

Analysis of Twitter Content and Sources on Nitrous Oxide for Labor Analgesia

Presenting Author: Ryan Wang, MD, Icahn School of Medicine at Mount Sinai

Co-Authors: John Foote, MD, Icahn School of Medicine at Mount Sinai, Daniel Katz, MD, Icahn School of Medicine at Mount Sinai

Societal expectations have a significant influence on patient labor preferences.¹ Providers caring for obstetric patients can better educate patients by understanding and contributing to the broader conversation on nitrous oxide in pregnancy.² The goal of this pilot study was to analyze publically available Tweets related to the use of nitrous oxide for labor analgesia in order to characterize their content, sentiment, and user demographics.

We used twitterscraper, a script that accesses Twitter's search functionality, to retrieve Tweets using the search terms "(nitrous) AND (pregnancy OR labor OR obstetric OR birth)" on October 30, 2018.³ Data fields collected included Tweet text, uniform resource locator (URL), user handle, and date and time posted. Tweets were scored on text content and sentiment toward nitrous oxide use in pregnancy. The Twitter user posting the Tweet was also categorized.

For the initial analysis, 200 of the 764 returned Tweets (26%) were randomly selected and manually categorized. Of these, the earliest was posted April 2, 2009 and the latest October 15, 2018. 78 Tweets (39%) related to news media coverage of nitrous oxide use for labor. 48 (24%) were personal anecdotes or opinions. 9 (5%) Tweets were irrelevant and not included in further analysis. The sentiment of 93 Tweets (49%) were predominantly positive toward nitrous use for labor analgesia, 75 (39%) were neutral, 12 (6%) were negative, and 12 (6%) were primarily humorous. 81 (42%) of the Twitter users discussing nitrous oxide in pregnancy were laypeople, while 15 (8%) were peripartum healthcare providers.

Non-healthcare providers made up a large proportion of Twitter activity on nitrous oxide for labor. Studies have indicated there is physician concern that media and internet sources of medical information may contain inaccuracies or be difficult for patients to interpret.⁴⁻⁵ Obstetric patients may benefit from greater healthcare provider contribution to the online discussion of nitrous oxide use in pregnancy.

References:

1. Sutton CD, Butwick AJ, Riley ET, Carvalho B. Nitrous oxide for labor analgesia: Utilization and predictors of conversion to neuraxial anesthesia. *J Clin Anesth.* 2017 Aug;40:40-45.
2. Fragneto RY, Gaiser R. Labor analgesia: We need to better understand and educate our obstetric patients. *J Clin Anesth.* 2017 Sep;41:42-43.
3. <https://github.com/taspinar/twitterscraper>. Accessed Oct 30, 2018.
4. Chen X, Siu LL. Impact of the media and the internet on oncology: survey of cancer patients and oncologists in Canada. *J Clin Oncol.* 2001 Dec 1;19(23):4291-7.
5. Haneef R, Lazarus C, Ravaud P, et al. Interpretation of Results of Studies Evaluating an Intervention Highlighted in Google Health News: A Cross-Sectional Study of News. *PLoS One.* 2015 Oct 16;10(10):e0140889.