information best with experiences that involve physical activity and community-based relationships (Shade, Hilliard).

Hypothesis:
If a tactile/kinesthetic learning style for African American men (AA men) over age 40 is best for them to glean Pca information, then

1. Information will be better valued, understood, and retained.
2. Information learned via tactile/kinesthetic learning is more likely to inspire positive change to a lifestyle that will provoke potentially life-saving action.

MATERIALS: HOW TO MAKE PROSTATE PHANTOMS

1. Consecutive Genitourinary Magnetic Resonance Imaging (MRI) Scans
2. MRI contouring software (ImageJ)
3. 3-D Medical Printer
4. Polyvinyl Chloride (PVC) plastic
5. Dye (for the tumors)
METHODS:

- **Step 1:**
  In the experiment arm of the study, the prostate phantoms were shown to participants individually or in groups of 2-5 men.

- **Step 2:**
  Following the tangible experience of the prostate phantoms, investigators used a survey to evaluate the effectiveness of the prostate phantom as an educational aid.

- **Step 3:**
  After 2.5 hours, the prostate phantoms were placed out of sight, and the investigators informed the control arm participants using only the standard educational materials (pamphlet), **without the tangible prostate phantoms.**

SURVEY RESULTS: QUESTION 6 (Q6)

**Prostate Cancer Screening Survey**

<table>
<thead>
<tr>
<th>Question</th>
<th>Intervention: 12/31</th>
<th>Control: 1/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Did you visit this table last year?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What was the table last year?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remembrance Score: 6/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. In the past 12 months, have you taken the Digital Rectal Exam and/or Prostate-Specific Antigen test?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Remembrance Score: 5/6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q6 Response Averages**

<table>
<thead>
<tr>
<th>Control</th>
<th>Experiment</th>
<th>S.Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg 3.81</td>
<td>Avg 3.85</td>
<td>S.Dev: 1.44</td>
</tr>
</tbody>
</table>

**P-value** = 0.94502 > 0.05
Not Statistically Significant
**p** = 0.05 using ANOVA
SURVEY RESULTS: QUESTION 10 (Q10)

10. Taking the Digital Rectal Exam, allows your doctor to determine, with an imaging computer, if you have tumors on your prostate.

Out of the 12 self-perceived linguistic learners in the control arm, 4 men ANSWERED #10 CORRECTLY.
Out of the 21 self-perceived kinesthetic learners in the control arm, 1 man ANSWERED #10 CORRECTLY.

0.027662 < 0.05; thus, the number men who are self-perceived linguistic learners in the control arm WHO ANSWERED #10 CORRECTLY is significantly greater than the number men who are self-perceived kinesthetic learners in the control arm WHO ANSWERED #10 CORRECTLY.

\[ p\text{-value} = 0.28 > 0.05 \]
Statistically Significant
\[ \alpha = 0.05 \text{ using ANOVA} \]

DISCUSSION/LIMITATIONS:

• None of the other survey questions (not including Q10) showed a statistically significant difference in the survey responses of the men who experienced the prostate phantoms (experiment arm) and the men who did not experience the prostate phantoms (control) at the “Palpation Station.”

Limitations

• Small sample size- (Control Arm: 26; Intervention Arm: 31)
CONCLUSION:

Community-based Pca education is most best at provoking AA men to comply to prostate cancer screening.

Peer educators and trained health education workers can be instrumental in building trust within the community.

Non-traditional learning tools, such as tangible prostate phantoms, are effective ways to create an experience to inspire life-changing action.

DEDICATION:

This is for my Dad.
MANY THANKS AND ACKNOWLEDGMENTS

BIBLIOGRAPHY


- MLA formatting by BibMe.org.
IMPRESSIONS OF A COMMUNITY: ANY QUESTIONS?

In regards to African American men in health disparities, impressionistic art works as a wonderful metaphor.