Direct and Indirect Effects of BodyLove: A US-based radio serial drama for prevention and control of chronic diseases among African American adults

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Direct and Indirect Effects of BodyLove: A US-based radio serial drama for prevention and control of chronic diseases among African American adults

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Background

African Americans are disproportionately affected by chronic diseases such as diabetes, heart disease and hypertension.

Diabetes in the US

Overall US population: 25.8 million (8.3%)
Among non-Hispanic blacks: 4.9 million (18.7%)

Background

Mainstream health promotion efforts often do not adequately reach or influence some segments of this population.

Entertainment Education offers reach and influence

BodyLove developed 2003-2007 to reach African American adults in Alabama
Objectives

Entertainment Education

Individual Change

How EE Works? “Indirect Effects”

Social Change
The BodyLove Story

BodyLove hair salon

Owned by the Love family: Moe, Mabel and daughter Vanessa (who has 3 children and a husband who drinks).

Vanessa and friend Rosalyn operate the salon.

But who is the REAL father of Vanessa’s oldest daughter, Maya??????
BodyLove Production

• 80 episodes
• 15 minutes in length
• Written by university students, and theatre and public health faculty
• Local actors and director
• Local production studio
BodyLove Broadcast

• Funded by The Robert Wood Johnson Foundation with local match
• Aired by 15 Alabama radio stations
• Usually embedded in 30 minute or one hour talk show
Methods

Is there a direct or indirect relationship between exposure to BodyLove and behavior?

Is this relationship mediated by self efficacy, interpersonal communication or perceived importance of changing behavior?
Radio station listeners were recruited to complete surveys at baseline and re-contacted after every 20 episodes.

<table>
<thead>
<tr>
<th>Time</th>
<th>Sample (n)</th>
<th>82 respondents completed ALL five surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>208</td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>131</td>
<td></td>
</tr>
<tr>
<td>Time 2</td>
<td>167</td>
<td></td>
</tr>
<tr>
<td>Time 3</td>
<td>147</td>
<td></td>
</tr>
<tr>
<td>Time 4</td>
<td>157</td>
<td></td>
</tr>
</tbody>
</table>
• Direct Effects of Exposure on Behaviors

\[ Y = \beta_1 X + \varepsilon_1 \]

Where \( Y \) is the dependent variable, \( X \) is the independent variable \( \beta_1 \) is the regression of \( Y \) on \( X \) and \( \varepsilon_1 \) is the residual.

• Indirect effects “single step multiple mediator model”

\[ Y = \beta_1 X + \beta_2 M_1 + \beta_3 M_2 + \beta_4 M_3 + \varepsilon_1...\varepsilon_4 \]

Where \( M_1 \) through \( M_3 \) are the mediators, \( \beta_2 \) through \( \beta_4 \) is the regression of \( Y \) on the individual mediators and \( \varepsilon_1...\varepsilon_4 \) are the residuals.
Duration of exposure:
• Ever heard Bodylove?
• How many episodes heard?

Level of Parasocial Interaction (PSI):
• Six five point likert scale questions
• Additive index 0-24 (reliability $\alpha = .79$, mean = 9.4).
Measures (Exposure)

- No Exposure: 41.5
- Low Exposure: 8.6
- Medium Exposure: 23.2
- High Exposure: 26.8
Measures (Mediators)

**Self-efficacy:** Pertaining to physical activity (6 items), diet (7 items) and stress (8 items). Additive Index Range 0-2100 Mean = 1060.7. Collapsed into a 3 point scale.

**Interpersonal communication:** Conversations about diabetes, exercise, diet and stress often or very often.

**Perceived importance:** It was extremely important to control their diabetes or not get diabetes
<table>
<thead>
<tr>
<th>Items</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>35.37</td>
</tr>
<tr>
<td>Medium</td>
<td>31.71</td>
</tr>
<tr>
<td>High</td>
<td>32.93</td>
</tr>
<tr>
<td>IPC</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>6.1</td>
</tr>
<tr>
<td>One topic</td>
<td>10.98</td>
</tr>
<tr>
<td>Two topics</td>
<td>21.95</td>
</tr>
<tr>
<td>Three topics</td>
<td>29.27</td>
</tr>
<tr>
<td>All four topics</td>
<td>31.71</td>
</tr>
<tr>
<td>Perceived Importance</td>
<td></td>
</tr>
<tr>
<td>Extremely import’t</td>
<td>75.61</td>
</tr>
</tbody>
</table>
Measures (Behaviors)

Actions (positive self-reports) associated with reduction in chronic conditions

- **Physical activity**: physical activity for 3 or more days in a week and 10 or more days in past 30 days
- **Diet**: Eating fewer calories and trying to cut back on fat consumption
- **Stress**: Specific actions to control stress
Measures (Behaviors)

- Exercise: 59.76
- Diet: 79.27
- Stress: 68.29
- ALL three behaviors: 30.49
Results (Demographics)

• African American (91%)
• Women (84%)
• Mean age 49 (range 18-70)
• At least high school education (86%)
• 30% reported having diabetes
• Over 90% had a friend or relative with diabetes
Structural Equation Model

Notes: β significant at the .05 level denoted by (*). Residuals (ε) not shown.
Results

- Parasocial Interaction is a perfect predictor for the latent variable “exposure”
- Duration of exposure is a significant measure of exposure to Bodylove.
- No significant direct correlation between exposure and behaviors
- Exposure is significantly correlated with interpersonal communication and self-efficacy
- Behavior is significantly correlated with perceived importance and interpersonal communication
Conclusion

The value of interpersonal communication for serving as a mediator between exposure and behaviors is clear.
Implications

• US is assumed to be an unlikely place for EE approaches to succeed due to media saturation
• Results indicate higher levels of self-efficacy and interpersonal communication
• If evaluations continue to show positive impact, funds to mainstream EE can be attracted
“I listen to the program to learn more about hypertension. I like them talking about it…. See I am learning what I need to do. You know, I have someone to eat naked chicken. They are eating naked chicken. That’s the way I have to eat mine. That’s why I though that I need to eat naked chicken.”