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Examination of YouTube videos related to synthetic cannabinoids

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Abstract

The popularity of synthetic cannabinoids (SCBs) is increasing the chance for adverse health issues in the United States. Moreover, social media platforms such as YouTube that provided a platform for user-generated content can convey misinformation or glorify use of SCBs. The aim of this study was to fill this gap by describing the content of the most popular YouTube videos containing content related to the SCBs. Videos with at least 1000 or more views found under the search terms “K2” and “spice” included in the analysis. The collective number of views was over 7.5 million. Nearly half of videos were consumer produced ($n = 42$). The most common content in the videos was description of K2 ($n = 69$), followed by mentioning dangers of using K2 ($n = 47$), mentioning side effects ($n = 38$) and showing a person using K2 ($n = 37$). One-third of videos ($n = 34$) promoted use of K2, while 22 videos mentioned risk of dying as a consequence of using K2. YouTube could be used as a surveillance tool to combat this epidemic, but instead, the most widely videos related to SCBs are uploaded by consumers. The content of these consumer videos on YouTube often provide the viewer with access to view a wide array of uploaders describing, encouraging, participating and promoting use.

Keywords

social media; synthetic cannabinoids; YouTube

Introduction

Use of synthetic cannabinoids (SCBs), also known as K2 and spice have gained the attention of health care professionals and public health officials in the United States (US). Although SCBs packages clearly state “not for human consumption” the allure to achieve a “legal high” entices many. SCBs continue to be used despite the overwhelming evidence of a number of adverse health effects, including nausea, convulsions, increased heart rate,

psychomotor agitation, diaphoresis, palpitations, anxiety, confusion, cardiovascular effects, irritability, and brain damage (1). Given this, it is surprising that the affinity for these SCBs continues to increase across the US (2). For example, the poison call centers reported an increase of 330% regarding SCBs effects and health consequences (3). The National Institute on Drug Abuse (NIDA) has expressed concern for this emerging threat and has warned of the serious consequences of using synthetic cannabinoids (1).

Recently, Curtis et al. (2015) reported 1.17 million hits for a search term “synthetic marijuana” (4). The Internet and social media act as a considerable source of information about a variety of synthetic cannabinoids. In addition, the ease of use and popularity of social media provides consumers “extensive online user-generated content” (UGC) that engage them actively (5). Social media platforms facilitate and generate “chatter” to engage consumers and capitalize on “word of mouth” communication (6). YouTube represents a social media platform that promotes an extensive amount of UGC. The diverse consumer reach of dissemination far exceeds traditional method of information/content delivery. In 2007, 13 videos existed on YouTube for search terms K2 or spice compared to 2830 videos using the same search terms in 2016. The YouTube model offers individuals an easily accessible platform to share information on a range of topics (7). The content uploaders of these videos represent an array of individuals ranging from medical professionals, news organizations, to active users.

To date, little is known about content and the types of information about SCBs available on YouTube videos. With the popularity of synthetic cannabinoids increasing in the United States, it is important to examine the content of these videos. Therefore, the aim of this study was to fill this gap by describing the content of the most popular YouTube videos containing content related to the SCBs.

Materials and methods

In December of 2015, we searched for the words “spice” and “K2” using YouTube’s search engine. We searched the Web site using YouTube’s “worldwide” mode with the language set to English. We chose these search terms to capture specific SCBs content rather than other similar content, such as marijuana or THC. In addition, these Boolean search terms were considered a catchment area to collect content from a variety of sources. We modified the YouTube filter parameters to display videos by “view count” in order to detect and assesses the most widely viewed UGC. Videos with 1000 or more views were included in the analysis. The videos that were grouped together were excluded and duplicates were discarded. The source of the video was determined by reviewing the description information located under the uploaded date window. Based on this information, we established the following distinct groups: 1. Consumer authored videos consisted of a video uploaded by a member of the public without any commercial connection, 2. Professionals, who were defined as anyone holding credentials (e.g. MD) to be qualified to disseminate information on the topic, 3. Government agencies, 4. Media source, if the clip was from a commercial, traditional television source, and 5. Internet-based news, which was defined as a report that appeared only over the Internet without connection to any traditional television network.

Each video in the sample was watched in its entirety. Videos that appeared in the sample more than once and appeared to be identical in all respects, including name of the poster and view count, were considered one video for this analysis. Following this process, 97 videos remained in the final sample. Grouped videos, which were part of a collection were excluded and used as a pilot to evaluate the content and generate categories for identified themes. The pilot studied allowed for the development of a code schema that consisted of 10 items: 1) describing K2/spice; 2) Dangers mentioned, if so were they described; 3) Video mention it is safe; 4) Show person using; 5) Mention of getting help; 6) Mention/show risk of dying; 7) Mention/ show other side effects; 8) Show viewers how to use or purchase; 9) Show viewers how to make K2; 10) Promoting use of K2. The human subjects committees at Teachers College, Columbia University and William Paterson University do not consider this to be human subjects research.

Results

A total of 97 YouTube videos were viewed addressing use of K2/spice. Six videos were excluded due to being part of a collection, yielding the final analytic sample of 91 videos. All videos were posted between 20th February 2010 and 3rd September of 2015. The largest number of videos was posted in 2012 ($n = 32$), followed by 2013 ($n = 15$). As indicated in Table 1, the average length of the videos was 4 min and 32 s (range: 0:00:16–0:53:54). The collective number of views for all videos was 7,503,898. Nearly half of videos were consumer produced ($n = 42$), followed by Internet-based news ($n = 23$). Television-based news clips ($n = 9$) had the greatest number of views and comments. As the data for the length of clip, number of views and number of comments did not follow the normal distributions, we performed the Kruskal-Wallis test for these variables. Comparison between groups for all three variables showed significant differences ($p < 0.001$). The most common content in the videos was description of K2 ($n = 69$), followed by mentioning dangers of using K2 ($n = 47$), mentioning side effects ($n = 38$) and showing a person using K2 ($n = 37$). One-third of videos ($n = 34$) promoted use of K2, while 22 videos mentioned risk of dying as a consequence of using K2.

Discussion

This is the first study of YouTube videos related to SCBs. YouTube could be used as a surveillance tool to combat this epidemic, but instead, we found that the most popular videos related to SCBs are uploaded by consumers. The content of these consumer videos on YouTube often provide the viewer with access to view a wide array of uploaders describing, encouraging, participating and promoting use. Perhaps the most troubling aspect of these popular videos are those which record acts of friends in dire need of medical assistance after use of SCBs, and the impact that these videos can have on adolescents. There was a low volume of public health based videos and those produced by a trusted source with credentials to better deflect these glorified messages. This study is consistent with findings from other studies of YouTube content, whereby consumer messages are most popular (5). Despite the novelty of these findings, this study has limitations. The content of YouTube is rapidly changing, and our sample captured only a portion of material available during the timeframe we searched for videos. However, this material is most likely to be viewed first if

our search terms were entered again. This study is further limited in ways that does not take into account the country of origin of the video, or videos produced in languages other than English. Although we recorded counts of each video in the sample, we have no information on how many unique viewers these numbers represent. We are not able to draw conclusions about the possible effects of watching these videos. Despite these limitations, we found that educational efforts are largely lacking from social media websites and require health care educators and public health departments to counteract these videos. The dissemination of evidence-based information about the health risk associated with SCBs use, including addiction, cognitive impairment or other varying complications through public health professionals is needed to curb the enthusiasm associated with UGC of SCBs.

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K2/spice YouTube video characteristics.

Table 1

Source of videos	Mean length in min:sec (range)	Mean # of views (range)	Mean # of views (range)	K2 described	Mentioned dangers of using K2	States that K2 is safe	Shows someone using K2	Mentioned getting help	Mentioned risk of dying	Mentioned side effects	Shows user how to use K2	Shows user how to make K2	Promoting use of K2
Total (n = 91)	4:32 (0:16–53:54)	92,446 (1026–1,802,882)	196	69	47	2	37	6	22	38	15	1	34
Consumer (n = 42)	5:33 (0:42–17:06)	56,505 (1268–360,964)	161	25	17	1	20	0	4	11	13	0	18
News clip uploaded by consumer (n = 5)	3:46 (1:35–5:00)	4694 (1294–12,255)	7	5	5	0	0	1	3	5	0	0	0
Television based news (n = 9)	9:26 (1:11–53:54)	261,905 (2612–1,822,882)	866	7	7	0	5	3	3	7	0	0	0
Internet based news (n = 23)	2:11 (0:16–10:48)	130,370 (1160–342,019)	128	22	8	1	11	1	5	8	2	1	16
Government professional (n = 12)	2:12 (0:31–4:46)	55,023 (1026–626,486)	11	10	10	0	1	1	7	7	0	0	0

Kruskal-Wallis test for mean length, number of views, and number of comments showed significant differences ($p < 0.001$).