



# Exploring the Discussion of Nexplanon (Etonogestrel Birth Control Implant) on Twitter

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## INTRODUCTION

### BACKGROUND

- The Federal Drug Administration (FDA) has approved **malfunctioning medical birth control implants** associated with over 100,000 stillbirths
- Few studies have examined **tools to assess negative experiences** with approved medical devices already on the market, such as **social media**
- This pattern of dangerous devices being available for patient use, how it can be monitored and their propensity for malfunction is **unknown**

### PURPOSE

- This study examined **Twitter content discussing the medical birth control implant, Nexplanon, including differences in content over time**

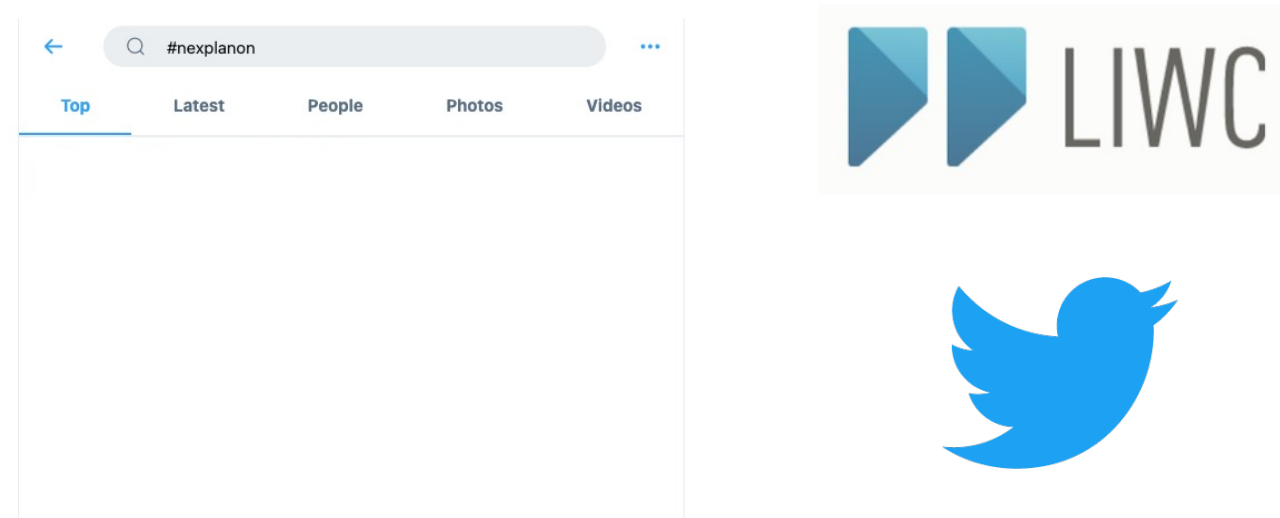
## METHODS

### DESIGN & SETTING

- This study was a **content analysis** of tweets under the search term #nexplanon

### SUBJECTS & DATA COLLECTION

- Top → 41 tweets
- Latest → 50 tweets
  - Inclusion Criteria:** Tweets that were posted by individual accounts, included content that resembled a patient experience
  - Exclusion Criteria:** Celebrity tweets, non-English tweets, promotional tweets and verified tweets. Tweets that did not describe a patient's experience.



### MEASURES

- Codebook Variables + Demographic Variables
- Linguistic Inquiry and Word Count (LIWC) Variables (tone, affect, positive, negative, anxious, anger and sad)

Codebook Variable	Definition	Example
Symptoms	Defined as a mention of symptoms following implantation or removal of Nexplanon	Hey if anyone on my list has taken #Nexplanon or knows someone who's taken it, could you PLEASE reply with whether or not it worsened your mental health? I'm tryna see something.
Positive Attitude	Defined as having a positive outlook but no mention of urging use of the device	I just wanna give a big shout out to #nexplanon implant
Negative Attitude	Defined as having a negative outlook but no mention of urging disuse of the device	Dealing with the pain and lack of use of my left arm from the removal and replacement of my #Nexplanon sucks but I 10/10 prefer it to periods or pregnancy. So...
Date of tweet	Defined as the date the Tweet was posted as listed on the Tweet	

### DATA ANALYSIS

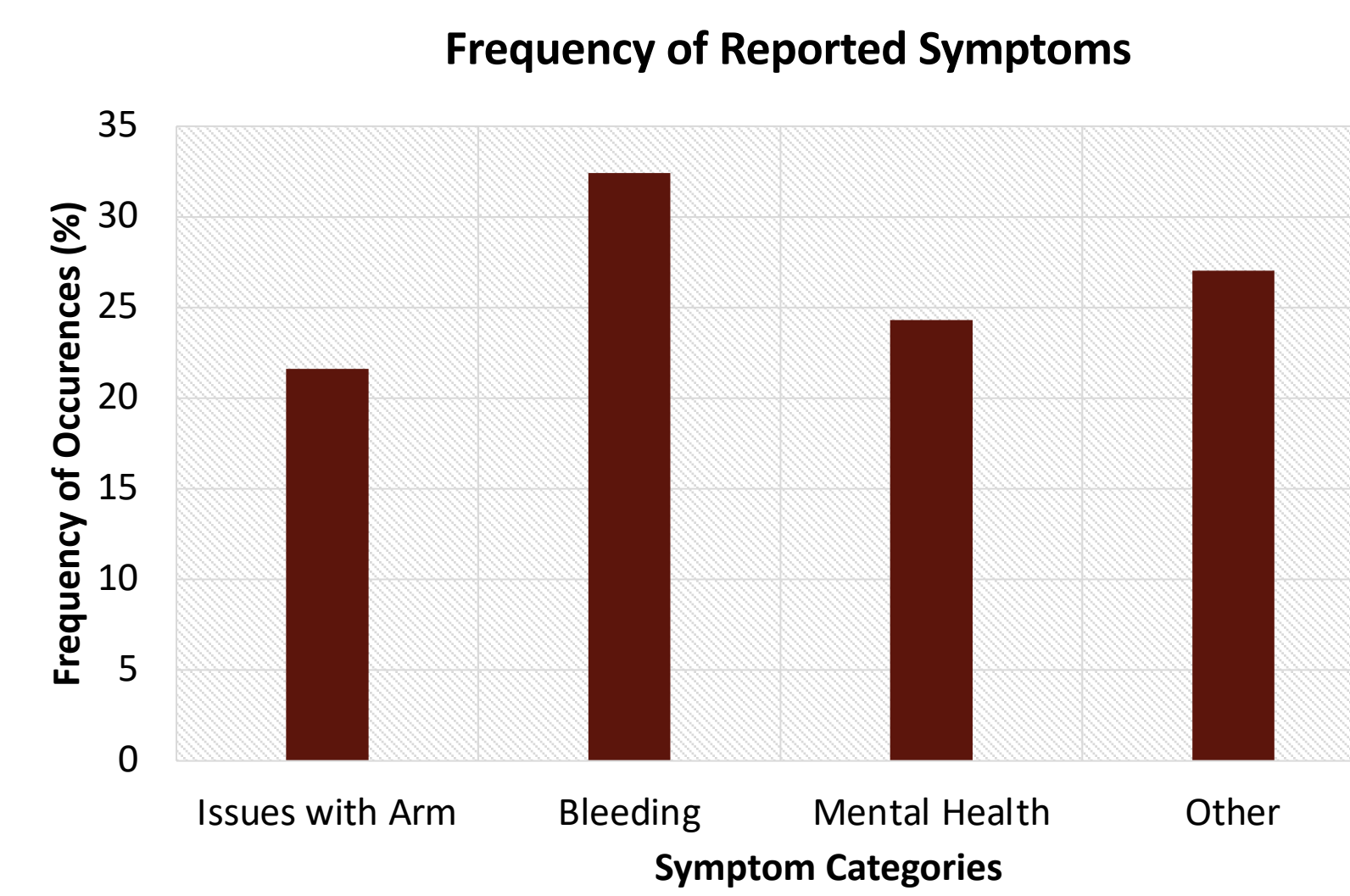
- $\chi^2$  test compared proportions of tweets showing positive and negative attitude between Top and Latest searches
- T-Tests assessed differences in linguistic elements between Top and Latest searches
- Pearson's Correlation test assessed associations between positive and negative attitude display and time

## RESULTS

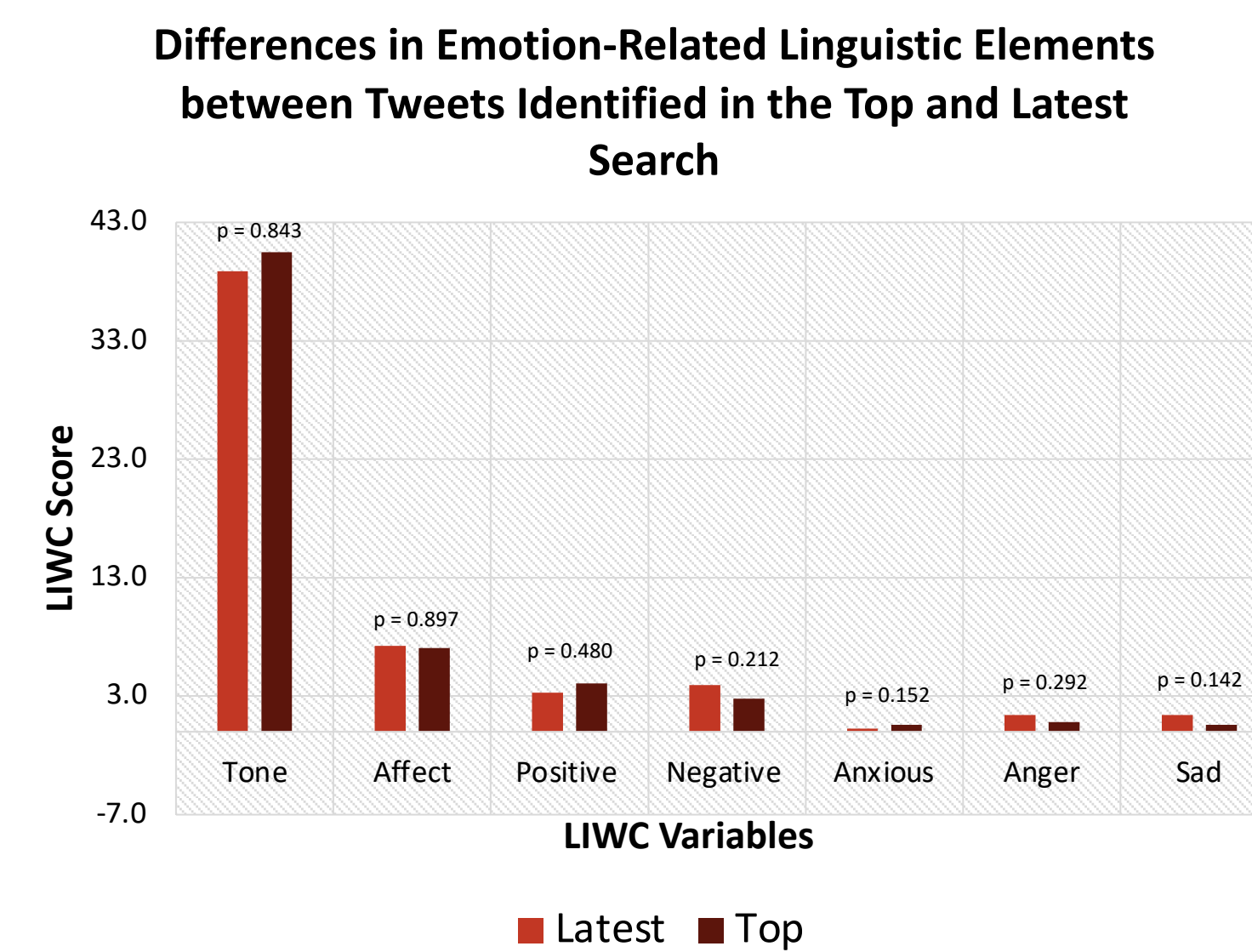
- A total of n = 91 tweets were recorded and analyzed ( $n_{\text{Top}} = 41$ ,  $n_{\text{Latest}} = 50$ )
- Tweets dates ranged from **2014 to 2021**

Year	Number of Tweets
2014	1
2015	1
2016	1
2017	1
2018	8
2019	11
2020	50
2021	18

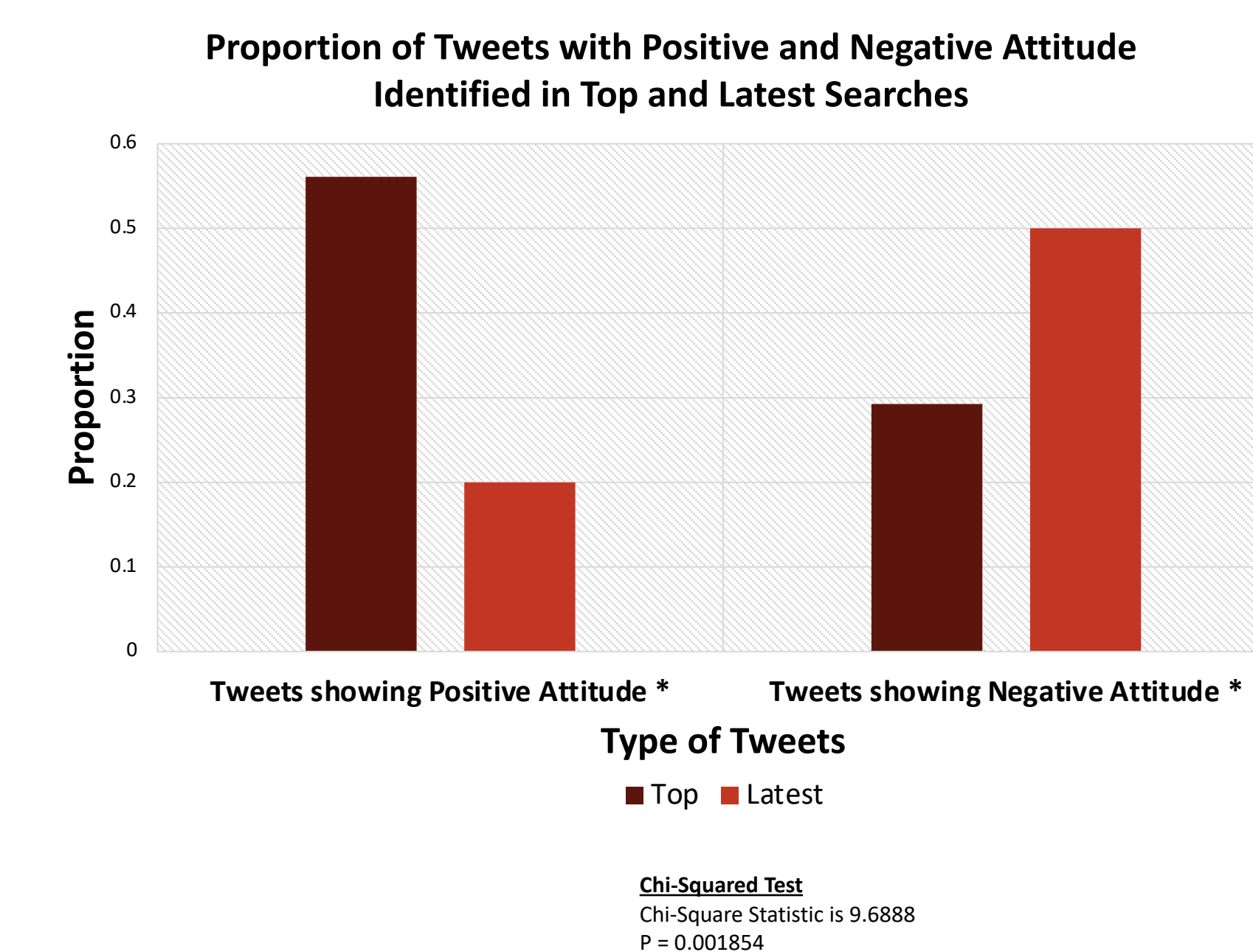
- Bleeding was the most common reported symptom**



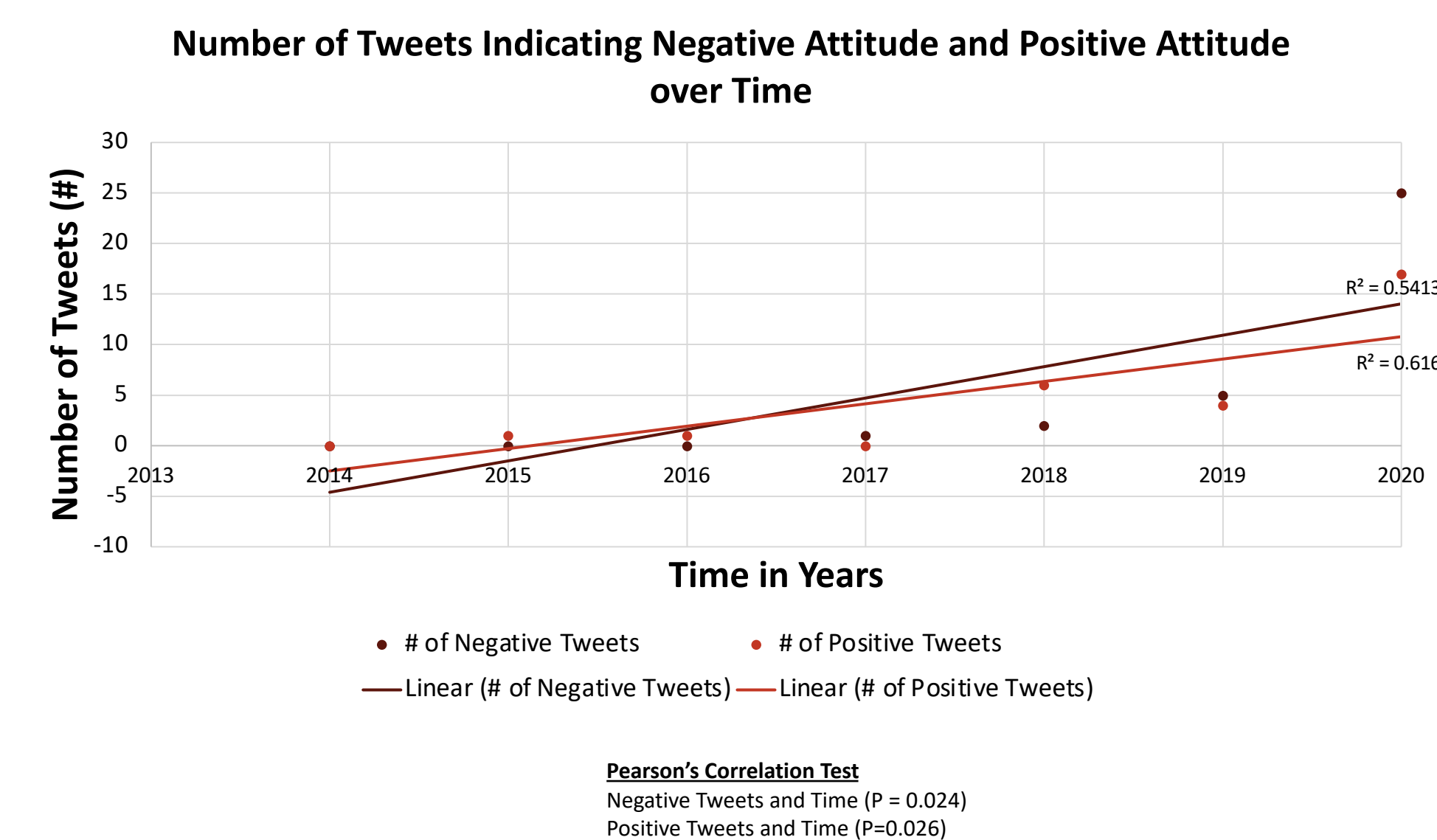
- The **T-Test** showed **no significant (\*) differences** in tone, emotion (positive and negative), affect, anxiousness, anger or sadness in the 'Top' and 'Latest' searches



- The **Latest** search showed **significantly more** tweets indicating **negative attitude** than the **Top** search



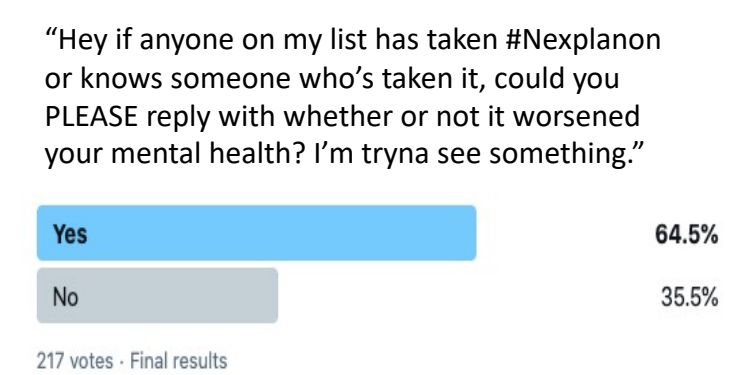
- Both **Positive and Negative Attitude** displays in tweets were **positively associated with time**



## CONCLUSIONS

- This platform, **Twitter**, shows promise for **evaluating adverse experiences** with Nexplanon or other medical devices.
- The **frequency** at which **reported symptoms were described in tweets (~40%)** may be of **concern**. More studies are needed to investigate the frequency of issues with bleeding and implantation site.
- The study suggested that **Top Search was more likely to have positive tweets** and **Latest was more likely to have negative tweets**. The reason for this relationship is not clear.
- Both **positive and negative tweets** increased with frequency over time, which could be due to more Nexplanon use.

Implications	Future Directions
<ul style="list-style-type: none"><li>Frequency of tweets that reported symptoms (40%) may indicate serious issues regarding the severity of symptoms which may be a possible danger for patients</li><li>If future studies corroborate this finding, regulatory institutions or advocacy groups should collect anecdotal evidence for possible policy change</li></ul>	<ul style="list-style-type: none"><li>Future content-analyses of Twitter should consider engagement as a key variable</li><li>Relationship between Tweets showing Positive and Negative Attitude and time should be more clearly defined through content analysis studied of Twitter and other discussion-based platforms</li></ul>



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