Methadone and Suboxone mentions on Twitter: Thematic and Sentiment Analysis

According to the latest medical evidence, Methadone and buprenorphine-naloxone (Suboxone®) are effective treatments for opioid use disorder (OUD). Despite their proven efficacy, these medications are underutilized for reasons such as treatment access barriers, stigma and misperceptions about their role in recovery. Little is known about the public perceptions about these medications and whether the experiences related with these medications differ, although these factors may also be associated with their underutilization.

Correspondence:
Abeed Sarker
abeed.sarker@emory.edu

Methods: Researchers conducted a descriptive analysis of a small and automatic analysis of a large volume of microposts ("tweets") that mentioned "methadone" or "suboxone". In the manual analysis, researchers categorized the tweets into themes and subthemes, as well as by sentiment and personal experience, and compared the information posted about these two medications. Researchers performed automatic topic modeling and sentiment analysis over large volumes of posts and compared the outputs to those from the manual analyses.

Findings:

- Three primary themes emerged from the 900 tweets analyzed: *access* (15.3% for methadone; 14.3% for buprenorphine-naloxone), *stigma* (17.0%; 15.5%), and *OUD treatment* (12.8%; 15.6%).
- Only a small proportion of tweets (16.4% for Suboxone® and 9.3% for methadone) expressed positive sentiments about the medications, with few tweets describing personal experiences.
- Tweets mentioning both medications primarily discussed medications for opioid use disorder (MOUD) broadly, rather than comparing the two medications directly.
- Tweets that mentioned both were analyzed to determine user attitudes toward MOUD. See Figure. 1 below. The bar graph illustrates "Equal" respondents.
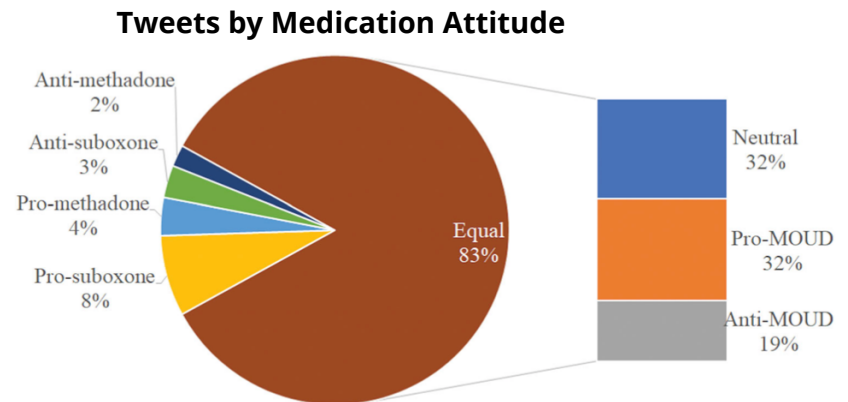
Tweets by Medication Attitude

Figure 1. Distribution of user attitude among Tweets mentioning both "methadone" and "suboxone".

Discussion: Through the analyses of a sample of Twitter posts mentioning methadone and Suboxone®, this study demonstrates that the discussions regarding the two medications are comparable, with the same major themes and many of the same sub-themes. Despite the proven effectiveness of these medications, there was little discussion related to their benefits in the treatment of OUD. This relative lack of discussion on Twitter may skew public opinion of these medications, and hinder efforts to engage patients in evidence-based treatments to address the opioid crisis. This also highlights one area of potential intervention by the healthcare community: there is a role for providers to engage with the public and participate in discussions surrounding MOUD on social media to share success stories and data regarding the benefits of these medications in treating OUD.