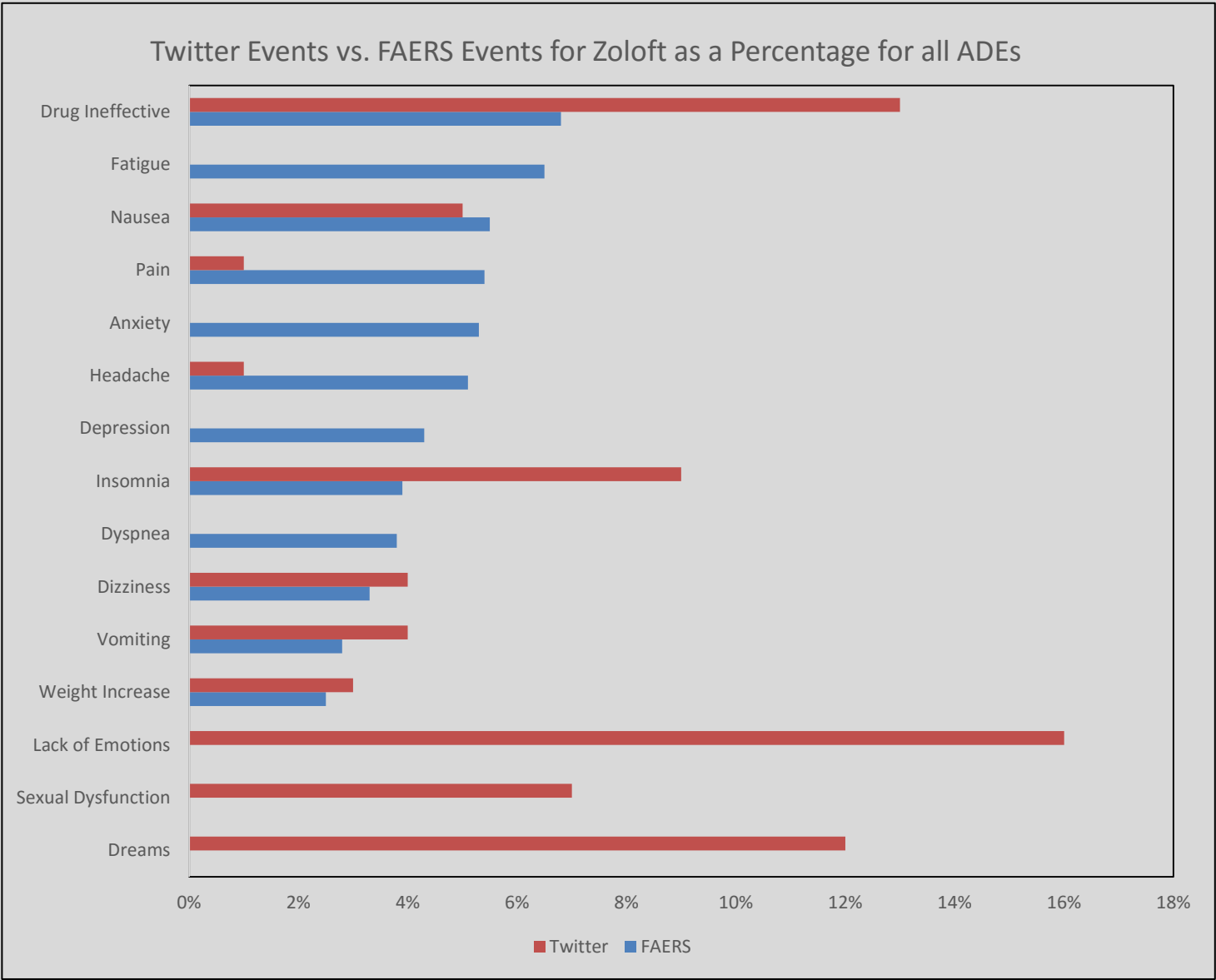


# Zoloft: Twitter vs. FAERS Data

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**Introduction**  
 Zoloft was selected because it is a well-known selective serotonin reuptake inhibitor (SSRI) that is mainly used to treat depression. 300 tweets, with dates ranging from 7/28/16 to 10/10/16, were randomly selected as a sample on 10/10/16.

**Twitter Data**  
 Analysis of Tweets:  
 • 24% (72) of the 300 Tweets contained at least one ADE.  
 • 75 ADEs were reported (3 Tweets expressed 2 ADEs).



**FAERS Data**  
 • Total number of reported ADEs: 21,793.  
 • The FAERS data was collected from 5/3/2005 to 3/5/2014.

**All of the ADEs Reported on Twitter**

| Reaction           | Number of Reports |
|--------------------|-------------------|
| Lack of Emotions   | 12                |
| Drug ineffective   | 10                |
| Dreams             | 9                 |
| Insomnia           | 7                 |
| Drowsiness         | 7                 |
| Sexual Dysfunction | 5                 |
| Nausea             | 4                 |
| Withdrawal         | 4                 |
| Dizziness          | 3                 |
| Vomiting           | 3                 |
| Suicidal Thoughts  | 2                 |
| Mood Swings        | 2                 |
| Weight Increase    | 2                 |
| Decreased Appetite | 2                 |
| Pain               | 1                 |
| Altered Taste      | 1                 |
| Headache           | 1                 |

**Top 20 ADEs Reported on FAERS**

| Reaction                           | Number of Reports |
|------------------------------------|-------------------|
| Drug ineffective                   | 1482              |
| Fatigue                            | 1422              |
| Nausea                             | 1209              |
| Pain                               | 1172              |
| Anxiety                            | 1165              |
| Headache                           | 1112              |
| Depression                         | 935               |
| Diarrhoea                          | 881               |
| Insomnia                           | 864               |
| Dyspnoea                           | 832               |
| Drug hypersensitivity              | 815               |
| Asthenia                           | 810               |
| Dizziness                          | 719               |
| Malaise                            | 717               |
| Maternal exposure during pregnancy | 708               |
| Fall                               | 620               |
| Vomiting                           | 617               |
| Feeling abnormal                   | 596               |
| Off label use                      | 565               |
| Weight increase                    | 545               |

**Conclusions**

- The highest recorded adverse drug event (ADE) on the FAERS database is the second highest reported ADE on Twitter.
- The difference between the ADEs reported on Twitter and the ADEs reported on the FAERS database could be due to the smaller sample size of the Twitter data compared to the sample size of the FAERS data.
- FAERS data included reports from doctors, lawyers, patients, and other healthcare professionals, whereas Twitter data included reports from patients themselves and possibly their family members and friends.
- The date ranges for the Twitter data and FAERS data are different, so this is a limitation. The Twitter data encompassed tweets over approximately a three month period, while the FAERS data ranged from 2005 to 2014 (there is no recent data on the FAERS database from the past year or two). This large gap in data collection limits the conclusions of our study.