

Conspiracy believers more likely to endorse mythical causes of cancer, finds study

December 21 2022



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People who believe in conspiracies, reject the COVID-19 vaccine, or prefer alternative medicine are more likely to endorse mythical causes of cancer than non-conspiracists but are less likely to endorse actual causes of cancer, finds a study in the Christmas issue of *The BMJ*.

These findings highlight the difficulty that society faces in distinguishing the actual causes of [cancer](#) from mythical causes owing to the mass information on the news and [social media platforms](#), say researchers.

Cancer is a leading cause of death worldwide, yet up to half of diagnosed cancer is preventable through lifestyle changes and vaccination, such as human papillomavirus (HPV).

Misinformation about what causes cancer can lead to people refusing to adopt such preventive measures. But no data exist on vaccination skepticism or conspiracy beliefs in relation to beliefs about and attitudes to [cancer prevention](#).

To examine this, researchers surveyed users of several popular online discussion platforms on their beliefs about cancer from January to March 2022. They asked participants to provide information on their age, gender, country of birth, country of residence, [education level](#), and whether their job was medical-related.

Questions on [health habits](#) and behaviors included a preference for conventional or alternative medicines, attitudes towards COVID-19 vaccination, smoking status, [alcohol consumption](#), weight and height, and personal history of cancer.

Further questions assessed conspiracy beliefs (flat-Earth or reptilian theories) and beliefs about both actual and mythical (non-established) causes of cancer based on the validated Cancer Awareness Measure (CAM) and CAM-Mythical Causes Scale (CAM-MYCS).

Responses were recorded on a five point scale ranging from "strongly disagree" to "strongly agree."

Actual causes of cancer included smoking, consuming alcohol, low levels of physical activity, getting sunburnt as a child, family history of cancer, HPV infection, and being overweight.

Mythical causes included eating food containing [artificial sweeteners](#) or additives and genetically modified food; using microwave ovens, aerosol containers, mobile phones, and cleaning products; living near power lines and feeling stressed.

After excluding incomplete questionnaires, 1494 responders were included in the analysis. Of these, 209 were unvaccinated against COVID-19, 112 preferred alternative rather than [conventional medicine](#), and 62 reported flat-Earth or reptilian beliefs.

Among all participants, awareness of causes of cancer was poor, although awareness of the actual causes of cancer was greater (median CAM score 64%) than that of mythical causes (42%).

The most endorsed actual causes of cancer were active and passive smoking, family history of cancer, and being overweight. The most endorsed mythical causes of cancer were eating food containing additives or sweeteners, feeling stressed, and eating genetically modified food.

Awareness of the actual and mythical causes of cancer among the

unvaccinated, alternative medicine, and conspiracy groups was lower (average 55% and 19% for actual and mythical causes, respectively) than among their counterparts (average 64% actual and 42% mythical).

Almost half (673; 45%) of the participants, whether conspiracists or not, agreed with the statement "It seems like everything causes cancer." No significant differences in this outcome were seen among the unvaccinated (44%), conspiracist (42%), or [alternative medicine](#) groups (36%), compared with their counterparts (45%, 46%, and 46%, respectively).

These are observational findings and the researchers acknowledge that their results may have been affected by "troll" or fake responses, which could overestimate conclusions, but also may be prone to other biases that could underestimate conclusions.

Nevertheless, they say this study is the first to show the possible patterns of beliefs about cancer among conspiracy believers and results on the overall endorsement of causes of cancer are mostly in line with previous studies.

The fact that almost half of the participants, regardless of other beliefs, agreed with the statement "It seems like everything causes cancer," highlights the difficulty that society encounters in differentiating actual causes of cancer from mythical causes owing to mass (veridical or not) information, note the researchers.

"These results suggest a [direct connection](#) between digital misinformation and consequent erroneous health decisions, which may represent a further preventable fraction of cancer," they conclude.

More information: Everything causes cancer? Beliefs and attitudes towards cancer prevention among anti-vaxxers, flat earthers, and

reptilian conspiracists: online cross sectional survey, *The BMJ* (2022).
[DOI: 10.1136/bmj-2022-072561](https://doi.org/10.1136/bmj-2022-072561)

Provided by British Medical Journal

Citation: Conspiracy believers more likely to endorse mythical causes of cancer, finds study (2022, December 21) retrieved 20 June 2024 from
<https://medicalxpress.com/news/2022-12-conspiracy-believers-endorse-mythical-cancer.html>

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