VIRAL HEALTH MISINFORMATION FROM GEOCITIES TO COVID-19

Kristy Roschke
Arizona State University

Michael Simeone
Arizona State University

Shawn Walker
Arizona State University

Djordje Padejski
Arizona State University

Anna Muldoon
Arizona State University

Major Brown
Arizona State University

Introduction

In our current historical moment, we have witnessed a notorious proliferation of health misinformation about COVID-19. Nearly everyone, irrespective of their political leanings, can cite an example of what they perceive to be misinformation about the ongoing global pandemic. And this is exactly the point: everyone thinks there are falsehoods, but everyone cannot agree on what exactly the falsehoods are.

This type of confusion is characteristic of successive waves of misinformation disrupting efforts to share information and coordinate a response to the pandemic. Cable news video clips, social media, and radical forums on the web helped to conduct all kinds of conflicting narratives and conspiracies. The ways we find and use information have adapted to the current information landscape; there is no doubt we have access to more information than ever before, but whether we are better informed remains an open question.

Many of the circumstances surrounding the coronavirus pandemic are unique, however it is not the first public health crisis of the Internet Age. The significance of this moment in time led us to wonder if COVID-19 misinformation practices can be connected to past public health crises. And if so, what can we learn about the role of internet technologies and ecologies in public health by studying this moment and those past?

This paper began as an investigation into early internet technologies and their relationship to the AIDS crisis in the 1990s. We sought to examine information shared in early internet communities about the AIDS epidemic to find connections between information sharing practices then and today, during the global coronavirus pandemic. When communications technologies change at such a rapid pace, it can be tempting to examine problems only in their current context. Examining health misinformation from a historical perspective, using an archive dataset of the popular 1990s and 200s online community GeoCities, widens our lens to better understand how people have been using technology to communicate important health information over time. This lens informed our research questions:

- What purpose/use does information regarding HIV on GeoCities serve?
- What characterizes the sensemaking practices of Geocities users pertaining to the HIV epidemic?
- Did affordances of the platform hinder or accelerate this sensemaking?
- What is the relationship between sensemaking and misinformation surrounding early HIV information posted on GeoCities?

Methods and Findings

When Yahoo announced in 2009 that it would be shutting down GeoCities, several archive initiatives emerged to try to salvage as much of the content and community kept there as possible. These efforts have collectively captured a portion of the original GeoCities neighborhoods, which can offer insights that are representative of the community norms that emerged during its existence. Researchers conducted a mixed methods analysis of two such archives, combining automated and manual search methods to refine the large dataset into pages related to HIV and AIDS and then conducting a Keywords in Context (KWIC) examination to find commonly used terms and relationships between terms. A qualitative analysis of a smaller subset or relevant GeoCities pages further elucidated key themes and provided additional context for the quantitative efforts.

Contrary to the authors' hypothesis, misinformation was not rampant in our dataset. Instead, what we found were attempts at communal sensemaking created by individuals and organizations. As one of the earliest widely adopted online communities, GeoCities content creators used their self-published pages to share information about HIV and AIDS, which at the time were still surrounded by considerable confusion, misconceptions, and prejudice.

Researchers identified two primary main categories to describe the functions of the pages:

- o **Supportive**. Pages in the supportive category focused on disseminating information for treating HIV infection and symptoms. Many of these pages

referenced well-known health and medical experts and/or contained links to outside sources.

- o **Preventative.** As in the supportive pages, the function of the preventative category was to compile and share information. In these pages, information focused on offering methods of preventing HIV infection; this included a mix of accurate information, such as safer sex practices, and incorrect prevention methods that, at times, seemed opportunistic.

Two less common but still prevalent categories found in the dataset are:

- o **Debunking.** Here, page authors address early misinformation or misconceptions about HIV in an attempt to debunk or correct it. The quality and veracity of that information varied, just as it does today. Again, links to other sources found within the pages were mostly broken and not part of the analysis.
- o **Malevolent.** The pages included in this group contained homophobic and hate-filled content, sometimes coupled with treatment and prevention "advice" that commonly frames HIV infection as a result of living a gay and high-risk lifestyle. Misinformation was more likely to surface on these pages in the form of value judgments and prejudice.

The four resulting categories found in our analysis help paint a picture of how GeoCities was used in the 1990s and early 2000s. Content contained in the archives was used primarily for sensemaking activities; GeoCities' neighborhood structure enabled people to communicate outside immediate real-world relationships but in a way that emphasized commonalities — whether these were proximal in a literal or figurative sense. It is unclear how interactive the GeoCities pages in the archive are since we do not have access to comments or links, but it is clear from the archive that GeoCities operated differently from other early forms of web user-generated content, namely bulletin board systems (BBS). Instead of prioritizing conversation, GeoCities pages have more of a one-way communication composition, thus giving the author control over what is shared in a more formal way. Many of the pages observed in the qualitative analysis were created by organizations—often from outside the U.S. — designed to share information and resources and promote events. The pages created by individuals often took on the same aesthetic of the knowledgeable resource provider.

By framing a comparison between past and present dynamics of health misinformation online, we looked to early AIDS-related content on archived pages from the Internet Archive's holdings for GeoCities. We hypothesized that given the many related hoaxes and myths circulating since the beginning of the AIDS epidemic, that early internet communities like GeoCities would be an obvious breeding ground for such misinformation, and would parallel or even anticipate the COVID-19 misinformation pandemic. While the early web that we surveyed was not devoid of false information, very little material in our data—from linking practices to rhetoric—resembled contemporary practices in misinformation. The research team encountered some instances of false claims about HIV and AIDS or malevolent content, but they were few and far between in comparison to current understanding of how misinformation spreads online today.