SHORT COMMUNICATION

Content Analysis of Twitter Data of College Students on Alcohol Consumption

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ABSTRACT

Objectives: To determine the frequency of tweets on news related to college students' alcohol use, the typical effects of alcohol consumption on college students expressed in news, and the general attitude towards college students' alcohol use

Methodology: A manual content analysis was used to explore the mentioned effects and the general attitude of tweets of news on this topic collected by keyword search method.

Results: The study found that people shared news of the topic approximately twice a month, indicating a low awareness and concern level of public on college students' alcohol consumption. Among seven types of effects mentioned in tweets, sexual risk was referred to most often. Moreover, people expressed a negative attitude towards college students' alcohol use generally except a few who did not give any opinion on this topic.

Conclusion: This study was among the first attempts to employ Twitter as the analysis instrument in the area of college students' alcohol consumption. Practically, this study may provide college administrators with functional materials to deconstruct the negative impact of alcohol on campus.

Key words: Alcohol consumption, Alcohol misuse, Alcohol disorder, College students' alcohol usage, Twitter, Public awareness

INTRODUCTION

According to the results from the 2015 National Survey of USA on Drug Use and Health, alcohol use becomes a serious threat for emerging adults ranging from 18 to 25 years of age[1]. This age range is mostly in accordance with college students who show the highest rates of alcohol use, binge drinking, and alcohol dependence. In addition, research also found that compared to non-college students of similar age, college students tend to use more alcohol at a higher frequency[2]. Knight et al. did a survey among more than 14,000 college students in the United States[3]. The results showed that 31% students engaged in alcohol misuse and 6% reported alcohol dependence. Wechsler and Nelson reported a consistent result as well. More than 40% of their samples were heavy binge drinkers[4]. This

situation is not limited to the United States. Alcohol misuse is also a prominent concern in other countries around the world[5]. A study in Germany reported that 24% of college students engaged in heavy binge drinking more than once within two weeks[6]. A study on Italian students also reported more than 20% binge drinkers[7].

However, this increasing prevalence of alcohol abuse has been found to bring negative impact on college students themselves and their fellow students both physically and psychologically. Research has found robust proof of the correlation between alcohol and poorer academic performance[8], poorer memory performance and more memory blackouts[9], increase in unemployment rates[10], sexual risk behaviours[11], alcohol use disorder and co-occurring mental illness[1].

As alcohol misuse becomes common among college students, the previous research has focused on revealing the effect of alcohol use on college students. Most of these studies attempted to find out the answer from academic or vocational aspects. Little research has included the impact from the most basic needs aspect— safety. And few studies[12,13] considered using Twitter as the research instrument with the prevalence of social media usage. The combination of traditional media

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feature and new media feature emerges nowadays. News sharing on Twitter can be both social, informational, and educational. Thus, this study came up with the following questions:

1. How often do people share news related to college students' alcohol use on Twitter?
2. What is the effect of college students' alcohol use indicated in news shared on Twitter?
3. What is the general attitude of news sharers on Twitter towards college students' alcohol use?

Therefore, this study intends to find out the frequency of Tweets on news related to college students' alcohol use, the typical effects of alcohol consumption on college students expressed in news, and the general attitude towards college students' alcohol use. The sample was chosen from Twitter for analysis. All the tweets worldwide posted in English from March 8, 2018 to March 8, 2019, related to college students' alcohol use were collected as samples.

This study may have some practical implications in preventing alcohol-related incidents. It could inspire news producers on what news Twitter users would like to share more about alcohol-related topics. Moreover, it enables college administrators to facilitate more targeted alcohol-misuse prevention and treatment efforts. Twitter and its news sharing function could be incorporated properly into college alcohol education programmes. Meanwhile, it can actively assist college policymakers to educate and inform the risk of alcohol misuse so that students achieve moderation of alcohol use.

METHODOLOGY

A lot of useful information about people's attention and attitudes towards news are embedded in Twitter stream aggregately. Therefore, Twitter can be used to track the effect of alcohol usage on college students from the aspect of safety, and explore the general attitude of people after hearing the related incidents' news. Because the purpose of this study is to investigate the mentioned effect of alcohol consumption of college students and the publics' general attitude towards college students' alcohol consumption, the sample was drawn from Twitter that has 326 million active users worldwide as of January 2019[14].

All the tweets worldwide from March 8, 2018 to March 8, 2019, related to college students' alcohol use were collected for analysis. Only comments in English were chosen. The keyword search was used to select all the related tweets (alcohol and college students). In addition, merely tweets in the news column were selected to indicate the frequency of accidents caused by college students' alcohol use. Then 28 tweets appeared in the list. A further confirmation of whether these tweets related to the research topic or not was conducted by two coders from Journalism and Media Studies (Krippendorff's alpha = .95). Before the study, these two coders were trained until the agreement rate reached 98%. In the pre-test, each of them will read 50 news gathered online separately and identify whether they are related to the topic of college students' alcohol usage or not. Another 50 news should be added until most of their categorization reached the same answer.

In the actual test, 27 Tweets were considered as related to the topic of college students' alcohol consumption. The Tweets account, date, news heading, and Twitters' attitude towards college students' alcohol consumption shown in the comments were documented. The attitude towards college students' alcohol consumption (Krippendorff's alpha = .80) and types of effect mentioned (Krippendorff's alpha = .75) in these tweets were also coded by two coders from Journalism and Media Studies. In this study, Kripendorff's alpha was reported to ensure the credibility of the instrument because it works well with small sample compared to other coefficients like Kappa and Scott's pi[15]. Alpha values of each variable in this study were all accepted as reliable.

RESULTS

There were 27 Tweets of news including the words of "alcohol" and "college students" (see appendix A). That means on average, all Tweets users (English speakers) shared news related to college students' alcohol usage approximately twice a month. Those who share this kind of news include both individual Tweeters and organizations. Therefore, it can be concluded that the alcohol use of college students has not become a significant concern in society and is not a commonly shared topic on Twitter considering that there are 326 million active users worldwide as of January 2019.[14]

According to Table 2, 25 Tweets mentioned the negative effect of college students' alcohol use from seven aspects, namely sexual risk, alcohol poisoning to death, crimes behaviour, academic success, the effect on organs, suicide, and injuries. Only two Tweets did not imply any specific negative effect of college students' alcohol use. During this time period, sexual risk was mentioned most frequently among all the news stories shared on Twitter while injuries were the least frequent. Similar findings were noted for people's concern about these negative effects. People cared about the sexual risk the most with seven shared Tweets while focusing

on injuries the least with only one Tweet. Among these negative effects, safety concerns occupied the majority of the Tweets' mentioned effect while academic success only accounted for three Tweets.

Table 1: Search Strategy

Keywords (all of these words)	Alcohol and college students
Date	2018/03/08 − 2019/03/08
Location	Worldwide
Language	English
Inclusion Tweets	News

Table 2: Effect of Alcohol Use (N=27)

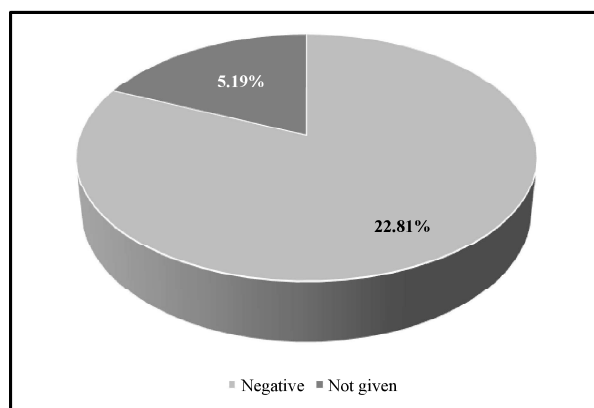| Types of effect	Number of Tweets	Number of news
Sexual risk	7	5
Alcohol poisoning leading to death	4	4
Crimes	4	3
Academic success	3	2
Effect on organ	3	2
Suicide	3	2
Injuries	1	1

Figure 1: Attitude of Tweets Owners towards College Students' Alcohol Use (N=27)

Figure 1 shows that all people expressed a negative attitude towards college students' alcohol use except five persons who did not give any opinion on this topic. It indicates that generally, it has become a consensus that alcohol does more bad than good to college students. After viewing news related to college students' alcohol use, the most popular attitude towards college students' alcohol use on social media was negative.

The following screenshots of Tweets related to college students' alcohol use revealed the negative attitude of people towards this phenomenon. From these comments, it was clear that the alcohol use of college students has been considered as a big threat on campus.

People wished to minimize or eradicate this phenomenon so that alcohol-related outcomes could be prevented. When they thought about alcohol use of college students, they may automatically relate to unwanted outcomes and behaviours.

DISCUSSION

This study examined the mentioned effects of alcohol consumption on college students worldwide and investigated the public's general attitude towards college students' alcohol consumption through the social media app Twitter. From the records of the date of Tweets sharing, the frequency of Tweets related to news stories on this topic was very low, which means college students' alcohol consumption received insufficient attention from the public. This is inconsistent with the claim of Leeman, Perez, Nogueira, and DeMatini: college students' alcohol consumption is a huge public health concern[16]. They explained that the public pays much attention to this issue because unrestricted alcohol consumption can result in serious personal and social problems when college students engaged in heavy drinking. The research also found that "young adults attending college are more likely to engage in heavy episodic drinking than their peers not in college.[17]" Dangerous levels of alcohol usage seems to get promoted in the college environment, leading to public concern over the related problems. The inconsistency may happen because of the less amount of news relating to college students' alcohol usage. Therefore, the number of tweets of news may decrease corresponding with the decline in news on the same topic.

The results also found that sexual risk was the leading concern of the negative effect of college students' alcohol consumption on Twitter. Other concerns were alcohol poisoning to death, crimes behaviour, academic success, the effect on organs, suicide, and injuries in descending order. White and Hingson draw a similar conclusion that college students' alcohol consumption correlates with unwanted outcomes, like poorer academic performance, vehicular accidents, injuries, physical fights, risky sexual acts, and sexual assaults[18]. And among these consequences, sexual risk behaviours grabbed the most prominent attention because of its considerable public health importance[19]. Another survey also showed the same result that some of the most frequent consequences involved doing something later regretted, partial or full blackouts, unprotected sex, and alcohol-related injury[20].

Moreover, the findings suggested that generally, the public held a negative attitude towards alcohol consumption of college students. In other words, they regard alcohol as a harmful influence on campus. Rosenberg, Bauld, Hooper, Buykx et al. explained that government education, media coverage and campaign, medical research, and health institution promotion play a role in improving public awareness towards alcohol[21]. The research also revealed that 'more than half of students who drink report one or more negative alcohol-related problems[22]. As alcohol-related accidents in the news coverage are frequently reported, the association between college students' alcohol consumption and potential accidents or problems may become common sense in public under the effect of repeated exposure.

This study was among the first attempts to employ Twitter as the analysis instrument in the area of college students' alcohol consumption. Therefore, it filled in the gap between research development and new technology deployment. The results may also provide college administrators with functional materials to deconstruct the negative impact of alcohol on campus.

CONCLUSION

In this study, the public awareness of college students' alcohol consumption was found to be very low reflected by the frequency of Tweets of news on this topic worldwide. The content analysis also revealed seven types of negative consequences of college students' alcohol use in the news shared on Twitter, namely sexual risk, alcohol poisoning to death, crimes behaviour, academic success, the effect on organs, suicide, and injuries. It found the public's attitude towards alcohol consumption of college students to be negative in general as expressed on Twitter.

Underlying data:

Open Science Framework: A Twitter Analysis of college students on Alcohol consumption. https://doi.org/10.17605/OSF.IO/XW8VH. Data are available under the terms of the Creative Commons Zero "No rights reserved" data waiver (CC0 1.0 Public domain dedication). This project contains the following underlying meta-data: study characteristics of tweets included in this study, figure and table of study characteristics of tweets.

Authors' contribution: MSA: concept, study design, manuscript review, and editing. DR: date collection, data analysis, write up and review of the manuscript.

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