

Quantifying The Influence Of Media Interventions On Cancer Awareness: An Empirical Analysis

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Abstract

Purpose

In the contemporary era characterized by the proliferation of information and advanced means of communication, media interventions assume a paramount significance in the formation of public consciousness and comprehension pertaining to crucial matters concerning health. Thus, the purpose of this scholarly paper is to examine the influence of media interventions on the dissemination of knowledge among the general populace pertaining to the subject of cancer.

Research Methodology

The present study employs a quantitative methodology, incorporating primary data sources, supported by examination of the extant body of literature pertaining to media interventions, health communication, and cancer awareness. This has been facilitated through the administration of surveys to a heterogeneous sample of participants, encompassing a wide range of demographic characteristics and geographic locations. The utilization of this data collection strategy facilitates the investigation of the correlation between individuals' exposure to cancer-related media content and their corresponding level of awareness.

Statistical techniques have been utilized to discern and identify patterns and correlations present within the dataset. Moreover, the present analysis delves into the respondents' comprehension pertaining to risk factors, early detection modalities, treatment options, and overall comprehension of cancer as a pathological condition.

Finding

The findings lead to a valuable contribution to the field of health communication by offering insights into the effectiveness of media interventions in the dissemination of precise and influential information pertaining to cancer. The findings not only elucidate the degree to which media exposure impacts public consciousness, but also provide insight into potential deficiencies in understanding that can be remedied through focused interventions.

Implications

The comprehension of the intricate interplay between media content and cancer awareness holds the potential to provide valuable insights for policymakers, healthcare organizations, and media practitioners, enabling them to devise more efficacious campaigns. Through the process of identifying the media platforms that exhibit the highest efficacy in engaging diverse demographics, stakeholders can strategically allocate their resources and customize their messaging to achieve optimal impact. Moreover, this study contributes to the enhancement of

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media interventions by identifying precise domains of cancer awareness that necessitate further development.

Conclusion

This study provides invaluable insights into the pivotal role of media interventions in shaping cancer awareness among the general populace. The findings underscore the imperative for ongoing assessment and augmentation of health communication tactics to guarantee the dissemination of precise and current information to the general populace. In the ongoing global endeavor to combat cancer, the utilization of media as a tool for amplifying awareness and supporting in timely identification holds immense potential in altering its impact.

Keywords: *Media Interventions, Cancer Awareness, Communication Strategies, Health Communication, Public Perception.*

Introduction

A fierce foe that claims millions of lives worldwide, cancer continues to be a major public health problem. In addition to ground-breaking medical research and treatment, the fight against this complicated illness need extensive education and preventative campaigns. In the current digital era, when media is pervasive in our lives, it has become a powerful weapon for sharing knowledge and influencing public opinion. The impact of media interventions on cancer awareness has drawn more attention in recent years as people have become more aware of how it may impact them personally, their communities, and their access to healthcare.

Media interventions include a broad spectrum of tactics, from conventional media like print, radio, and television to the always changing digital world of social media, internet, and mobile apps. Through these interventions, many audiences may be reached with information on cancer risk factors, early diagnosis, prevention, treatment choices, and survivor tales. The complex impact of media interventions on cancer awareness will be examined in this introduction, along with their importance, efficacy, and prospective impact on outcomes for public health.

The influence of Mass Media: Conventional media, such as radio, television, and newspapers, have long shaped public opinion. They are especially useful instruments for conveying information about cancer awareness campaigns because of their capacity to reach broad and varied audiences. For instance, public service announcements, documentaries, and news pieces often appear on television programmes, successfully educating and bringing attention to cancer-related issues. Radio may reach areas with little access to other information sources due to its accessibility. Even if its impact is waning, print media still has a role in disseminating comprehensive information on cancer screening recommendations and risk factors.

The emergence of the internet and social media platforms in the twenty-first century has fundamentally changed how we consume information. Social media has evolved into a vibrant environment for cancer awareness initiatives. Organizations and individuals may share stories, interact with audiences, and mobilize support for cancer-related causes via platforms like Facebook, Twitter, and Instagram. Twitter users may take part in cancer awareness campaigns and share information virally by using hashtags like #BreastCancerAwareness and #NoShaveNovember.

Interactive websites and smartphone apps have become important centers for spreading cancer awareness outside of social media. Comprehensive websites are maintained by organizations like the American Cancer Society and Cancer Research UK, which provide a wealth of knowledge on different cancer forms, preventative techniques, and support options. Mobile applications provide users individualized tools for monitoring symptoms, getting access to

treatment information, and interacting with support groups, integrating cancer awareness into everyday life.

Impact on Public beliefs and Behaviours: Media interventions affect public beliefs and behaviours about cancer in addition to disseminating facts. Campaigns that have been well planned may lessen the stigma around cancer, increase routine screenings, and support healthy lifestyle choices. Stories in the media about cancer survivors' experiences and perseverance may encourage others to seek early diagnosis and treatment.

Although media interventions have a great deal of potential, there are obstacles to overcome and moral issues to consider. The people may become afraid and anxious because of the dissemination of false information and sensationalism. When media outlets choose dramatic tales over information based on facts, ethical issues emerge. In the field of cancer awareness, finding a balance between interesting material and ethical reporting is vital.

Literature Review

the awareness of, opinions on, and usage of information about cancer and health among the American population. HINTS data are used to develop more effective health communication strategies for various groups and to track developments in the quickly growing disciplines of health communication and health information technology National Cancer Institute, (2016). From 2010 to 2013, four types of breast cancer-related Internet searches were examined in the US. It was found that General information searches increased on the day of the announcement and stayed up during the following week compared to the previous six weeks. On the day of the announcement, risk assessment enquiries increased during the following week. Prior to the release, the volume of inquiries for genetics and treatments was low; nevertheless, on the day of the announcement, the volume, and continued to climb throughout the week by the start of the second week, the volume of each question category had returned to normal. After a week, the spike in inquiries that followed Jolie's unusual statement regarding breast cancer genetic testing and treatment methods subsided to preannouncement levels Nagler et al., (2010).

According to Smith et al. (2015) the "newsworthiness" of cancer screening is determined by newly developed tests and protocols, which may lead to a demand for new tests whose efficacy is unknown and undermine faith in reputable and successful screening programs. This is suggested by an analysis of print news stories on cancer screening. Viswanath (2012), is of the view that one probable reason for the cancer inequalities that have been widely documented in the literature is varying levels of knowledge about the etiology of cancer across SES groups. Affluence and education are linked to knowledge of the root causes of serious malignancies like lung and skin, which may help individuals take preventative measures and lower their risks. The statistics also demonstrate that although moderate notoriety or a lack of news coverage may exacerbate knowledge gaps, higher media attention may narrow them. Plackett et al., (2020) pointed out that Differences in knowledge levels of cancer causes among socioeconomic groups may contribute to reported disparities in cancer rates. High income and education levels are linked to increased awareness of major cancers like lung and skin, enabling individuals to take necessary precautions and reduce their risks. Heavier media attention can reduce knowledge gaps, while moderate publicity or lack of news coverage may widen them, according to the data. According to Ramírez et al., (2013) there is limited evidence of how race/ethnicity affects the relationship between fatalistic beliefs and knowledge of cancer risk factors. There is a lack of awareness about cancer risk factors among all racial and ethnic groups, and racial and ethnic minorities tend to have more fatalistic beliefs about cancer compared to non-Hispanic Whites. Positive implications were found for cancer education efforts.

Cline and Haynes (2001), were of the view that the prevalence of inaccurate information on interactive Knowledge Exchange Social Websites (KESWs) is a matter of concern due to its potential impact on the health behaviors of Internet users. Consequently, there is a need for the development of tools that may assist Internet users in effectively navigating the health-related content shared on these dynamic platforms, which are mostly created by users themselves. Further a study by Ramanadhan et al (2017). suggests that health discussion networks, including those related to tobacco control, may play a role in the impact of graphic health warnings on tobacco-related outcomes among individuals with low socioeconomic status. Further research is needed to explore this mechanism. Duguma et al., (2022), revealed in their study that A study found that women with breast cancer have low awareness, knowledge, and practice of mammography. Participants had a low level of knowledge about risk factors for breast cancer. A program is needed to raise awareness and promote the practice of mammography-screening tests among women. This can be achieved through various means such as mass media and campaigns. TASH is the sole oncology center in the country, attracting breast cancer patients from all over. Health care providers have a crucial role in sharing information about breast cancer and promoting early detection methods such as screening mammography. According to Hesse (2005), most people reported using the Internet as their first source of information, while only a small percentage relied on health care providers. People between the ages of 18 and 34 were significantly more likely to use the Internet as their primary source of information compared to going directly to providers. The same number of individuals aged 65 and older reported using the Internet as their first source of information compared to using providers as their first source. Most people reported using the Internet as their first source of information, while only a small percentage relied on healthcare providers as their first choice. People between the ages of 18 and 34 were significantly more likely to use the Internet as their first source of information, compared to going directly to providers. The same number of individuals aged 65 and older reported using the internet as their first source of information, **compared to those who relied on providers Petty & Cacioppo (1986). Supported by empirical** evidence and theoretical rationale, a study by Kreuter et al., (2017) identified variables that are likely to moderate narrative effects. Additionally, ethical issues that need to be addressed when utilizing narrative communication in cancer prevention and control efforts are raised. Furthermore, potential limitations of using narrative in this manner are discussed. In a study by Shim et al., (2006), It was identified that a total of 41% of the population was classified as low-scan/no-seekers, while 30% were classified as high-scan/no-seekers, 10% as low-scan/seekers, and 19% as high-scan/seekers. Knowledge of cancer was correlated with both scanning and seeking behavior. People who actively seek out cancer information are more likely to learn about the disease, make positive changes to their lifestyle, and have regular screenings. Further it was identified that There was a slightly significant positive correlation between cancer news coverage and information seeking ($p < 0.07$). The relationship was found to be significant only among respondents who paid attention to health news and those with a family history of cancer. A study found that some people actively seek more information during periods of increased cancer news coverage. However, this raises concerns about potential gaps in cancer knowledge and behavior among different segments of the population in the future Niederdeppe, et al (2008).

Basch et al., (2017) found out that most YouTube videos focused on general information about mammography, with 2/3 of them discussing how to prepare for the test. Very few cases involved examinations of other types. Around 30% of the participants talked about the pain experienced during the examination, while approximately 35.3% mentioned anxiety and 29.5% mentioned fear. 46.2% of the videos provided information on the test results. More than 25% of people discussed their medical or family history. Most people did not belong to a specific age group. Further research must be done on analysis of video information accuracy. Research by Evans (2005). demonstrated a strong alignment between the two-factor model and the data.

The findings indicate that there is a considerable positive link between the resistance score and unpleasant emotional reactions. Additionally, there is a strong inverse relationship between the resistance score and the persuasiveness score. Consequently, a metric was devised for the purpose of assessing the perceived quality of health-related messages.

Gap in Past Research

Though a lot of research could be found on health communication, but no research was found on studying the potential impact of media interventions on enhancing general health literacy, with a focus that extends beyond cancer-related knowledge. How can interventions improve people's ability to effectively navigate the wider healthcare system and make well-informed choices about their health?

Based on this research Gap the objective of this study was framed

Objective: To examine the Influence of Media Interventions on Cancer Awareness

To establish the given object the proposed hypothesis will be

Hypothesis

H0 (Null Hypothesis): there is no difference in the proportion of participants' response pre and post media intervention

H1 (Alternative Hypothesis): there is the difference in the proportion of participants' response pre and post media intervention

Research Methodology

The methodology of a study includes all the other parts, such as research design, methodologies, variables, instruments, and so on. Because it draws from both formative and summative research, the current study, titled "Quantifying the Influence of Media Interventions on Cancer Awareness: An Empirical Analysis" is considered mixed research in nature.

Insights into cancer-related health-seeking behavior via strategic media intervention are the subject of this exploratory study. Both the pilot research and the development of the strategic communication intervention relied on the results of the needs assessment conducted as part of the formative study. To determine who needs a program, how great their need is, and what options are available to meet that need, a needs assessment is conducted.

Results and outcomes of strategic media interventions are analyzed in this research. Summative and impact analyses were used to assess the study's success. Evaluations of outcomes measure how well a program, technology, or intervention meets the needs of its intended users. Quantifying the total results of strategic actions is what impact assessment is all about.

Sampling

A sample is a representative selection from a larger population. When a sample is collected from a larger population or universe, it is meant to be a statistical representation of that larger population or universe. The researcher here is using a non-probabilistic sampling technique called "Purposive Sampling"

Data Collection Tool

For data collection it is necessary to choose right form of data collection tools, keeping the research objectives into consideration qualitative data is being collected in the form of audio-

visual recorded interviews from doctors, oncologist, Pharmacologist, and Cancer Survivors. Based on these respective interviews three different documentaries have been made by researchers whose impact on masses is being studied. Experts whose audio-visual interview are recorded for the present study are:

- Prof. Shubhini Saraf, Professor- Department of Pharmaceutical Science, Babasaheb Bhimrao Ambedkar University, Lucknow.
- Dr. Rohini Khurana, Radiation Oncologist, Department of Radio Oncology, Dr. Ram Manohar Lohiya Institute of Medical Sciences, Lucknow.
- Dr. Geeta Khanna, Gynecologist & Obstetrician, Ajanta Hospital, Lucknow.
- Dr. Anand Mishra, Professor- Department of Endocrine Surgery, King George’s Medical University, Lucknow.
- Dr. Sudhir Singh, Associate Professor- Department of Radio Therapy, King George’s Medical University, Lucknow.

Three Documentaries based Strategic Media Interventions are:

- Know Cancer (encompasses information about Cancer, its Symptoms and Carcinogenic Agents)
- Can Cure Cancer (highlights diverse types of treatment availability in Lucknow with regard to Cancer)
- Can Break Cancer (Showcases Journey of three different Cancer Survivors; namely, Gluab Jahan-Eye Cancer survivor; Ram Singh-Blood Cancer Survivor and Sanjog Walter-Mouth Cancer Survivor).

Interview schedule has been established as a means of data collection from respondents keeping in mind the different aims of the study. The interview schedule for the population survey included both closed- and open-ended questions. Data from the Interview Schedule, both before and after the intervention, and the CAM -Cancer Awareness Measure are being collected.

Statistical Tool Used

McNemar-Bowker Test: To investigate the impact of media intervention among the participants involved in the study, the observations are recorded are paired therefore researcher had use McNemar- Bowker Test. The data used is categorical and the categories in the variables are more than two therefore researcher, which is another reason of Using this test.

Data Analysis and interpretation

Do you think persistent unexplained pain could be a sign of cancer?

	After				
Before	Don’t know not sure	No, it could be	Yes, it could be	Total	P-Value
Don’t know not sure	56	19	26	101	0.044
No, it could be	8	48	35	91	
Yes, it could be	14	34	160	208	
Total	78	101	221	400	

Table 1.1- Persistent unexplained pain could be a sign of cancer

From the above table it is clearly explained that P value is less than level of significance(0.05)

therefore **Null hypothesis cannot be accepted.**

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants think that persistent unexplained pain could be a sign of cancer.

Do you think unexplained bleeding could be a sign of cancer?

	After				
Before	Don't know not sure	No, it could be	Yes, it could be	Total	P-Value
Don't know not sure	65	15	25	105	0.031
No, it could be	6	52	35	93	
Yes, it could be	12	30	160	202	
Total	83	97	220	400	

Table 1.2- unexplained bleeding could be a sign of cancer

From the above table it is clearly explained that P value is less than level of significance(0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants think that unexplained bleeding could be a sign of cancer. Do you think a persistent cough or hoarseness could be a sign of cancer?

	After				
Before	Don't know not sure	No, it could be	Yes, it could be	Total	P-Value
Don't know not sure	62	27	44	133	0.0002
No, it could be	14	36	46	96	
Yes, it could be	15	37	119	171	
Total	91	100	209	400	

Table 1.3- a persistent cough or hoarseness could be a sign of cancer

From the above table it is clearly explained that P value is less than level of significance (0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media

intervention on the participants. Which indicates that participants think that persistent cough or hoarseness could be a sign of cancer.

Do you think a persistent change in bowel or bladder habits could be a sign of cancer?

Before	After			Total	P-Value
	Don't know not sure	No, it could be	Yes, it could be		
Don't know not sure	67	18	24	109	0.002
No, it could be	8	47	42	97	
Yes, it could be	7	34	153	194	
Total	82	99	219	400	

Table 1.4- A persistent change in bowel or bladder habits could be a sign of cancer. From the above table it is clearly explained that P value is less than level of significance(0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants think that persistent change in bowel or bladder habits could be a sign of cancer.

Do you think a sore that does not heal could be a sign of cancer?

Before	After			Total	P-Value
	Don't know not sure	No, it could be	Yes, it could be		
Don't know not sure	51	8	28	87	0.008
No, it could be	11	36	41	88	
Yes, it could be	8	39	178	225	
Total	70	83	247	400	

Table 1.5- A sore that does not heal could be a sign of cancer

From the above table it is clearly explained that P value is less than level of significance (0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants think that a sore that does not heal could be a sign of cancer.

Do you think unexplained weight loss could be a sign of cancer?

	After				
Before	Don't know not sure	No, it could be	Yes, it could be	Total	P-Value
Don't know not sure	65	2	16	83	0.016
No, it could be	9	70	30	109	
Yes, it could be	5	32	171	208	
Total	79	104	217	400	

Table 1.6- unexplained weight loss could be a sign of cancer

From the above table it is clearly explained that P value is less than level of significance(0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants think that unexplained weight loss could be a sign of cancer.

I find it embarrassing talking to the doctor about my symptoms.

	After						
Before	Agree	Completel yAgree	Completel yDisagree	Disagre e	Neithe r agree nor disagre e	Tota l	P-Value
Agree	19	6	1	12	7	45	0.001
Completel yAgree	3	47	3	6	9	68	
Completel yDisagree	8	6	52	12	10	88	
Disagree	4	3	3	65	12	87	
Neither agree nor disagree	18	3	7	21	63	112	
Total	52	65	66	116	101	400	

Table 4.7- I find it embarrassing talking to the doctor about my symptoms. From the above table it is clearly explained that P value is less than level of significance(0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants disagree with that they feel embarrassing talking to the doctor about their symptoms.

Would be worried the doctor wouldn't take my symptom(s) seriously.

Before	Agree	Completely Agree	Completely Disagree	Disagree	Neither agree nor disagree	Total	P-Value
Agree	37	2	2	16	9	66	0.001
Completely Agree	4	38	0	14	15	71	
Completely Disagree	1	2	28	8	6	45	
Disagree	6	1	1	71	15	94	
Neither agree nor disagree	13	9	5	22	75	124	
Total	61	52	36	131	120	400	

Table 4.8- Would be worried the doctor wouldn't take my symptom(s) seriously
From the above table it is clearly explain that P value is less than level of significance (0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants disagree with that they embarrassing talking to the doctor about their symptoms.

Do you think that smoking can increase a person's chance of developing cancer?

Before	After			Total	P-Value
	Don't know not sure	No, it could be	Yes, it could be		
Don't know not sure	33	7	34	74	0.00
No, it could be	7	29	26	62	
Yes, it could be	6	9	249	264	
Total	46	45	309	400	

Table 4.9- Smoking can increase a person's chance of developing cancer

From the above table it is clearly explained that P value is less than level of significance (0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants think that smoking can increase a person's chance of developing cancer.

Do you think that drinking alcohol can increase a person’s chance of developing cancer?

	After				
Before	Don’t know not sure	No, it could be	Yes, it could be	Total	P-Value
Don’t know not sure	45	7	38	90	0.00
No, it could be	4	42	38	84	
Yes, it could be	6	11	209	226	
Total	55	60	285	400	

Table 4.10- Drinking alcohol can increase a person’s chance of developing cancer

From the above table it is clearly explained that P value is less than level of significance (0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants think that drinking alcohol can increase a person’s chance of developing cancer.

Do you think that exposure to another person’s smoking can increase a person’s chance of developing cancer?

	After				
Before	Don’t know not sure	No, it could be	Yes, it could be	Total	P-Value
Don’t know not sure	53	20	33	106	0.00
No, it could be	4	54	27	85	
Yes, it could be	7	28	174	209	
Total	64	102	234	400	

Table 4.11- An exposure to another person’s smoking can increase a person’s chance of developing cancer

From the above table it is clearly explained that P value is less than level of significance (0.05) therefore Null hypothesis cannot be accepted.

From the above table, P value shows that there is the difference in the post media intervention on the participants. Which indicates that participants think that exposure to another person’s smoking can increase a person’s chance of developing cancer.

Conclusion

In conclusion, it is for the public to be informed of cancer warning signs and risk factors, and media intervention plays a significant role in doing so. It's obvious that risk factors like smoking and heavy alcohol use, as well as symptoms like chronic discomfort, cough, hoarseness, changes in bowel or bladder habits, non-healing sores, and unexplained weight loss, may all be early warning signs of cancer.

People are given the tools they need to notice symptoms and take preventative action by being educated about the warning signs and risk factors via media interventions. Campaigns in the media give a forum for frank discussion of these issues, removing the stigma and enabling people to seek help when they need it without delay. Lifestyle changes and risk reduction methods, such as not smoking and cutting down on alcohol intake, may be emphasized via media interventions. These campaigns may motivate people to make healthier options by reaching a large audience via a variety of media outlets and spreading the idea that individuals' choices have a major influence on their cancer risk.

In conclusion, media interventions are formidable movers in the war against cancer. They raise consciousness, provide knowledge, and hence impart agency. A person's ability to take charge of their health, get prompt medical assistance, and adopt lifestyle changes to lower their chance of getting cancer is enhanced when they have a thorough understanding of the symptoms and causes of the illness. To protect public health and improve results for people and communities around the globe, it is crucial that media campaigns continue to emphasize cancer awareness and prevention.

Future Scope of Study

The following research can be further to extend this work which will add benignity to academia and health industry-

Long-term impact assessment: comprehensive investigation is required to evaluate the enduring effects of media campaigns on cancer awareness, preventive actions, and health outcomes.

Digital divide and its impact on health inequalities: the impact of the digital divide on the efficacy of online cancer awareness efforts, as well as explore potential strategies to mitigate these discrepancies and promote equal access to information.

A study should be done to examine the impact of media campaigns on policy choices, budget allocations, and public support for cancer research and preventive initiatives.

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