



Central European  
Digital Media  
Observatory



# Medical Disinformation on Weibo, the Chinese equivalent of Twitter

Coffee Beans

**Prof. RNDr. Vanda Boštíková, Ph.D., Prof. RNDr. Aleš Macela, DrSc.**

According to statistics from the National Central Cancer Registry, about 3.8 million new cancer cases and 2.3 million cancer-related deaths were diagnosed in China in 2014. Among women, breast and cervical cancers are the most common (1,2). With the ever-increasing use of social media, more and more people are using social networks to create, search and share cancer-related information. Incomplete data, disinformation and misinformation can influence individuals' attitudes and behaviour specifically in relation to the incidence of cancer, because in people's minds, cancer is associated with a fatal outcome (3).

An increasing number of individuals, especially women, are turning to social media to seek and share information related to cancer. This is primarily about prevention and treatment, but also about sharing experiences of their own illness. Many people are eager to get social support in coping with their illness and managing their emotions by sharing with similarly ill or cured patients. On social networks, they can then find a wealth of health information on specialist health portals written by health professionals, as well as a wealth of information created and disseminated by lay users based on their personal experiences of cancer.

It is quite conclusive that health information on the web can be effective in raising individuals' awareness of the disease and fostering communication between lay people and health professionals. In addition, such web-based health information can help individuals improve their access to certain diseases and enable them to prevent or manage chronic health conditions effectively. However, individuals may take great risks when using information obtained from web-based sources because health information on social media is not always accurate. Meta-analyses of information related to the spread of disinformation about health and disease, particularly disinformation related to cancer, significantly influence individuals' views on prevention and treatment. In addition, due to the information overload on social media, ordinary users may not have the resources, knowledge, and experience to assess the veracity of web-based cancer information and identify quality and credible sources on social media (3-6).

One of the analyses conducted in China used the Python Web Crawler analytical tool, a powerful technique for collecting web data by searching all URLs for one or more domains, to distinguish true information from disinformation. This technique was then used to extract a total of 2,691 tweets posted on Weibo, the equivalent of Twitter, between June 2015 and June 2016, related to two cancers - breast cancer and cervical cancer - from the networks. Two medical school graduate students with expertise in gynecological diseases coded each tweet and distinguished true from false information (7)

The majority (70%) of Weibo platform tweets regarding medical characteristics of breast or cervical

cancer provided medically accurate information, while the remaining thirty percent contained disinformation. Tweets related to cancer treatment contained a higher percentage of disinformation than tweets related to prevention. Disinformation related to prevention was more prevalent on social media than true information (see Figure).

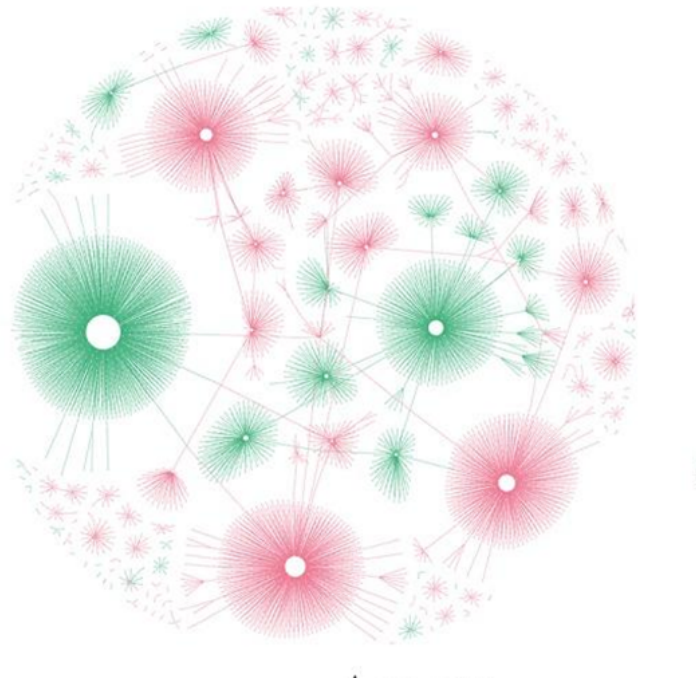


Figure legend: Comparison of the spread and chaining of false (red) versus true (green) information (L. Cheng, 2018).

The results of this study suggest that disinformation related to serious diseases on social media needs to be monitored and actively addressed, with the help of both service providers and physicians. It is particularly important to correct disinformation related to cancer prevention on social media and to increase the ability of social media users to judge the truth or falsity of web-based information. Just to illustrate, a study published by Dr. Johnson and colleagues in 2017 found that people with cancer who used alternative or complementary treatments instead of conventional medical care had a greater risk of death than people who received conventional cancer treatment. One commonly shared story with potentially harmful disinformation claimed that ingesting cannabis oil could cure metastatic lung cancer or aggressive breast cancer.

Therefore, it is important for physicians and other professionals to take an active role in sharing information online regarding the prevention, diagnosis and treatment of more than just cancer. Online discussion based on evidence and the latest science is the best way to inform the public through web-based networks.

In the current situation, it is imperative that health professionals, research and medical organisations, government agencies and technology and social media companies take responsibility for providing

relevant information to the general public. There are enough sources of information and tools available to disseminate it.



## References:

1. Chen WQ, Li H, Sun KX, Zheng RS, Zhang SW, Zeng HM, Zou XN, Gu XY, He J. Report of cancer incidence and mortality in China, 2014. *Zhonghua Zhong Liu Za Zhi*. 2018;40(1):5–13
2. Jiang X, Tang H, Chen T. Epidemiology of gynecologic cancers in China. *J Gynecol Oncol*. 2018;29(1):e7
3. Ayers SL, Kronenfeld JJ. Chronic illness and health-seeking information on the internet. *Health (London)* 2007;11(3):327–47
4. Eysenbach G, Köhler C. How do consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews. *Br Med J*. 2002;324(7337):573–7
5. Vogel L. Viral misinformation threatens public health. *CMAJ*. 2017;189(50):E1567
6. Vosoughi S, Roy D, Aral S. The spread of true and false news online. *Science*. 2018;359(6380):1146–1151
7. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9):1277–88