

Perceptions and Discussions of Snus on Twitter

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Introduction

- ❖ Snus is a smokeless and sometimes flavored tobacco product for oral consumption.
- ❖ In 2021, 1.2% of US high school students are current users of smokeless products, including snus.
- ❖ Snus use could result in nicotine dependence.
- ❖ Snus may result in oral cancer, cardiovascular diseases, respiratory disease, diabetes, and other illness.
- ❖ Perceptions toward the association between snus use and smoking have been controversial.
- ❖ Twitter has been used to examine smoking behaviors and perceptions of tobacco products.
- ❖ Few studies have investigated the public perceptions of snus using social media data.

Aims/Objectives

- ❖ We aim to determine the public perceptions of and popular topics regarding snus on Twitter.

Methods

- ❖ We collected 28,427 Twitter posts (tweets) related to snus from March 11, 2021, to February 26, 2022, using the Twitter streaming application programming interface (API) using the keyword snus.
- ❖ We conducted sentiment analysis of the collected tweets using the Valence Aware Dictionary and Sentiment Reasoner (VADER) package to classify the tweets into either “positive”, “neutral”, or “negative” categories.
- ❖ We conducted topic modeling through the Natural Language Toolkit in Python.
- ❖ Health-related keywords were used to identify health-related discussions.
- ❖ Two authors hand-coded 200 randomly selected tweets (Kappa = 0.73) to determine whether the users directly experience the symptoms, or they believed snus helped them lowered the disease risk when compared to smoking.

Results

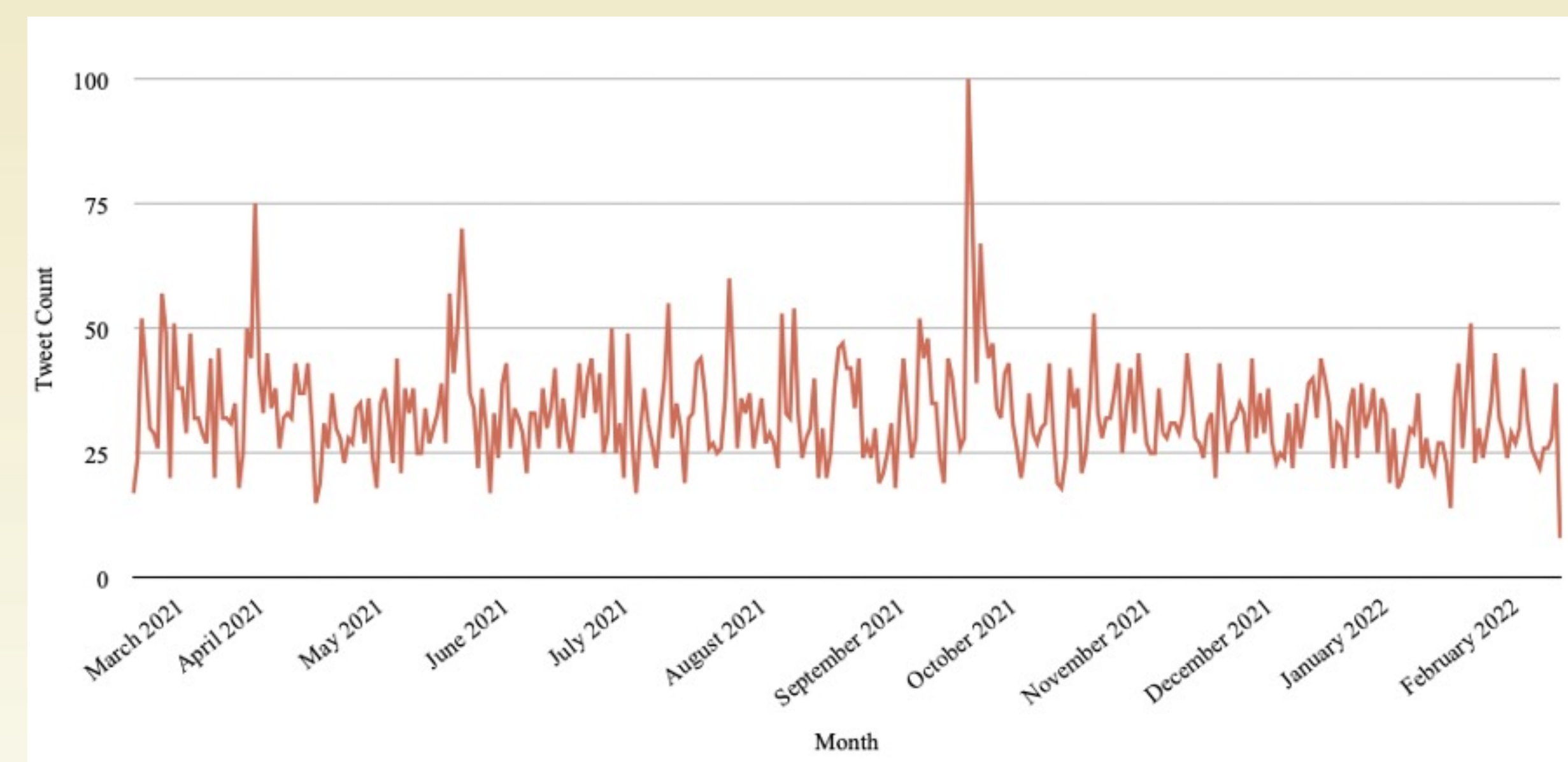


Figure 1. Longitudinal trend of snus-related tweets from March 11, 2021, to February 26, 2022.

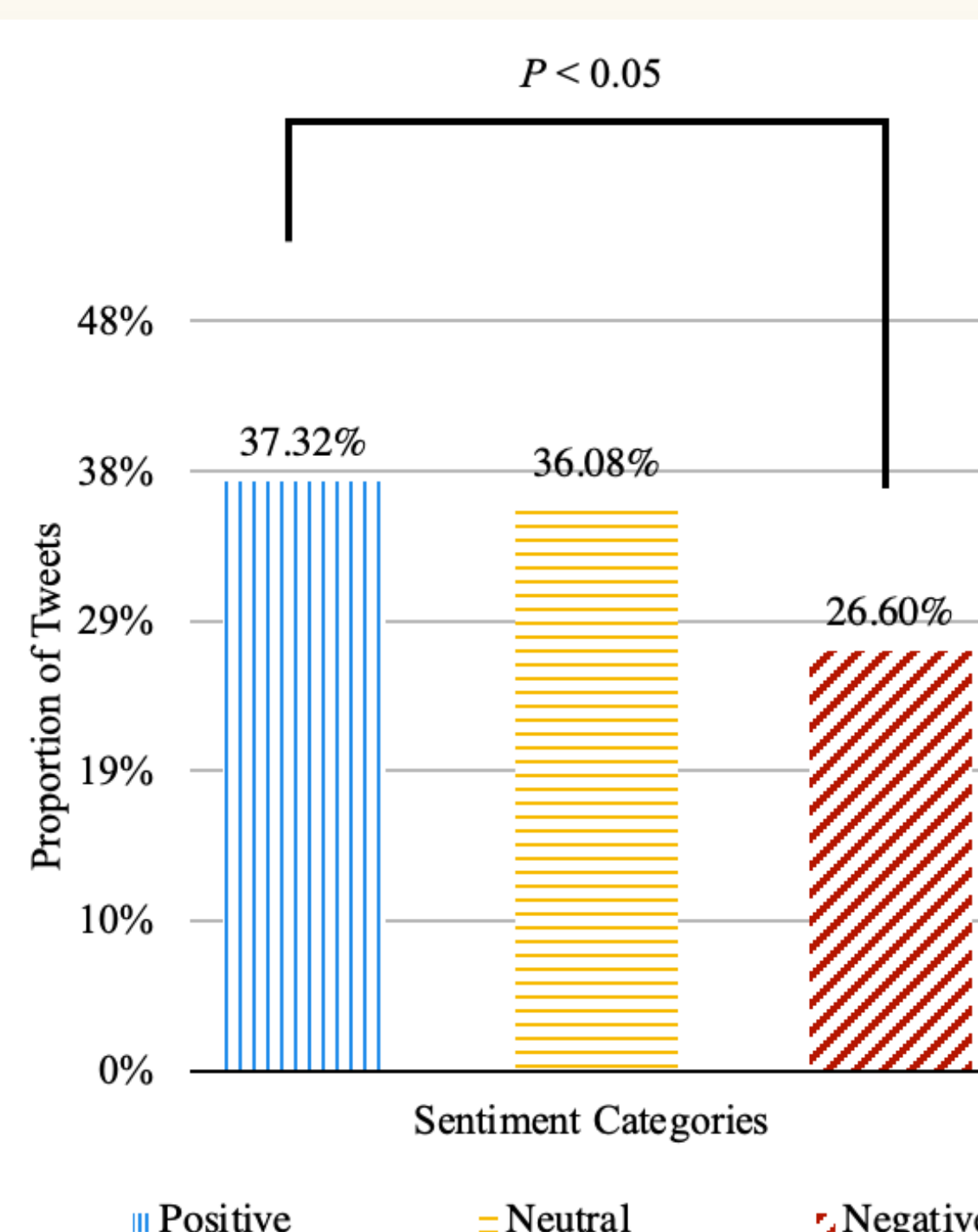


Figure 2. Proportion of snus related tweets with different sentiments.

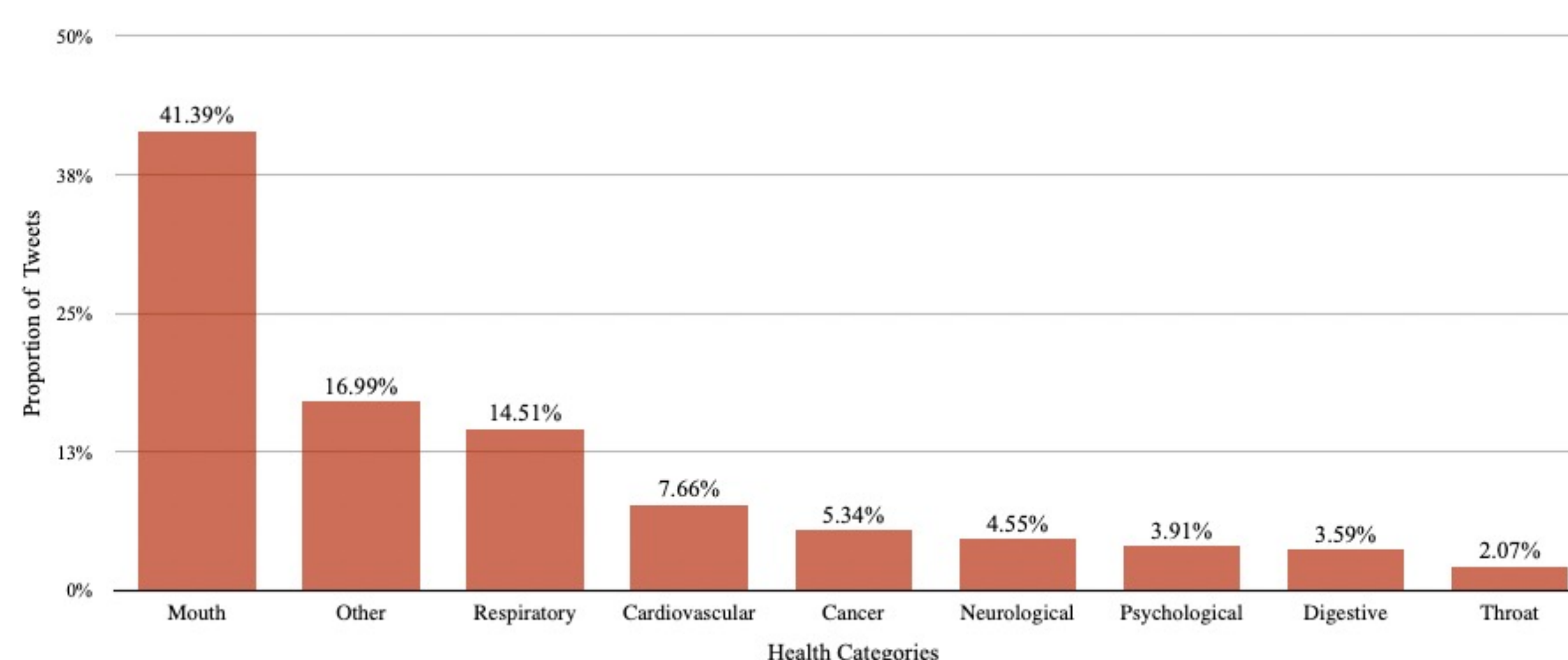


Figure 3. Proportion of Snus-Related Tweets with Different Health Categories..

Acknowledgements

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Table 1. Topics Discussed in Snus-Related Tweets with Different Sentiments.

Sentiment Group	Inferred Topic	Keywords	Token Percentage	Examples
Positive	Snus addiction and enjoyment	snus, good, make, time, day, love, feel, free, access, today, strong, man, back, coffee, pack, life, pretty, friend, enjoy, week	32.9%	“Proper pint of bitter and a wintergreen snus. perfect on a fair night like tonight “
	Snus being a safer way of nicotine consumption	pouch, vape, smoking, smoke, quit, cigarette, nicotine, safe, give, amp, year, alternative, smoker, start, risk, big, stop, switch, low, option	33.9%	“For long-term nicotine use, data on safety are strongest for snus: decades of epidemiological studies. no harm. so if many people with mental health issues self-medicate with #safernicotine (they are), at least there is no harm. #qualityoflife”
	Way of snus consumption	snus, tobacco, product, Swedish, people, chew, work, thing, great, smokeless, put, dip, find, call, play, gum, nice, hard, flavor, mouth	33.2%	“snus is a black tobacco product you chew or put on your gums. you don’t snort it or sniff it. he’s clearly closing one nostril to sniff smelling salts, which are commonly used in sports. not rocket science.”
Negative	Risk comparison between snus and smoking	Tobacco, smoke, vape, cigarette, smoking, pouch, product, cancer, risk, low, nicotine, amp, quit, harm, gum, rate, smoker, chew, reduce, smokeless	34.4%	“not just snus but the attempt to restrict and eliminate all lower risk products is astonishingly short sighted.”
	Negative health impacts	Snus, ban, make, stop, day, Swedish, year, give, feel, thing, death, man, start, high, mouth, kill, lose, addiction, long, cig	32.9%	“not in epok which i assume is some zoomer snus? i dont know i only use odens and sometimes siberia which has no flavouring just tobacco. the nicotine content is pretty potent in those, would kill your average vaper no joke.”
	Other problems related to snus	snus, people, time, bad, work, put, hard, good, study, week, today, back, call, big, find, coffee, problem, life	32.7%	“our big daddy is always the leader he is the familys captain and chief, but once i choked when my snus caught up in my throat cause there was our pop in the oak.”

Conclusions

- ❖ Proportion of snus-related tweets with positive attitudes was significantly higher than the proportion of snus-related tweets with negative attitudes.
- ❖ Positive sentiments on snus might come from personal experience and perception of snus as a safer alternative to smoking.
- ❖ Negative sentiments on snus mainly came from concerns on health risks related to snus use.