Fear Arousing Persuasive Communication: The Use of Threat and Coping Appraisal in Breast Cancer Messages

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Abstract
At present, breast cancer is having a severe effect in Kenya and it forms a serious threat to Kenyan women. In Kenya, breast cancer is the most common reproductive organ cancer which contributed 23% of all female cancers with one out of every nine women being diagnosed with advanced breast cancer (Neondo, 2006). According to the regional cancer registry at Kenya Medical Research Institute, about 80% of reported cases of cancer in Kenya are diagnosed at advanced stages, when very little can be achieved in terms of curative treatment (Musimbi, 2008). In Kenya, breast self examination is one of the interventions recommended by the government. Statistics however indicate that very few women engage in BSE despite widespread awareness campaigns by various stakeholders. This study sought to establish whether the breast cancer media messages are fear appeal theory based in their design in order to motivate breast screening, using the protection motivation theory. Content analysis was used to examine print media articles for threat and coping appraisal. The study examined all breast cancer print media articles in the Daily Nation newspaper, The Standard newspaper and the Parents magazine for the month of October 2012 and October 2013. Out of 250 messages analyzed, there was 60% severity, 23.2% vulnerability, 9.6% self efficacy and 7.2% response efficacy. The results of the study were intended to assist message designers to come up with messages that use fear appeal to motivate breast self examination.

Keywords: Threat Appraisal, Coping Appraisal, Vulnerability, Severity Self Efficacy, Response Efficacy

Background to the Study
Breast cancer is the most common cancer in women both in the developed and the less developed world. It is a significant cause of mortality among women and the second leading cause of death due to cancer in women, exceeded only by lung cancer (American Cancer Society, 2007). It is estimated that one in every eight women will develop breast cancer during

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their lives. In 2012, breast cancer was the second most diagnosed cancer after lung cancer, with 1.7 million cases which is 11.9% of all cases. Projections based on the GLOBOCAN 2012 estimates predict a substantive increase to 19.3 million new cancer cases per year by 2025, due to growth and ageing of the global population. More than half of all cancers (56.8%) and cancer deaths (64.9%) in 2012 occurred in less developed regions of the world, and these proportions will increase further by 2025 (Ferlay et al., 2013).

Breast cancer is also the most common cause of cancer death among women with 522,000 deaths in 2012 and the most frequently diagnosed cancer among women in 140 of 184 countries worldwide. It now represents one in four of all cancers in women (Bray, Ren, Masuyer, & Ferlay, 2013). Incidence has been increasing in most regions of the world, but there are huge inequalities between rich and poor countries. Incidence rates remain highest in more developed regions, but mortality is relatively much higher in less developed countries due to a lack of early detection and access to treatment facilities. For example, in Western Europe, breast cancer incidence has reached more than 90 new cases per 100,000 women annually, compared with 30 per 100,000 in Eastern Africa. In contrast, breast cancer mortality rates in these two regions are almost identical, at about 15 per 100,000, which clearly points to a later diagnosis and much poorer survival in Eastern Africa. There is thus an urgent need in cancer control today to develop effective and affordable approaches to the early detection, diagnosis and treatment of breast cancer among women living in less developed countries (Ferlay et al, 2013).

To compound the problem, breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden and Japan to around 60% in middle-income countries and below 40% in low-income countries (Coleman et al., 2008). The low survival rates in less developed countries can be explained mainly by the lack of early detection programs, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities.

In Kenya, cancers of the breast and cervix represent a large proportion (43.3%) of all reported cancers (World Health Organization, 2007). Incidence and prevalence of breast cancer has been increasing over time. According to the Nairobi cancer registry, the most common reproductive organ cancer in women is breast, which contributed 23% of all female cancers (Ministry of Public Health and Sanitation and Ministry of Medical Services [MOPHS & MMS], 2012). Breast cancer in Kenyan women occurs more commonly in younger women aged 40 to 49 years (Mutuma & Korrir, 2000) compared to the West where the peak prevalence is between 50 and 59 years. In addition, most patients in Kenya present late stages of the disease. When screening and detection are regularly and correctly performed, and timely treatment is provided, breast cancer is associated with a good prognosis. Unfortunately, when diagnosis is made late, breast cancer is associated with poor outcome. One of the contributing factors to late presentation is lack of awareness about early detection of breast cancer.

Prevention remains the cornerstone of the fight against breast cancer worldwide. Although some prevention methods have been proposed, many remain inaccessible to women in developing countries who, ironically, given the limited diagnostic and curative facilities available to them, need prevention the most (Ginsberg, Lauer, Zelle, Baeten, & Baltussen, 2012). The aim of early detection is to detect the cancer when it is localized to the organ of origin and before it invades the surrounding tissues and distant organs, or for some sites, to detect a precancerous

lesion (WHO, 2007). In a population where the majority of the cancers are diagnosed in late stages, and particularly also when cancer survival rates are low, promotion of early diagnosis may be the most feasible strategy to reduce the percentage of advanced stages and improve survival rates for breast cancer which is amenable to effective treatment with limited resources (WHO, 2007).

In order to motivate people to alter unhealthy habits and adopt healthy lifestyles, health educators quite often resort to the use of fear appeals by presenting people with information that stresses an individual's vulnerability to a health risk, the severity of this risk, or both. Fear appeals also hope to raise motivation to carry out a protective behaviour by raising individual's efficacy in carrying out the practice and the efficacy of the response (Witte, 1992). With the increasing challenge of breast cancer in Kenyan women, and fewer women undertaking breast self examination as an intervention method despite continuous awareness campaigns by the stakeholders, it would be important to evaluate whether the messages are theory based in their design, using protection motivation theory.

Statement of the Problem

In Kenya, one out of every nine women is diagnosed with advanced breast cancer (Neondo, 2006). According to the regional cancer registry at KEMRI, about 80% of reported cases of cancer in Kenya are diagnosed at advanced stages, when very little can be achieved in terms of curative treatment (Musimbi, 2008). In an effort to address this challenge, breast self examination is recommended for early detection besides CBE and mammography (MOPHS & MMS, 2012). BSE is recommended because mammography as well as CBE requires effort, technical expertise, and particularly mammography is rather expensive. BSE is typically the major means of discovering tumors at a stage where treatment and clinical cure are possible for Kenyan women. This is because women younger than 40 years of age are only invited for CBE once every two years and annually for those above 40 years and mammogram being a highly technological test that requires highly-trained personnel and elaborate equipment.

Statistics however indicates that very few women in Kenya engage in breast self examination despite widespread awareness campaigns by various stakeholders. A study conducted by a research firm Ipsos Synovate in 13 urban towns in Kenya showed that six out of seven women in Kenya had not screened for breast cancer despite aggressive and sustained awareness campaigns by the government, hospitals and NGOs (Ipsos Synovate, 2012). In a similar study in October of 2011, the research firm established that six out of seven Kenyans living in urban areas had not screened for breast cancer. This was despite 75% of the sample having formal schooling to tertiary level and majority of them having access to the communication channels that the government and other stakeholders have been using to raise awareness on the disease. Overall, in a national study carried out in July 2012, 89% of Kenyans both men and women had never tested for any form of cancer (Ipsos Synovate, 2012).

Providing information on breast cancer is not always sufficient, there is always the need to ensure that the message is persuasive enough to motivate adoption of the recommended health improving behaviour. With statistics indicating an increasing threat of breast cancer, and few women engaging in BSE despite awareness campaigns on the same, this study used the protection motivation theory to examine whether the current awareness messages are fear appeal theory based in their design, through content analysis of a sample of print media

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articles. This study therefore sought to examine the use of fear arousing persuasive communication through the use of threat and coping appraisal in print media breast cancer messages.

Literature Review

Breast cancer is the most frequently diagnosed cancer and is the leading cause of cancer death among women worldwide. It is estimated that every 19 seconds, somewhere around the world, a case of breast cancer is diagnosed among women and every 74 seconds someone dies from breast cancer (Institute for Health Metrics and Evaluation, 2011). More than 1.6 million new cases of breast cancer were diagnosed among women around the world in 2010 which at this rate translates to about 41 million cases of breast cancer being diagnosed during the next 25 years.

Typically there are no symptoms of early-stage breast cancer, when the tumor is most treatable (American Cancer Society, 2007). When the tumor has grown to be palpable, the most common symptom is a painless mass. Other less common signs and symptoms include breast pain, persistent changes to the breast, thickening, swelling, redness, and nipple abnormalities including discharge, erosion, inversion, or tenderness.

There are predisposing factors that increase the likelihood of a person developing breast cancer. To begin with, Family History and Genetic Factors increase the risk of developing breast cancer. Secondly, being a woman and advancing in age predisposes one to breast cancer. A woman's chances of developing breast cancer increase with age. Prolonged Exposure to oestrogen is yet another predisposing factor to breast cancer. Early age of menarche at age 12 or earlier increases the risk of breast cancer (Press, Fishman & Koenig, 2000). Also, women who have their menopause after age 50 have a higher risk of breast cancer than those women who have an early menopause. If a woman's first full-term pregnancy occurs after age 30, or they never become pregnant, they have a greater chance of developing breast cancer.

Early detection in order to improve breast cancer outcome and survival remains the cornerstone of breast cancer control (Anderson et al., 2008). Early diagnosis remains an important early detection strategy, particularly in low and medium income countries where the disease is diagnosed in late stages and resources are very limited. There is enough evidence that this strategy can produce down staging, which refers to increasing in proportion of breast cancers detected at an early stage of the disease, stages that are more amenable to curative treatment (Anderson & Jakesz, 2008).

When screening and detection are regularly and correctly performed, and timely treatment is provided, breast cancer is associated with good prognosis. Unfortunately when diagnosis is made late, breast cancer is associated with poor outcome (MOPHS & MMS 2012). One of the contributing factors to late presentation is lack of awareness about early detection of breast cancer. As a consequence, various stakeholders have circulated health information regarding breast cancer and breast cancer screening. The information is distributed to the population through the media during the breast cancer awareness month of October, through health care providers and through campaigns by non governmental organizations. One of the methods advocated for to tackle breast cancer is breast self examination. It is however clear that the messages are not effective enough to motivate BSE, considering the increasing cases of late

presentation of the disease, and therefore paramount to examine whether such messages are fear appeal theory based in their formulation.

Fear Appeals

A fear appeal is a persuasive communication that arouses fear to promote a self protective action (Witte, 1992). According to the Protection motivation theory, two distinct appraisal processes occur when the individual receives threatening information (Rogers, 1975). The first appraisal, threat appraisal, is associated with the maladaptive health response and is affected by perceptions pertaining to the severity of and personal vulnerability to the proposed threat. High perceptions of severity and vulnerability increase the likelihood of an adaptive response.

The second process, coping appraisal, is associated with proposed health recommendations. It involves the individual's assessment of the effectiveness of the proposed adaptive behavior to avert the danger as well as the perceived ability to carry out the recommended actions. High levels of the self and response efficacy variables predict greater likelihood of enacting the adaptive behavior (Rogers, 1975).

Perceived vulnerability to the undesirable outcome refers to one's subjective perception of the risk of a negative event happening to them. It is expected that the higher the perceived vulnerability to a negative event, the higher the intention to follow the recommendations. Perceived severity to a negative event refers to feelings concerning the seriousness of causing an accident while driving under the influence, or contracting an illness like lung cancer (or leaving it untreated). It is expected that the higher the perceived severity to a health condition, or other negative outcome, the higher the intention to follow the recommendations.

Perceived response efficacy refers to the person's belief that the recommended behaviours will be effective in reducing or eliminating the danger. It is expected that the more efficacious the health recommendation, the more positive is the response including attitude, intention, and actual adoption of the recommended health behaviour. Perceived self-efficacy refers to the person's belief that he or she has the ability to perform the recommended behaviours. It is expected that the higher the perceived self-efficacy, the more positive the response. Information about vulnerability and severity is often combined to form threat information. Response and self-efficacy is provided together to constitute coping information (Sturges and Rogers 1996).

## Breast Cancer Intervention Strategies

Proper screening necessitates the presence of certain elements which include high-quality screening using mammography, high coverage and participation and effective referral systems for diagnosis and treatment (The Lancet, 2009). It is costly to implement such screening strategies thereby rendering screening unfeasible in low- and middle-income countries (LMCs). Implementation of population-based, organized mammography screening programs for early detection is cost prohibitive in many low- and middle-income countries (Anderson et al 2008). Increasing awareness of early signs and symptoms and screening by clinical and self breast examinations are the only viable options in these countries (Anderson et al 2008). With the challenge of breast cancer being global and with increasing prevalence in the developing world, various nations have come up with strategies to attenuate its effects.

One of the contributing factors to late presentation is lack of awareness about early detection of breast cancer. In Kenya, various concerted efforts have been put in place to try and lessen breast cancer effects on the populace. Various stakeholders have circulated health information regarding breast cancer and breast cancer screening. The information is distributed to the population through the media during the breast cancer month of October, through health care providers and through campaigns by non governmental organizations. One of the methods advocated for to tackle breast cancer is breast self examination.

1.6 Breast Self-Examination

Also known as self-awareness, breast self-examination (BSE) is encouraged for women of any age by the government of Kenya. A variety of methods and patterns are used in breast self-exams. Most methods suggest that the woman should stand in front of a mirror with the torso exposed to view. She looks in the mirror for visual signs of dimpling, swelling, or redness on or near the breasts. This is usually repeated in several positions, such as while having hands on the hips, and then again with arms held overhead (MOPHS & MMS, 2012).

1.7 Conceptual Framework
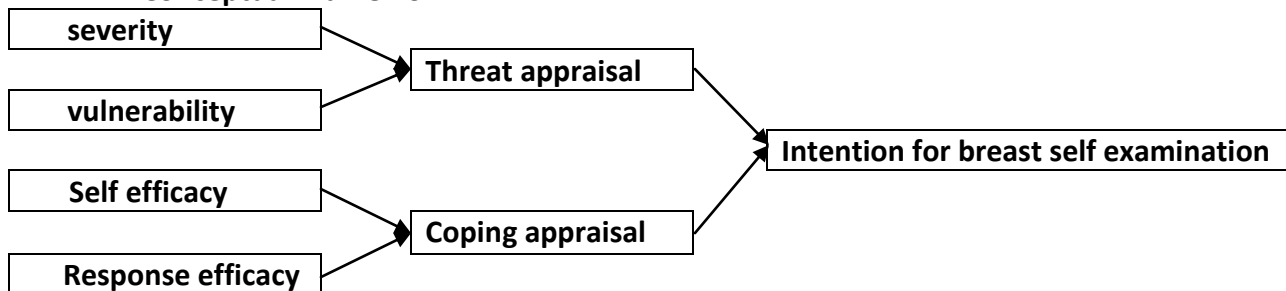
In this study, it was expected that a balanced coping and threat appraisal would motivate breast self examination as advocated for in protection motivation theory.

1.8 Breast Cancer Communication in Kenya

Mass media campaigns in Kenya have been vigorous on the topic of breast cancer and breast self awareness especially during the breast cancer awareness month of October, but even then breast awareness is majorly raised in women with access to the media channels through which the campaigns are disseminated. The print media has been at the forefront in publicizing statistics, education, and treatment options available to the population. A sample of these media articles is analyzed in the study.

1.9 Research Design

The study used descriptive research design. Content analysis was also used to examine print media articles. The study examined all breast cancer print media articles in the Daily Nation newspaper, The Standard newspaper and the Parents magazine for the month of October 2012 and October 2013. Content analysis involves selecting the sample text; defining initial categories; developing codes and the coding process; implementing coding, and ensuring reliability of the coding process and results (Hsieh & Shannon 2005). The study employed a

directed content analysis where categories and codes were developed based on theory and past research that is relevant to the current subject matter. Two coders were trained and using a coding schedule used to carry out the research.

Sample and sampling procedure

The sample was purposively selected in articles identified if the terms "breast cancer" or "cancer" or "breast health" appeared in the article title, subtitle, or description. The timeframe of October 2012 and October 2013 was chosen because October is breast cancer awareness month, and the media has more information on breast cancer over this period. To focus the study on highly visible news stories that were more likely to reach a large audience, eight articles from two national newspapers each, the Daily Nation and The Standard plus two from The Parents' magazine were selected. The articles were coded for the threat and coping appraisal variables to find out whether the messages are fear appeal theory based in their design.

Threat and Coping Appraisal in the Print Media

Threat was examined through vulnerability and severity of breast cancer. Vulnerability, the likelihood that an individual will get breast cancer, was determined to be present in phrases that addressed breast cancer morbidity rates at various ages and specific risk factors such as family history, age, genes, obesity and other potential risk factors identified in the medical literature. Severity, the seriousness of breast cancer, was determined to be present in messages that addressed breast cancer mortality rates, treatment options like mastectomy and radiation, costs of the disease, physical and emotional suffering.

In the analysis, self efficacy was examined through the presence of statements of the ability to perform breast self exam, ways to avoid risk of breast cancer and neutral descriptions of BSE procedure. Response-efficacy, the perception that the recommended response is an effective and feasible way to avoid the threat, was determined to be present in messages dealing with the effectiveness of BSE in detecting abnormalities, early detection being the key to survival, and how often women should perform BSE.

Table 2.1 below indicates that in the two articles from the Parents magazine analyzed, a total of 56 statements were identified that portrayed threat and coping components. Self efficacy had 21.4% messages, 19.6% response efficacy messages, 34% severity and 25% vulnerability messages (n=56). This translates to 59% of threat messages and 41% coping messages. In the eight Daily Nation newspaper articles, a total of 93 statements with threat and coping messages were identified. Out of these, there were 9.7% self efficacy messages, 3.2% response efficacy, 63.4% severity and 23.7% vulnerability. This therefore meant that coping appraisal was in 12.9 % of the messages while threat appraisal was in 87.1% of the messages. In The Standard newspaper, a total of 101 messages were identified. Out of these, 3% had self efficacy, 4% response efficacy, 71.3% severity and 21.7% vulnerability. The Standard had therefore 7% coping appraisal messages and 93% threat messages. Out of 250 messages analyzed, there was 60% severity, 23.2% vulnerability, 9.6% self efficacy and 7.2% response efficacy.

Table 2.1: Threat and coping components in media messages

Threat and coping components media messages			
	component	**n**	**%**
Parents magazine n=56	Severity	19	34%
	Vulnerability	14	25%
	Self efficacy	12	21.4%
	Response efficacy	11	19.6%
Nation newspaper n=93	Severity	59	63.4%
	Vulnerability	22	23.7%
	Self efficacy	9	9.7%
	Response efficacy	3	3.2%
Standard newspaper n=101	Severity	72	71.3%
	Vulnerability	22	21.7%
	Self efficacy	3	3%
	Response efficacy	4	4%

2.2 Perception of Individual PMT Constructs

As far as the analysis of individual constructs, table 2.2 below indicates that vulnerability was represented by morbidity at 11.2% and risk factors to breast cancer at 12% of the total statements. Severity was represented by 22.8% mortality rates, 12.8% treatment options, 7.2% costs of the disease and 17.2% emotional and physical suffering. Self efficacy in all the articles analyzed was present in 5.2% in the ability to perform BSE, 0.4% in ways to avoid the risk and 4% in description of BSE procedure. Response efficacy was in 2% for the effectiveness of BSE, 3.2% in early detection as the key to survival and 2% for the frequency of performing BSE.

Table 2.2 Perception of individual PMT constructs

PMT components	constructs	n	%
vulnerability	morbidity	28	11.2%
	risk factors	30	12%
severity	mortality rates	57	22.8%
	treatment options	32	12.8%
	costs of the disease	18	7.2%
	emotional suffering	43	17.2%
self efficacy	ability to perform BSE	13	5.2%
	ways to avoid risk	1	0.4%
	BSE procedure	10	4%
response efficacy	effectiveness of BSE	5	2%
	early detection for survival	8	3.20%
	frequency of BSE	5	2%

2.3 Overall Threat and Coping Appraisal in the Print Media

Figure 2.1 below indicates that overall, the media messages analyzed show that there were a total of 250 messages with threat and coping components. Out of these, 9.6% had self efficacy, 7.2% response efficacy, 60% severity and 23.2% vulnerability. Severity was therefore the most common message in the print media on breast cancer while response efficacy was the least.
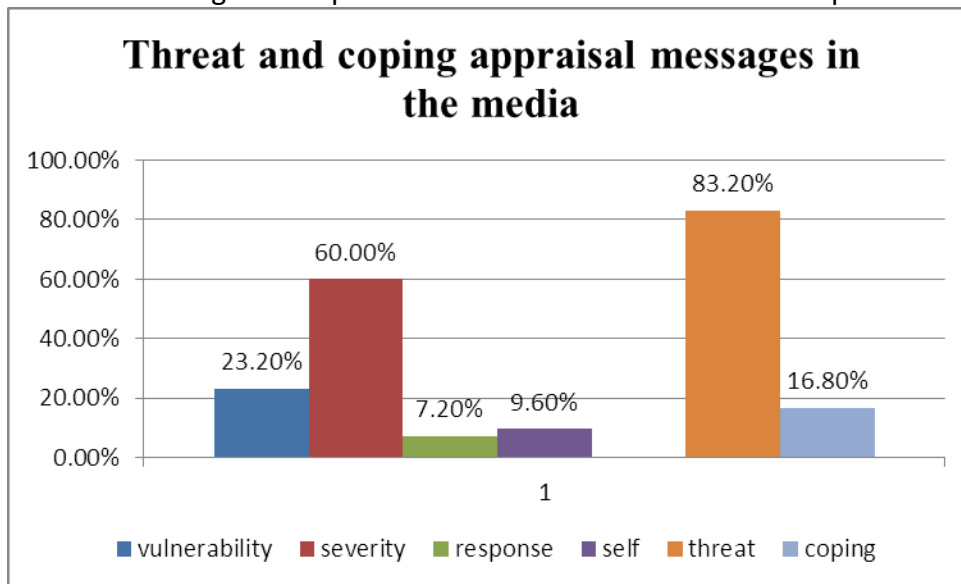

Figure 4.1 Threat and Coping appraisal in the Media

Summary

The content analysis revealed that the media messages circulated carry more messages on threat at 83.2% and less of coping efficacy at 16.8%. This shows that the media messages have a lot more threat than coping appraisal, yet the protection motivation theory states that if threat is higher than coping, the message evokes fear and therefore boomerang effect (Rogers,

1983). The level of severity in the messages is very high, with vulnerability, self and response efficacy low indicating that there is the need to review the messages in order to balance the fear appeal message components so as to be effective as indicated in the PMT theory.

Conclusions

The results of the study revealed that there exists a challenge of breast cancer that called for attention. The content analysis revealed that the media messages circulated carry more messages on threat at 83.2% and less of coping efficacy at 16.8%. The level of severity in the three editions under study was high, while response efficacy was least. In terms of individual constructs, the print media emphasized more on the mortality rates resulting from the disease and the challenges patients go through while undergoing treatment, thus raising the levels of threat. The least emphasized constructs were ways to avoid risk, the effectiveness of BSE together with its effectiveness in early diagnosis, thus the response efficacy and self efficacy remain low in the population.

With levels of threat high and coping appraisal low in the media messages, it is unlikely that the messages will motivate breast self examination. According to protection motivation theory, a fear appeal is only effective if it uses both threat and coping appraisal with equal frequency, yet the analysis here indicated a lopsided use of these components. There is therefore imperative that messages are theory based in their design if they are to achieve the intended results. With the messages the way they are, it is likely that they results in denial, and the targeted recipients avoiding the messages since they do not provide sufficient information on how to tackle the threat of breast cancer, thus resulting in the boomerang effect as stated in protection motivation theory. It is however interesting to note that the Parents magazine had a rather balanced threat at 59% and coping at 41%. This was in contrast to the Standard newspaper with a loop sided threat at 93% of the messages to coping appraisal at only 7% meaning that the newspaper messages are poorly designed.

Recommendations

Based on the findings of the study, the researchers make the following recommendations.

1. The study recommends that message designers should ensure that the amount of severity of the disease and therefore that of threat is lowered. A health risk, no matter how severe or no matter how vivid and scary the negative consequences are, people are unlikely to change intentions and behavior unless individuals feel vulnerable. This would mean that new campaign messages should be designed aimed at changing the high severity of breast cancer. New campaign messages on breast cancer should be prepared to raise self and response efficacy to motivate breast self exams.

2. An examination of print media messages outside the breast cancer awareness month, other print media written in other languages other than in English and other media besides print should also be examined to compare the presentation of the messages in order to help making better informed decisions on the design of breast cancer messages.

Acknowledgement

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