

CANCER PREVENTION AND SCREENING ON YOUTUBE: A FOCUS ON MISINFORMATION

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BACKGROUND

- Improving understanding about ways to reach the public through this social media platform is emphasized by the reach achieved by YouTube on a daily basis.
- Each day, YouTube is visited by over 1 billion users.
- As the second most visited website in the world, there are almost 5 billion YouTube videos viewed every day.
- YouTube can convey information independent of reading literacy, which is low for a large proportion of the U.S. population, the same group experiencing health disparities for a wide range of acute and chronic public health problems, including a variety of cancers.

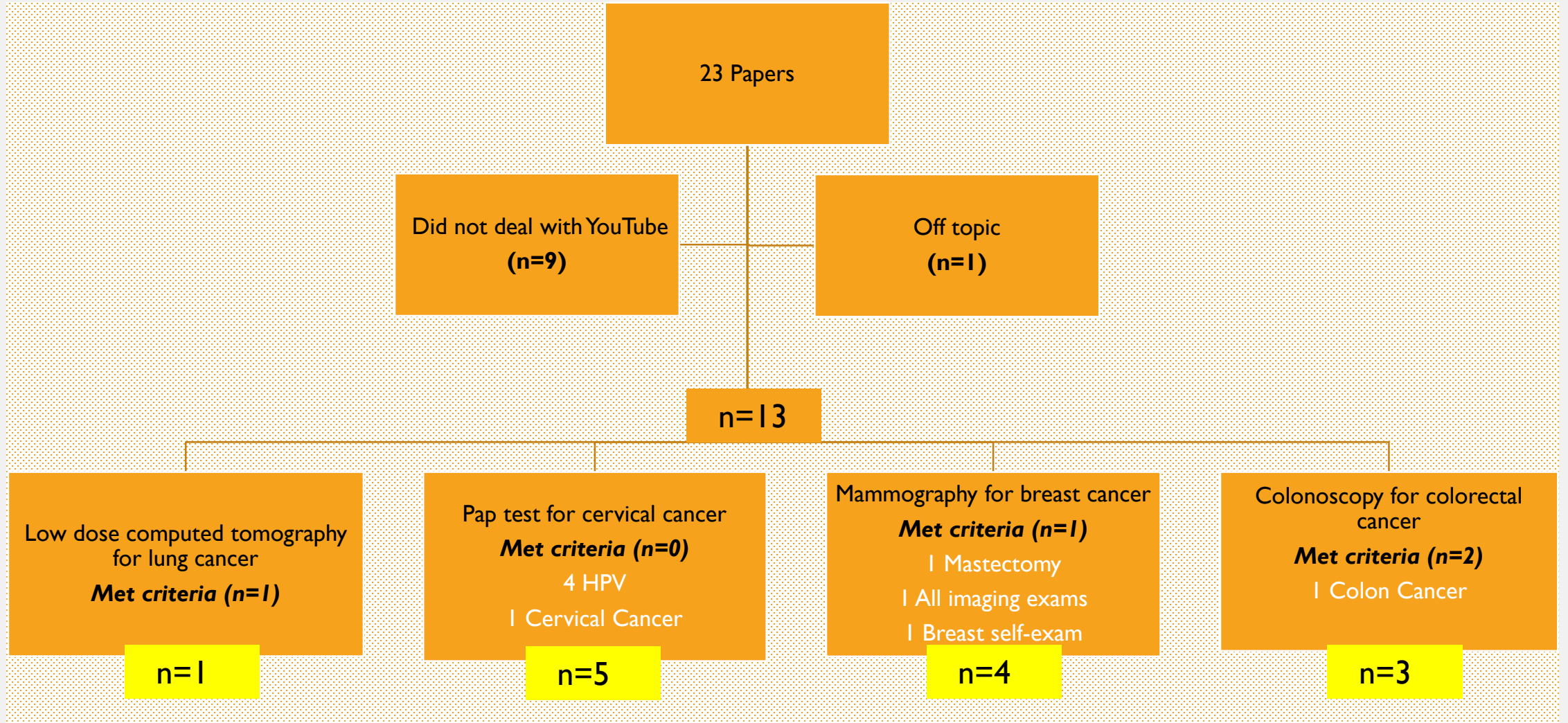
UNMET NEEDS & AIMS

- The aim of this presentation is to report on an examination of YouTube videos related to a set of cancer screening tests recommended by the United States Preventive Services Task Force (USPSTF), including:
 - Mammography for breast cancer
 - Colonoscopy for colorectal cancer
 - Pap test for cervical cancer
 - Low dose computed tomography for lung cancer
- In this presentation, a particular emphasis will be placed on identifying information on YouTube that is inconsistent with the USPSTF recommendations for cancer screening, or information that could be harmful.

IDENTIFYING STUDIES

- A search of PubMed, Scopus, and Web of Science searching YouTube and
 - Mammography for breast cancer
 - Colonoscopy for colorectal cancer
 - Pap test for cervical cancer
 - Low dose computed tomography for lung cancer

STUDY IDENTIFICATION



LOW DOSE COMPUTED TOMOGRAPHY FOR LUNG CANCER(LC)

Descriptives	Content	Source of Upload	Results	Conclusions
<ul style="list-style-type: none"> ➤ 123 videos ➤ 261,261 views across all videos 	<ul style="list-style-type: none"> ➤ LC screening process ➤ Risks and benefits of screening ➤ Screening guidelines ➤ Risk factors for LC ➤ Treatment options post diagnosis 	<ul style="list-style-type: none"> ➤ 92% were intended for patients ➤ 66% were created by medical institutions ➤ 17% by news channels 	<ul style="list-style-type: none"> ➤ 30% mentioned risks associated with screening 	<ul style="list-style-type: none"> ➤ “Most videos were produced for marketing purposes rather than educational and therefore should not be used as a substitute for SDM visits.”

MAMMOGRAPHY FOR BREAST CANCER

Descriptives	Content	Source of Upload	Results	Conclusions
<ul style="list-style-type: none"> ➤ 173 videos with over 2500 views ➤ ~ 25 million views across all videos 	<ul style="list-style-type: none"> ➤ Provision of general information, preparing for the test, other types of examinations included, mention of pain, mention of emotions (fear and anxiety), discussion of the last mammogram visit, receiving and processing results, having a medical or family history of breast cancer, and age that screening should begin. 	<ul style="list-style-type: none"> ➤ Consumers 41% ➤ Professionals 59% 	<ul style="list-style-type: none"> ➤ Categories for the information-related comments were humorous, informational, helpful, or disappointing, while those for the test-related comments focused on safety, pain, and concern about exposure to radiation. ➤ Approximately one-third discussed pain associated with the examination (35.3 %) and addressed issues of anxiety (32.4 %) and fear (29.5 %). ➤ On-line conversations took place more frequently after viewing consumer- versus professional-generated videos. 	<ul style="list-style-type: none"> ➤ “Public health education should also ensure that consumers are aware that the comments posted in response to YouTube videos tend not to be contributed by professionals, yet their content may draw attention to unsubstantiated claims.”

MAMMOGRAPHY FOR BREAST CANCER

“Do not get a mammogram if you have a lump/tumor it may break and spread.”

“It can be very painful.”

“They press you too flat and it is more than what is necessary. I think they enjoy hurting you.”

“If you expose yourself to ionizing radiation every year, don't be surprised to eventually find what you're looking for. Cancer rates are higher among screeners, and this is not because of more cases being detected.”

“Mammograms are the leading CAUSE of breast cancer! An annual exposure is asking for trouble!”

“How can anyone be sure that the exam is not what causes the lump? I will never have one.”

COLONOSCOPY FOR COLORECTAL CANCER (FOCUS ON PREP)

Descriptives	Content	Source of Upload	Results	Conclusions
<ul style="list-style-type: none"> ➤ 194 videos ➤ Included those with over 5,000 views ➤ ~13 million views across all videos 	<ul style="list-style-type: none"> ➤ Relating a personal experience ➤ General information ➤ Completing the preparation ➤ Types of preparation ➤ Palatability ➤ Pain ➤ Time required ➤ Disgust ➤ Embarrassment ➤ Sleep deprivation ➤ Hunger ➤ Difficulty and fear 	<ul style="list-style-type: none"> ➤ 50.5% consumer ➤ 49.4% healthcare professionals 	<ul style="list-style-type: none"> ➤ Compared with videos created by healthcare professionals, those created by consumers were more likely to address topics related to palatability of the purgative (21.9% vs 34.7%, $P < 0.05$), disgust (4.2% vs 15.3%, $P < 0.01$), and hunger (4.2% vs 15.3%, $P < 0.01$). 	<ul style="list-style-type: none"> ➤ “Many of the videos were related to personal experience. Some important topics (e.g., types of preparation purgatives, disgust, embarrassment, hunger, difficulty, fear and sleep deprivation) were not addressed by the majority of the videos reviewed.”

COLONOSCOPY FOR COLORECTAL CANCER (FOCUS ON PREP)

Descriptives	Content	Source of Upload	Results	Conclusions
<ul style="list-style-type: none"> ➤ 83 videos ➤ Included those with over 5,000 views ➤ Mean of 33, 158 Views 	<ul style="list-style-type: none"> ➤ Definition of bowel preparation ➤ Importance of bowel preparation ➤ Instructions on home medications ➤ Name of bowel cleansing agent (BCA), (5) instructions on when to start taking BCA ➤ Instructions on volume and frequency of BCA intake ➤ Diet instructions ➤ Instructions on fluid intake 	<ul style="list-style-type: none"> ➤ 27% patient testimonials ➤ 30% authoritative sources 	<ul style="list-style-type: none"> ➤ Developed a content scale ➤ 59 % of videos were low-content videos ➤ 41 % were high-content videos. ➤ Seven videos were misleading ➤ Misleading videos had, on average, five times the average number of views of all videos 	<ul style="list-style-type: none"> ➤ “In conclusion, most of the instructional videos on bowel preparation available on YouTube scored poorly on content.” ➤ Note example of misleading content: <i>Studies have found that drinking green tea regularly reduces the risk of colorectal cancer by 50% or BEVENTHE DOCTORS ARE SHOCKED [coconut oil] Kills 93% of Colon Cancer.</i>

PAP TEST FOR CERVICAL CANCER

- None exclusively about Pap test for cervical cancer screening
- One paper about cervical cancer
 - Adhikari et al. 172 videos about cervical cancer, 17% discussed screening, 3% had misleading content.
- Four papers about HPV/HPV vaccinations identified
 - Ache et al. 146 videos, 75% were positive about vaccination
 - Basch et al. 75 videos 13/34 videos addressing vaccination were discouraging
 - Ekram et al. 35 videos and comments. Most negative with anti-vaccination being more likely to be inaccurate.
 - Briones et al. 172 videos using Health Belief Model for analysis. Most were negative in tone, with more likes. Conspiracy theories were prevalent.

LIMITATIONS

- The search was not comprehensive, as this was conducted on a pilot assessment level by searching only 3 databases using an established set of key words.
- The search was only conducted by one researcher and one librarian.
- This topic may be covered in other studies that do not focus solely on the given screening tests.

SIGNIFICANCE

- Given the rapidity with which viewership and changes in videos occur, ongoing research is needed to inform policy and practice.
- Misinformation is present on YouTube videos cancer screening tests recommended by the United States Preventive Services Task Force (USPSTF), although the sample was too small to determine how extensive the problem is.

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FEEDBACK SOUGHT FROM THE AUDIENCE

- Some agencies of the U.S. Public Health Service have not uploaded videos that are widely viewed, and hence have not succeeded in using YouTube to help achieve their health education goals.
- There is no systematic effort underway to provide tracking on an ongoing basis to describe YouTube videos with respect to the sources, formats and content of widely viewed videos on important public health topics.
- **How might these issues be addressed?**
- **What are the implications of this?**

ADDITIONAL FEEDBACK SOUGHT FROM THE AUDIENCE

- **How can we address widely disseminated misinformation on social media?**
- **What are the key elements of YouTube videos that are more likely to be widely viewed? Can trusted agencies harness these elements?**
- **What are the key limitations of research on social media in general and YouTube specifically related to cancer prevention and control?**
- **What are priority research aims to improve understanding about social media and cancer prevention and control?**