

Breast cancer screening advertisements: What element is more persuasive?

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This research investigates the elements of breast cancer screening advertisements that resonate with women. The study is based on how women process information based on their level of interest and involvement with the topic which determines if the message is processed centrally or peripherally. Thirteen different breast cancer screening adverts are presented to twenty-two women and semi-structured interviews are conducted to evaluate the level of authoritative, credibility, emotional appeal, and persuasiveness. The thematic analysis of the concepts shows that attitude towards breast cancer screening ads is shaped by how well audiences comprehend breast cancer risks and screening benefits. The study also shows that women are encouraged to have check-ups when they see a positive advert that includes reliable data around breast cancer, and when a celebrity who is in alignment with the cause is involved. The findings contribute to the customization of breast cancer communications to increase screening numbers.

Keywords: breast cancer, advertising, messages, persuasive, screening

Introduction

In the domain of health behaviour research, one finds ambivalence over the value of theory in explanations of behaviour, in the development of health-promoting interventions, and in translating research into practice. There is an emerging scholarship dedicated to investigating the relationship between this construct and its impact on health beliefs and behaviours (He et al., 2018). Petty and Cacioppo (1986) found that high or low involvement with a topic could affect the information processing of a message (i.e., arguments and peripheral cues). Further, the issue of relevance can determine if the message is centrally or peripherally processed. In health-promotion marketing peripheral cues such as sacred symbols and intrinsic (ego) involvement with the matter at hand may affect how individuals process the messages.

Breast cancer is the most common cause of death due to cancer in women throughout the world. There is no absolute way to prevent this cancer, so screening for early diagnosis is essential (Berry et al., 2005). Educating women about their breast cancer risks, symptoms and self-detection has the potential to increase risk reduction across the age trajectory and increase earlier detection (Bea et al., 2023).

However, when it comes to the message frame there are some differences as to how breast cancer screening promotion is displayed, compared to other types of cancer screening. This is because the breast is an external symbol of femininity. Although occurring in similar age populations as breast cancer, ovarian and endometrial cancer are far less common, and there is far less awareness of either disease. As a result, women may identify with others who have suffered from breast cancer because the breast is an external organ. The ovaries and uterus are internal organs that may engender less personal identification (Harvey & Strahilevitz 2009). Also, internal organs cannot be easily associated with simple and visible materials like bras or t-shirts. Thus, breast cancer awareness and screening are easier to visualize in marketing material.

Despite the campaigns aimed at raising awareness about breast cancer, studies indicate that many women still lack knowledge about the disease and its risk factors (Sun et al., 2022). This underscores the importance of efficient awareness campaigns to bridge the knowledge gap and promote preventive actions.

This research paper is part of the first deliverable of a project that is funded by the Hellenic Foundation for Research and Innovation and investigates breast cancer screening promotional messages from a neuromarketing point of view, with the use of eye tracking and face reader technologies.

Literature review

Social Advertising Message Strategies

Across different cultures, the effectiveness of social advertisement messaging can vary depending on whether an official, persuasive, or emotive approach is employed. The selection of attitude in breast cancer advertisement messaging should ultimately rely on a comprehensive understanding of the target demographic (Qader et al., 2022).

Authoritative approach in social advertisements

The authoritative approach in social advertisements pertains to a communicative approach that is aggressive and straightforward, frequently expressing ideas in a manner that is meant to be considered credible and competent (Richey, 2012). This method generally involves offering data or proof in a way that suggests expertise on the topic, with the aim of convincing the audience to have faith in and adhere to the advice or proposals being advocated.

Credibility in social advertisements

Credibility in social advertising messages pertains to the perceived reliability and knowledge connected to the source of the message. Within the realm of social media promotion, this signifies that individuals are more prone to being swayed by messages that they perceive to originate from trustworthy and well-informed authorities. For an advertisement to be successful, viewers must perceive both the message and the source as trustworthy and authoritative about the topic that is being advertised (Chang et al., 2015). The level of credibility has a substantial impact on the persuasiveness of an advertisement and the audience's reaction to it. (Chang et al., 2015).

Emotional appeals in social advertisements

Emotional appeals in social advertisements are signals that attempt to convince the target demographic by evoking their feelings rather than relying on rational or logical justifications (Casais & Pereira, 2021). These emotions can span a spectrum, including positive emotions like feelings of joy and optimism as well as negative emotions like fear and anxiety. The purpose of these emotions is to establish an emotional bond among the spectators, which in turn inspires them to modify their behaviour on social concerns (Casais & Pereira, 2021).

Persuasive messages in social advertisements

Persuasion refers to a deliberate effort to alter the actions and beliefs of recipients with logical and rational expressions (He et al., 2018). Persuasive messages prioritise the advantages of effective communication with recipients (Lee, 2010). The use of persuasion is crucial in social advertising, as its goal is to modify or influence consumers' perspectives, beliefs, and actions (Camarero & San José 2011).

Methodology

Semi-structured interviews (SSI) are widely regarded as a highly effective approach for systematically gathering qualitative and quantitative data because it allows to gather responses that are not limited or constrained (Blandford, 2013). A total of twenty-two female respondents were interviewed for this study. Consent was given in accordance with the regulations outlined in the General Data Protection Regulation (GDPR). The interviews had varying durations, ranging from 45 minutes to one hour.

The survey that was used for the interviews contains both close-ended and open-ended questions [Table 2 near here]. In addition, thirteen breast cancer screening

advertisements were shown to women to evaluate them in terms of authoritativeness, credibility, emotional impact and their effectiveness in persuading the audience. All advertisements were derived from internet sources, and some are in English, while others are in Greek [Figures 1-13 near here]. The aim is to cover all possible types of appeal and present a diverse portfolio of adverts, ranging from emotional messages, to persuasive, and authoritative messages. The interviews took place at the premises of the National and Kapodistrian University of Athens in February 2024.

The responses were recorded with the automated transcription software Otter and examined using the thematic analysis approach (Terry & Hayfield, 2021). Upon completion of the interviews, coding and sorting operations were performed [Table 1 near here]. A skilled translator, highly proficient in both Greek and English, transcribed the collected materials to minimize the possible impact of bias.

Results

A significant majority of survey participants, specifically 82%, reported being married and most of them have at least one child. A noteworthy proportion of the participants (72.7%) are over the age of 61, while 18.2% of them are 51–60 years old and 9.1% are 40-50 years old. The age distribution of the sample is optimal, as, according to data from the largest breast cancer support group, 8 out of 10 cases of breast cancer are diagnosed in women aged 50 and over (Breast Cancer Now, 2024).

Table 1 shows the interview output, which includes the classification of codes according to the specific observed concept. Each person exhibited a high level of knowledge and skill in undergoing diagnostic tests for breast cancer, such as mammography or ultrasound. They are acquainted with the concept of breast cancer, which is known to be fatal. Based on the observed data, most women believe that breast

cancer screenings lead to a reduction in the number of deaths. The occurrence of false-positive results in these examinations, however, is anticipated to have no significant dependence on individuals' inclination and intention to perform the screening tests. Most women believe that an excessive diagnosis occurs when a condition is diagnosed that would not have caused harm or symptoms during a woman's lifetime.

Previous studies indicated that self-examination is the most important step in identifying cancer in early stages (Hasani et al., 2011). Yet, 27% of the interviewees think otherwise as they believe that women are not trained to identify irregularities and *'there is always a chance that [they] miss an important finding that can be otherwise found in clinical examination'* [Table 1 near here].

Furthermore, it is disclosed that only a small number of participants exhibited feelings of anxiety regarding a decision related to previous examinations of breast cancer. Specifically, two respondents said that they are anxious of the possible *'level of radiation'* they might get during a mammography. The interviewees do not exhibit any discernible adverse effects of screening and highlight the notable outcomes of the check-ups.

Regarding what participants consider to be an authoritative, credible, emotive, and persuasive message for breast cancer screening, the research findings suggest that effective breast cancer screening campaigns, which are both credible and emotionally impactful, play a vital role in shaping consumer attitudes and behaviours. For example, the adverts that are presented in Figures 1 and 3 both received many negative comments regarding their credibility, authoritativeness, unsuccessful emotional appeal, and ineffective persuasive messages. In specific, respondents said that they felt *'terror'*, *'panicked'* or being *'forcefully terrorised'* that they will lose their breast if they are not tested. In fact, eight respondents noted that *'showing molded fruits is a very ineffective*

way to persuade women to get tested', because *'mold cannot be removed from fruits'*, or *'there is nothing you can do to make a molded fruit become edible again'*. It needs to be highlighted that both adverts won a Clio Advertising Award, but the interviewees seemed to have negative feelings when looking at them.

In the same vein, some women said that the advert shown in Figure 5 (another Clio Award Winner) is ineffective as there is no association between women and car tyres. One interviewee even mentioned that *'this advert is clearly designed by a man and is very sexist or discriminative'*. Another woman said *'this will not persuade me to get tested as there is no credible source and I cannot associate with tyres'*. Lastly, a few women said that *'if one tyre is missing, the car can't be driven, but women can live with one or none of their breasts, so I think this poster shows a very unsuccessful message'*.

On the other hand, the picture of a healthy, senior lady in Figure 7 received positive comments. All interviewees found the advert authoritative and credible as *'it is designed by the NHS'* and *'includes statistics that are good to know'*. They also said that *'the young lady and baby at the background touched [me] as, I believe, the main message here is to get tested not just for yourself, but the ones you love'*. Clearly, there is some connection between the interviewees and a picture with healthy, smiling women in it.

Regarding the adverts that are designed by the Greek Ministry of Health and Greek charities, the respondents' feelings are mixed. For example, Figure 9 shows a dialogue between a school kid and his mum: *'-Mum, can you help me do my Maths?, -I have my screening appointment today. Why don't you do your Maths and we will have a look at it later?'*. A few respondents said this is a message that *'shows women that they should prioritize their health'*, as *'if I am not healthy, I will not be able to support my child in the long run'*. However, four respondents did not like the message. They said that

'my children always come first no matter what', and 'letting my child down is not a good message', or 'I am sure I can find time for my screening tests when my child is at school so I will not let her down when she asks for help'. This is an example of a message that can be interpreted in different ways, based on people's experiences and values. This is in line with past research from Petty and Cacioppo (1986) who found that depending on whether an individual is highly or lowly involved with a topic (e.g. family structure), this could affect the information processing of a message (i.e., arguments and peripheral cues). 67% of the respondents said that this advert is credible and authoritative since it was designed by the Greek Ministry of Health.

Additionally, women found Figures 10 and 12 as credible, authoritative, and persuasive (100%) because *'they all include valuable statistics'*, and only 32% found them emotional because *'they try to convince us to get tested with appeal to logic, not to the heart'*. Two women also said that *'[they] are touched by the reference to Fofi Gennimata'* who was the president of the social party in Greece, she battled with breast cancer for many years, and lost her life recently.

Lastly, Figure 13, which is designed by a breast cancer charity, received scrutiny for the association between time spent on social media and time spent or not spent in looking for breast cancer information. Some women said that *'this is a strong message for the numerous hours we spent on valueless things while postponing important appointments'*. Other participants said *'[they] feel criticized for the time they spent on their phone, relaxing, or doing things they enjoy'*.

Discussion

The study highlights that ads using arguments, trustworthy references and positive emotional appeals are more successful in altering participants viewpoints and

encouraging them to book a breast screening appointment. The participants mentioned that the credibility of the ad builds trust, which leads to increased engagement. Additionally, the language and tone used in advertising messages had a significant impact on individuals' decisions to undergo breast cancer screening. Messages that incorporate authoritative arguments and reference reliable sources have a notable effect towards scheduling a health checkup. The findings underscore the importance of blending authenticity and persuasion in public service announcements to effectively communicate health prevention messages and achieve desired outcomes.

It was also found that the celebrity effect might play a role in persuading women to get tested. The well-known name of Fofi Gennimata, who passed away from breast cancer, excel at attracting attention and fostering a favorable view towards advertising since there is a clear alignment between her and the cause. Indeed, celebrity endorsement in advertising has a significant impact on the audience's morals, norms, and behaviours (Koengkan & Fuinhas, 2023).

The findings also show that women are more easily convinced to act by images that they can associate with. There is a lack of pictures of women in the selected Greek advertisements, even though we see that the only advert that showed a healthy woman received 100% positive comments. Also, negative associations with things are not appealing (e.g. tyres, fruits), and references to a woman's ability to balance family and personal care are not always viewed favourably. Our findings support those of Rosselli et al. (1995) showing that emotional reactions can influence people's perceptions and their willingness to take desired action.

Lastly, when the participants were asked to make some recommendations, they said that the use of media outlets like television and social media, as well as mother-child

health clinics, community health professionals, or even door-to-door education, can help spread awareness about breast cancer prevention.

Limitations and Future Research

The limitation of this article is that it deals with breast cancer screening advertisements from Greece and abroad. The research team had to sometimes explain and translate the content of the English adverts to the interviewees. However, the team ended up with those adverts after careful consideration of the Greek marketing material and its inability to address some of the marketing elements that were found in foreign adverts.

Future research can confirm our findings by providing wider scale, quantitative research that will leave room for the results' generalizability. Also, it will be interesting to see if women's attitudes towards breast cancer screening adverts change based on their area of residence (urban or rural areas), as people tend to be less informed or misinformed in rural areas.

Acknowledgments

The research project is implemented in the framework of H.F.R.I call "Basic research Financing (Horizontal support of all Sciences)" under the National Recovery and Resilience Plan "Greece 2.0" funded by the European Union –NextGenerationEU (H.F.R.I. Project Number: 15596).

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TABLES

Table 1: Coding from Semi-structured Interviews of the research

Source: Authors’ formation

Element	Description	Cases	%
FAMILIARITY	Familiarity refers to a state of profound knowledge or understanding the term breast cancer.	22	100%
Positive	Positive opinion refers to expressing a favourable opinion of breast cancer awareness and screening tests.	20	90.9%

Negative	A negative opinion or disagreement arises when an individual does not share the same viewpoint concerning the term breast cancer.	1	4.5%
Neutral	An unaffiliated expression of personal viewpoint with the term breast cancer.	1	4.5%
ATTITUDE	An individual's overall sentiment or attitude or a collection of convictions concerning the screening tests for breast cancer, such as mammography or ultrasound.	22	100%
<i>Advantages of screening</i>	The positive effects of diagnostic examinations concerning breast cancer.		
Positive	Positive refers to expressing a favourable opinion or agreement with the advantages of screening.	18	81.8%
Negative	A negative opinion or disagreement arises when an individual does not share the same viewpoint concerning the advantages of screening.	0	0%
Neutral	An unaffiliated expression of personal viewpoint with the advantages of screening.	4	18.2%
<i>Efficacy of checking choice</i>	The conviction that breast cancer screening offers potential benefits.		
Positive	Positive refers to expressing a favourable opinion or agreement with breast cancer screenings potential benefits.	15	68.2%
Negative	A negative opinion or disagreement arises when individuals do not share the same viewpoint concerning breast cancer screenings potential benefits.	5	22.7%
Neutral	An unaffiliated expression of personal viewpoint with breast cancer screenings potential benefits.	2	9.1%

<i>Significance of screening</i>	The importance of undergoing diagnostic examinations for breast cancer.	22	100%
Positive	Positive refers to expressing a favourable opinion or agreement with the importance of undergoing screening tests for breast cancer.	18	81.8%
Negative	A negative opinion or disagreement arises when an individual does not share the same viewpoint concerning the importance of undergoing diagnostic examinations for breast cancer.	0	0%
Neutral	An unaffiliated expression of personal viewpoint with the importance of undergoing diagnostic examinations for breast cancer.	4	18.2%
<i>Breast cancer screening message elements</i>	<i>Interviewees viewpoint on the elements of breast cancer screening messages that they have seen in the past</i>	22	100%
Authoritative	Higher propensity to retain and have confidence in the points of view conveyed through marketing materials when they were presented in an authoritative manner	22	100%
Credible	The credibility of breast cancer prevention messages had a positive impact on individuals' intentions to engage with the advertised content, such as sharing or following the promotion on social media platforms	18	81.8%
Emotive	Emotional communications have a more significant influence on capturing participants' attention and eliciting a strong emotional response.	15	68.2%
Persuasive	Advertisements utilising persuasive tactics such as compelling arguments, reputable sources, and emotional appeals proved more successful in changing participants' attitudes and motivating them to schedule a doctor's appointment for breast screening.	18	81.8%

Table 2: Sample of Questions and Quotes from Semi-structured Interviews

Source: Authors' formation

Sample Quotes from Semi-structured Interviews		
SSI-Question	Codes' Classification	Central idea-RQ- Reference
Q1: Are you familiar with the term breast cancer	PREVENTION IS NECESSARY	Familiarity
	THE CHANCES GROW AS YOU GET OLDER	
	CAUSE OF DEATH	
	FREQUENT EXAMINATIONS	
	PHENOMENON TO BE FACED	
	DIAGNOSIS SAVES LIVES	
	IF YOU DON'T CATCH IT, YOU CAN LOSE YOUR BREAST	
	YOU MAY LOSE A BREAST	
	HIGH MORTALITY	
	CAUSE OF DEATH	
Q2: Have you undergone diagnostic examinations for breast cancer, such as mammography or ultrasound?	Yes (all participants)	Experience
Q3: Are you classified as a high-risk demographic for the development of breast cancer?	Yes (8 participants)	Vulnerable Group
	No (13 participants)	
Q4: Do you believe that breast cancer screening holds potential advantages?	Yes (all participants)	Prevention Beliefs
Q5: Do you believe there is any potential hazard associated with conducting diagnostic tests?	Yes (1 participant)	Beliefs concerning the process
	No (21 participants)	
Q6: How important do you think each of the below is?		Beliefs around different types of examination
Mammography	Very important/Important (19 participants)	
	Quite important (3 participants)	
Physical examination by a doctor	Very important/Important (18 participants)	
	Quite important (2 participants)	
	Slightly important (2 participants)	
Self-examination	Very important/Important (16 participants)	
	Quite important (4 participants)	

	Slightly important (2 participants)	
Ultrasound	Very important/Important (18 participants)	
	Quite important (4 participants)	

FIGURES

Figures of existing breast cancer screening promotional messages



Figure 1

Source: Breast cancer ads / Behance



Figure 2

Source: Breast cancer ads / Behance



Figure 3

Source: Breast Cancer/ Breast Cancer • Ads of the World™ | Part of The Clío Network



Figure 4

Source: Breast Cancer/ Breast Cancer • Ads of the World™ | Part of The Clío Network



Figure 5
 Source: Breast Cancer/ Breast Cancer • Ads of the World™ | Part of The Clío Network



Figure 6
 Source: NHS UK



Figure 7
 Source: NHS UK



Figure 8
 Source: Athens Medical Group



Figure 9
Source: Mastografia.gov.gr



Figure 10
Source: Greek Government



Figure 11
Source: Greek Government



Figure 12
Source: Kathimerini newspaper



Figure 13
Source: Alma Zois, Breast Cancer Charity based in Greece

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Figure 1. Type your caption here. Obtain permission and include the acknowledgement required by the copyright holder if a figure is being reproduced from another source.