

Content Analysis of COVID-19 Vaccine and Infertility Tweets: The Etiology of a Misinformation Pandemic

Kelby N. Hunt, BS¹ ; Morgan S. Levy, BS¹ ; Sarah Rinehart, BS¹ ; Alyssa D. Brown, PhD² ; Alexander Zoroufy, BS³ ; Torie Comeaux Plowden, MD, MPH⁴

1. University of Miami Miller School of Medicine/Department of Public Health Sciences, Miami, Florida

2. University of Louisville School of Medicine, Louisville, Kentucky/Mayo Clinic School of Medicine, Rochester, Minnesota

3. Statistics & Data Corporation, Tempe, Arizona

4. Walter Reed National Military Medical Center, Bethesda, Maryland

Abstract

OBJECTIVE: To understand misinformation surrounding infertility and the COVID19 vaccine on Twitter by analyzing the prevalence and content of this misinformation.

DESIGN: This study involves content analysis of tweets from a public dataset to identify the etiology of misinformation.

MATERIALS & METHODS: Tweets included were from key points in the COVID19 vaccine discourse (July 2021 and December 2021) and contained at least one word related to COVID19 vaccination and one word related to fertility. Relevant tweets were analyzed for factuality. Descriptive statistics on followers, verification status, and engagement were obtained. Differences between the factual and misinformation groups were examined using ANOVA or Chi-square tests. Rates of factual vs misinformation tweets were compared to US COVID19 case counts and the most common hashtags and words were determined. Sentiment analysis was used to determine if tweets were positive, neutral, or negative.

RESULTS: Misinformation tweets rose from 29.9% in July 2021 to 45.1% in December 2021. The proportion of misinformation in July 2021 fell as daily COVID19 cases rose ($r=-0.50$, $p=0.01$), while relevant tweets mirrored cases ($r=0.53$, $p<0.001$). Accounts sharing factual information had more followers ($p<0.001$) and verified users were more likely to share factual tweets ($p<0.001$). Factual and misinformation tweets had similar engagement. Common hashtags in factual tweets included #getvaccinated and #vaccineswork, compared to #vaccinesideeffects and #vaccineskillingunbornbabies in misinformation tweets. Sentiment analysis found factual tweets were more positive and misinformation tweets more negative ($p<0.001$).

CONCLUSION: Misinformation about the COVID19 vaccine and infertility is a threat to vaccine uptake in patients desiring future fertility. Understanding the content, sentiment, and reach of tweets is vital to combat misinformation.

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