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Effects of online resource to support laypersons' understanding of media reports on breast cancer research

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Background

Young women frequently seek health information through the internet and mainstream media (Pugh-Yi et al., 2018; Rowlands et al., 2015), but often find it does not address their particular concerns, that it is difficult to evaluate or interpret, or even misleading (Laugesen et al., 2015; Fergie et al., 2012). Research suggests that emotional and social functioning after a breast cancer diagnosis is inversely proportional to age at the time of diagnosis (Anders et al., 2009).

XRAYS is an online resource developed by Facing Our Risk of Cancer Empowered (FORCE) that summarizes recent research relevant to young women with or at-risk for breast cancer. XRAYS reviews rate the quality and relevance of research, the quality of media reporting, and offer questions user may want to address with health care providers. FORCE tested XRAYS effects on users' knowledge and interviewed partner organizations about the cultural appropriateness of its materials.

Project objectives:

1. Test the effectiveness of XRAYS in improving users' knowledge of content in media reports.
2. Assess the degree to which XRAYS facilitates awareness of recent research findings.
3. Obtain feedback regarding XRAYS' utility and appeal.
4. Use results to inform XRAYS development.

Methods

Knowledge Impact

Knowledge impact was evaluated by multiple choice questions about factual content in three XRAYS summary reports.

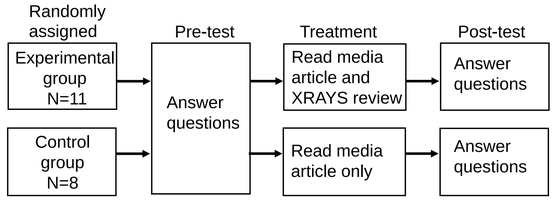
Participants:

- 21 women between ages 18 and 45 years.
  - 19 participants (11treatment, 8 control) completed the assessment of pre-post-test knowledge change.
  - 21 participants were included in focus group analysis.
- Participants were attendees at FORCE's June 2017 conference in Orlando, FL and attended 1 of 3 focus groups.
  - 20 participants were Caucasian and 1 was African American.
  - 2 were healthcare providers.

Procedures

Impact of XRAYS on understanding

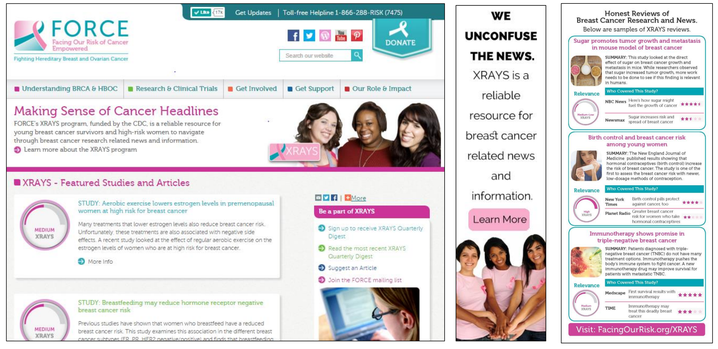
Figure 1. Pre-test, treatment and post-test schema.



Outreach Cultural Appropriateness

The Evaluation Lead conducted one-on-one interviews with representatives of FORCE's 8 partner organizations and expert consultants about the cultural appropriateness of ten selected XRAYS promotional materials.

Figure 2. Examples of materials used for the XRAYS program. Website summaries linking to full reviews of research and media (left), promotional ad (middle) and rack cards for healthcare providers (right).



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Results

Knowledge Impact

Table 1. Within groups comparisons.

XRAYS users show a significant gain in understanding of media articles. Control group participants do not show significant improvement in understanding.

Group	N	Pre-test mean % correct (s.d.)	Post-test mean % correct (s.d.)	t-score (d.f.)	p
Control	8	57.5 (12.8)	72.5 (23.8)	-2.0 (7)	n.s.
XRAYS	11	52.7 (20.5)	87.3 (16.3)	-7.3 (10)	<.001

Table 2. Between group comparison.

XRAYS users respond correctly twice as often as participants who read only media articles.

Group	N	Mean Change Score (s.d.)	t-score (d.f.)	P
Control	8	15.0 (20.7)	-2.3 (18)	<.05
XRAYS	11	34.6 (15.7)		

Utility

Participants reported that XRAYS was a useful resource for young breast cancer survivors and previvors.

Focus group participants recommended that XRAYS continue to:

- Offer clear, brief, non-technical summaries of research findings, limitations, and implications for decisions about healthcare.
- Include a tool for evaluating research reporting and conclusions.
- Identify and review media reports on topics of interest.
- Offer clear, brief critiques of issues with media reporting, such as sensationalism or failure to report study limitations.
- Suggest topics of discussion with healthcare providers.
- Develop a dissemination strategy for outreach to and coordination with health care providers

Participants also suggested additions to the XRAYS program:

- Incorporate a glossary or other feature to facilitate comprehension of technical vocabulary.
- Disseminate information through targeted alerts.

Outreach Cultural Appropriateness

Partner organizations reported that materials:

- frequently require a high level of literacy
- appear targeted to scientific professionals more than lay audiences.
- at times depend on the audience being familiar with FORCE.
- are appealing and communicate respect for constituents of color.

Discussion

XRAYS users responded correctly approximately twice as often as participants who read only media articles. These results suggest that XRAYS can help readers understand research reporting and its limitations. Reduction of literacy level may allow greater access and understanding.

Limitations.

- Small sample size. FORCE will evaluate a larger sample to assess improvement in the control group and to confirm that knowledge increases with access to XRAYS.
- Future comparisons should include socioeconomic status data to evaluate impact of this program on diverse populations.
- There may be a population bias; participants were FORCE constituents who may be more informed about breast cancer than the average reader.

References

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