

Bullying in individuals with cleft lip and palate: A Twitter analysis

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Abstract

Objectives: To evaluate the bullying in individuals with cleft lip and/or palate (CLP) by Twitter analysis. **Materials and Methods:** Twitter's advanced search function was used while the term 'cleft lip and palate' was kept constant, and the selected keywords were 'bully', 'bullying', 'bullied' and 'teased'. A total of 150 tweets that met the criteria were selected. The data were qualitatively evaluated by thematic analysis and the themes were determined based on this analysis. **Results:** Most of the tweets were posted by a layperson (76%). Also, nearly half of the tweets were categorized in the theme 'personal experience of being bullied' (43%). The tweets were distributed according to their uploader status as CLP subjects (46%), irrelevant individuals (28%), and parents of CLP subjects' (26%). Of the 150 tweets evaluated, 74 were identified as negative, while 25 were identified as neutral and 51 as positive. No significant differences were detected in retweet and like numbers between negative, neutral, and positive comments ($P > .05$). **Conclusions:** This is the first study in the literature regarding the bullying suffered by individuals with CLP using Twitter data. Twitter is a social media platform for bullying victims with CLP to share their experiences and seek for social support.

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Conclusions: This is the first study in the literature regarding the bullying suffered by individuals with CLP using Twitter data. Twitter is a social media platform for bullying victims with CLP to share their experiences and seek for social support.

KEY WORDS : Cleft lip and palate; Bullying; Twitter; Social media

What is already known about this topic?

In the literature, studies have been conducted on the topic of bullying in individuals with cleft lip and palate and it has been shown that bullying is a major problem in their lives and result in various difficulties. With the increasing usage of social media nowadays, cyberbullying has also become a major problem. However, no studies have yet investigated the role of social media on bullying in individuals with cleft lip and palate. Therefore, this study aimed to analyze the bullying these people experienced through Twitter.

What does this article add?

This article investigates the bullying that individuals with cleft lip and palate are exposed to on Twitter, bringing a new perspective to cyberbullying on social media.

INTRODUCTION

Dental patients interact with other users to get and share information on the network in the healthcare system. More than two-thirds of online people in the world use social media platforms. Awareness campaigns and groups formed for social support through social media are increasing. Like many social media sites, Twitter has been quite popular for some time. Approximately 350,000 tweets are shared every minute. Twitter allows users to share photos and videos as well as text posts which could contain up to 280 characters. The unfollowing and being followed relationship in Twitter don't need to be reciprocal, making it different from some other popular social media platforms. Therefore, it allows patients to examine the ideas and experiences shared by different people. Therefore, Twitter is popular for use in public health research.¹⁻³

Bullying is repetitive and deliberate negative behavior towards an individual who is incapable of defending him or herself. It is a very common occurrence in schoolchildren with a prevalence of 5% to 58% globally. Bullying can occur relationally, verbally, or physically.^{4,5} In addition to these, online aggressive behavior can be defined as cyberbullying.⁶ Being bullied has many negative effects on the emotional state of an individual, which could be lifelong. Those who are bullied may experience negative physical, mental, social, and spiritual effects in their lives.⁷ As students who are being bullied often fear school, their absenteeism and drop-out rates were shown to be increased. The victims often feel anxious, insecure, and lonely and have low self-esteem with a generally negative evaluation of themselves.⁸ It has been observed that those who are bullied have a high risk of experiencing severe mental health problems.⁹ Suicidal thoughts and self-harming behaviors have been found to increase in victims who are constantly bullied.¹⁰ Therefore, the execution of bullying prevention programs is necessary to break the cycle that causes emotional stress and negative feelings in bullying victims that may continue throughout their lives.

Dentofacial anomalies can lead to an increment in bullying among children and adolescent.⁷ In the orthodontic literature, the teasing people are exposed to because of their teeth and facial features have been an issue that has been emphasized. Previously, a significant relationship was detected between bullying, malocclusion, and self-esteem in adolescents in the UK.¹¹ Cleft lip and/or palate (CLP) are congenital malformations that can affect the head, lips, and intraoral structures. The incidence of CLP is quite common with 1 in 700¹² and varies depending on genetic, and environmental factors. Children with CLP have some functional and aesthetic problems such as trouble in mouth closing, feeding difficulties at birth, hearing problems, speech difficulties, and dental problems.^{13,14} Due to such difficulties, individuals with CLP are at increased risk of being bullied. A team of medical and dental specialists is required to treat these problems. Delayed treatments may cause potential adverse psychological effects on the child due to CLP-related malocclusions.

Although the relationship between bullying and dentofacial features/orthodontic treatment was previously investigated by analyzing Twitter⁷, no studies were detected regarding the bullying experienced by individuals with CLP using Twitter data. Therefore, we aimed to evaluate the bullying on Twitter experienced by individuals with CLP.

MATERIALS AND METHODS

Data Collection

The online microblogging platform Twitter (<http://www.twitter.com/>) was scanned on December 06, 2020 to

identify tweets that concerned CLP and bullying. Twitter's advanced search function was used for scanning using four keywords, while the term 'cleft lip and palate' was kept constant at each search. The selected keywords were 'bully', 'bullying', 'bullied' and 'teased'.⁷ English was selected as the search language. The exclusion criteria were the identical tweets of the same user which were detected in different searches, unrelated tweets, non-English tweets, and tweets including unclear letters and words. Since only publicly available data were included in this study, ethics committee approval was not required. A total of 150 tweets posted between March 17, 2012 and November 21, 2020 that met the criteria were selected.

Data analysis

Manual encoding of Twitter content is more accurate than automatic encoding because humans can perceive linguistically refined text more efficiently than computer-based systems.¹⁵ Therefore, data were recorded and evaluated manually in this study. The data were recorded using the Microsoft Excel program and qualitatively evaluated by thematic analysis¹⁶ and the themes were determined based on this analysis.

The tweets were recorded under the following codes: (1) date, (2) number of retweets, (3) number of likes, (4) tweet source, (5) tweet, (6) theme, (7) positive/negative/neutral, (8) tweet uploader status. The tweets were posted by 3 different groups of people: (1) community, (2) layperson, (3) news. 5 themes were identified: (1) criticism of bullying, (2) news about bullying in CLP, (3) parental experience of a child being bullied, (4) personal experience of being bullied, (5) social support against bullying. Tweet uploader status was classified into 3 groups: (1) CLP subjects, (2) CLP subjects' parents, (3) irrelevant individuals (individuals who were unaffected). All tweets were evaluated by 2 experienced orthodontists who worked independently. When a case of conflict existed, two investigators exchanged ideas and determine the final theme together after the first evaluation.

Statistical Analysis

Statistical analysis was carried out using the SPSS software (SPSS for Windows version 20.0; SPSS Inc, Chicago, Illinois). Kruskal Wallis test was used to compare the retweets and likes between negative, neutral, and positive comments. The threshold for statistical significance was set at $P < .05$.

RESULTS

The percentage distributions of the tweets according to their sources were presented in Figure 1. Most of the tweets were posted by a layperson (76%), while the others were posted by the community (online community pages that are related to CLP) (18.7%) and news (5.3%) sources.

Figure 2 displays the percentage distribution of the themes of the tweets. Nearly half of the tweets were categorized in the theme personal experience of being bullied (43%), while the rest were identified in the following themes: the parental experience of a child being bullied (17%) -in which the family members of the bullying victim were considered as parents-, criticism of bullying (17%), news about bullying in CLP (14%), and social support against bullying (9%).

The percentage distribution of the tweet uploader status about CLP was given in Figure 3. The tweets were distributed according to their uploader status as CLP subjects (46%), irrelevant individuals (28%), and parents of CLP subjects' (26%). Figure 4 displays the word cloud of all posts on Twitter about bullying in individuals with CLP.

The comparison of retweets and likes between negative, neutral, and positive comments were shown in Table 1. Of the 150 tweets evaluated, 74 were identified as negative, while 25 were identified as neutral and 51 as positive. No significant differences were detected in retweet and like numbers between negative, neutral, and positive comments ($P > .05$). Descriptive Tweets for each of the themes were given in Table 2.

DISCUSSION

This is the first study to investigate bullying in individuals with CLP on Twitter. Considering the impact of social media on today's society and its capacity to reach everyone with internet access, the importance of

the subject of this study will emerge.

Teasing and bullying are two major problems in the daily life of an individual with CLP due to the multitude of visible implications of cleft such as facial scarring, speech and hearing loss, which can be easily identified by peers. These individuals were shown to experience bullying at a higher rate than those who were non-CLP and that it results in psychosocial problems that start in the early ages.¹⁷ It has been reported by the parents of children with CLP that their children have various psychosocial problems.¹⁸ Nicholls et al.¹⁹ reported that subjects with CLP frequently experienced teasing and bullying and that it peaked in adolescence and decreased in adulthood. They also stated that adults with a CLP defined the need for psychological support as a required but inaccessible service that could have helped them develop a coping mechanism for teasing earlier.

The findings of our study are important in terms of showing the bullying that individuals with CLP are exposed to and its effects. Most tweets posted by individuals with CLP and their relatives were about their personal experiences of being bullied and how it affected their lives. This finding was in accordance with the previous studies of Twitter posts regarding orthodontic treatment, retention, and aligners in which most of the tweets also belonged to individuals sharing their experiences.^{1,20,21} Our findings showed that individuals with CLP who experienced bullying and tweeted about it shared their opinions and feelings in their tweets. We observed that bullying caused individuals with CLP to feel sad and hopeless, with many expressing difficulties in coping with their experiences. Although these personal experiences might be helpful for some individuals to cope with their experience, others might be influenced negatively.

A greater proportion of the analyzed tweets were categorized as negative (49.3%), while less were identified as positive (16.7%) and neutral (34%). The fact that many of the tweets in which bullying victims share their story of being bullied reflects a negative tone is the clearest example of the destructive effect of bullying on individuals. Even if the bullying had occurred years ago, it could be observed that the emotional effects of it continue. Tweets with a positive sense were mostly about social support and overcoming bullying.

Most of the tweets in this study reflected personal experiences of being bullied (43%), followed by the parental experience of a child being bullied (17%) and criticism of bullying (17%), news about bullying in CLP (14%), and social support against bullying (9%), in descending order. Our findings showed that individuals with CLP who are being bullied and their parents use Twitter as a platform where they can share their experiences. Chan et al. (2017) showed that people feel comfortable sharing their own stories of being bullied on Twitter and different social media sites could be valuable sources of data regarding causes of bullying due to oral health and its consequences. It may be more comfortable to tweet about their personal experiences of bullying rather than talking about it directly for individuals with CLP too. However, most of the tweets did not include the type of bullying suffered.

It could be seen that most of the tweets (46%) belonged to individuals with CLP. While it is encouraging to see that the tweets containing the selected keywords are not owned by the individuals intending to victimize people with CLP, it is worth noting that they are less likely to use those words in their tweets. Furthermore, the tweets posted by bullies are difficult to detect, since they do not have a specific pattern and could contain a wide variety of words.

The number of tweets included in this study was comparable with previous relevant studies.^{1,22} We used both qualitative and quantitative methods to evaluate the tweets. This methodology employed both qualitative and quantitative approaches and the validity and trustworthiness of our results enhanced since two different investigators identified the themes of the tweets separately at first and then, they exchanged ideas in cases of conflict to determine the final theme. A manual coding process was used in this study rather than sentiment analysis software to identify tweets as positive, neutral, or negative, as the analysis is not able to identify irony and sarcasm and comprehend unusual phrases.²³

It was previously shown that 64% of teen users of Twitter prefer public tweets and 24% choose private tweets, while 12% don't know if their tweets are public or private.²⁴ A limitation of the current study was that the tweets that could be evaluated were only the public ones. The inability to access the tweets which were

posted by the protected profiles prevented access to all tweets about bullying in individuals with CLP.

The popularity of social media sites is very high, and it seems that it will continue to increase in the years to come. Today, social media sites are a part of the daily lives of many people, including children and adolescents. Therefore, these sites provide important data about society's perspective on bullying and their experiences. However, it is usually not possible to obtain much information about the demographic data of Twitter users. This was because unlike other social media platforms, fewer Twitter users share private information such as age, gender, and ethnicity.²⁵

Social media sites could be used by individuals with CLP for many different purposes. Considering that dental and medical professionals frequently use social platforms today, they provide the advantage of facilitating communication with an orthodontist for patients with CLP. They also provide individuals with CLP and their parents' quick information. Individuals with CLP who are being bullied want emotional support and seek it on social media.²⁶ Twitter enables victims of bullying to interact with each other and with different people from all around the world, which is of great importance as it provides psychological support and could make them feel that they are not alone. Since 9 percent of the tweets examined in our study consisted of support tweets, it is pleasing to see that individuals with CLP can find this support on Twitter if they search for it. The dental and medical team should be sharing links to sources of professional/regulated support for those experiencing bullying in their profiles to raise awareness of the issue and encourage those who have/are experiencing bullying to seek support. This will increase social awareness and highlight the availability of support that these individuals seek.

When patients with CLP are referred to the clinic for orthodontic treatment, the approach of the orthodontist is very important as these patients require psychological assessment. It should be taken into consideration that these patients may have been bullied in the past or may be potential victims of bullying. If they have not yet received such support, CLP patients who are victims of bullying should be directed to get psychological help so that they can get adequate emotional and psychological support.

CONCLUSIONS

- It has been seen that Twitter is a platform where not only victims of bullying but also many different segments of the society share tweets with different content about bullying in CLP.
- Twitter is an important platform for bullying victims with CLP to share their experiences and seek social support.
- Dental professionals, especially orthodontists, who have an important place in the treatment of patients with CLP from their early ages, should be aware of the bullying experienced by these patients and should determine their patient approaches and treatment options by considering this situation.

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REFERENCES

1. Rachel Henzell M, Margaret Knight A, Morgaine K, S. Antoun J, Farella M. A qualitative analysis of orthodontic-related posts on Twitter. *Angle Orthod.* 2014;84:203-37.
2. Dunn AG, Mandl KD, Coiera E. Social media interventions for precision public health: promises and risks. *NPJ Digit Med.* 2018;1:47.
3. Moukarzel S, Rehm M, Daly AJ. Breastfeeding promotion on Twitter: A social network and content analysis approach. *Matern Child Nutr.*2020;16:e13053.
4. Spriggs AL, Iannotti RJ, Nansel TR, Haynie DL. Adolescent bullying involvement and perceived family, peer and school relations: Commonalities and differences across race/ethnicity. *J Adolesc Health.* 2007;41:283-93.

5. Fleming LC, Jacobsen KH. Bullying among middle-school students in low and middle income countries. *Health Promot Int.* 2010;25:73-84.
6. Piquart M. Systematic review: bullying involvement of children with and without chronic physical illness and/or physical/sensory disability—a meta-analytic comparison with healthy/nondisabled peers. *J Pediatr Psychol.* 2017;42:245-59.
7. Chan A, Antoun J, Morgaine K, Farella M. Accounts of bullying on Twitter in relation to dentofacial features and orthodontic treatment. *J Oral Rehabil.* 2017;44:244-50.
8. Olweus D. Bullying at school: basic facts and effects of a school based intervention program. *J Child Psychol Psychiatry.*1994;35:1171-90.
9. Reijntjes A, Kamphuis JH, Prinzie P, Telch MJ. Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse Neg.* 2010;34:244-52.
10. Winsper C, Lereya T, Zanarini M, Wolke D. Involvement in bullying and suicide-related behavior at 11 years: a prospective birth cohort study. *J Am Acad Child Adolesc Psychiatry.* 2012;51:271-82.e3.
11. Seehra J, Fleming PS, Newton T, DiBiase AT. Bullying in orthodontic patients and its relationship to malocclusion, self-esteem and oral health-related quality of life. *J Orthod.* 2011;38:247-56; quiz 294.
12. Bender PL. Genetics of cleft lip and palate. *J Pediatr Nurs.*2000;15:242-9.
13. Worley ML, Patel KG, Kilpatrick LA. Cleft lip and palate. *Clin Perinatol.* 2018;45:661-78.
14. Leonard BJ, Brust JD, Abrahams G, Sielaff B. Self-concept of children and adolescents with cleft lip and/or palate. *Cleft Palate Craniofac J.* 1991;28:347-53.
15. Kim AE, Hansen HM, Murphy J, Richards AK, Duke J, Allen JA. Methodological considerations in analyzing Twitter data. *J Natl Cancer Inst Monogr.* 2013;2013:140-6.
16. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3:77-101.
17. Hunt O, Burden D, Hepper P, Stevenson M, Johnston C. Self-reports of psychosocial functioning among children and young adults with cleft lip and palate. *Cleft Palate Craniofac J.* 2006;43:598-605.
18. Hunt O, Burden D, Hepper P, Stevenson M, Johnston C. Parent reports of the psychosocial functioning of children with cleft lip and/or palate. *Cleft Palate Craniofac J.* 2007;44:304-11.
19. Nicholls W, Selvey LA, Harper C, Persson M, Robinson S. The psychosocial impact of cleft in a Western Australian cohort across 3 age groups. *Cleft Palate Craniofac J.* 2019;56:210-21.
20. Al-Moghrabi D, Johal A, Fleming PS. What are people tweeting about orthodontic retention? A cross-sectional content analysis. *Am J Orthod Dentofacial Orthop.* 2017;152:516-22.
21. Noll D, Mahon B, Shroff B, Carrico C, Lindauer SJ. Twitter analysis of the orthodontic patient experience with braces vs Invisalign. *Angle Orthod.* 2017;87:377-83.
22. Graf I, Gerwing H, Hofer K, Ehlebracht D, Christ H, Braumann B. Social media and orthodontics: A mixed-methods analysis of orthodontic-related posts on Twitter and Instagram. *Am J Orthod Dentofacial Orthop.* 2020;158:221-8.
23. Thelwall M, Buckley K, Paltoglou G. Sentiment strength detection for the social web. *J Am Soc Inf Sci Tec.* 2012;63:163-73.
24. Madden M, Lenhart A, Cortesi S, Gasser U, Duggan M, Smith A et al. Teens, social media, and privacy. *Pew Research Center.*2013;21:2-86.
25. Bellmore A, Calvin AJ, Xu J-M, Zhu X. The five W's of “bullying” on Twitter: Who, what, why, where, and when. *Comput Hum Behav.*2015;44:305-14.

26. Greene JA, Choudhry NK, Kilabuk E, Shrank WH. Online social networking by patients with diabetes: a qualitative evaluation of communication with Facebook. *J Gen Intern Med.* 2011;26:287-92.

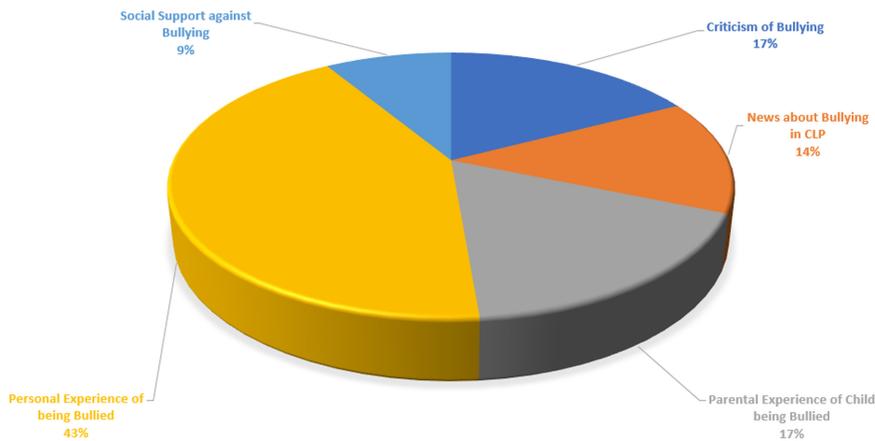
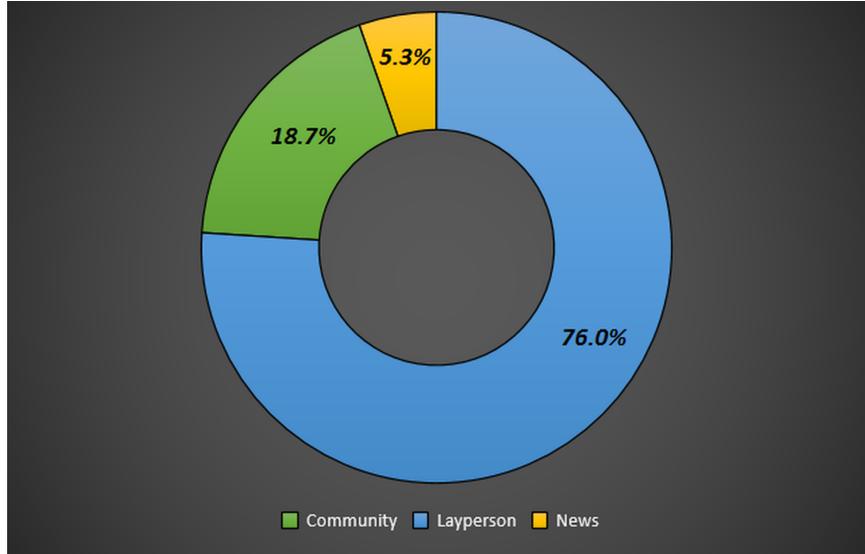
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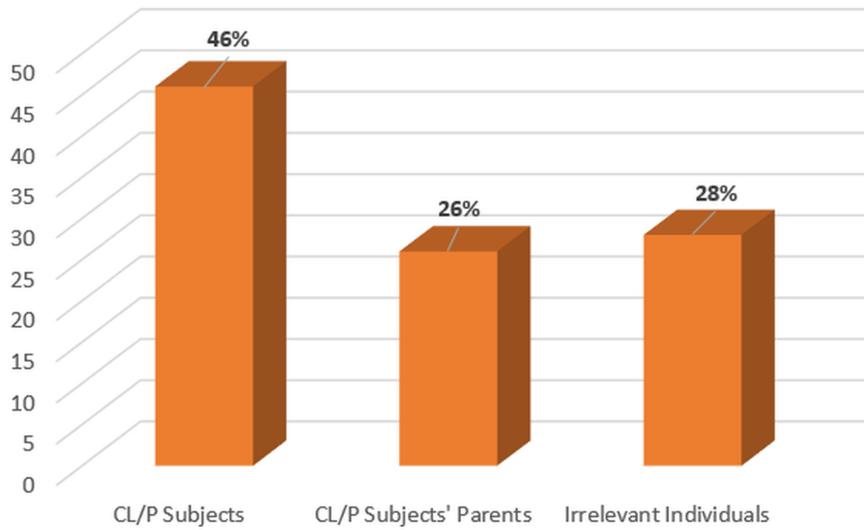
Figure 1. The % distributions of the tweets according to the source.

Figure 2. The % distributions of the tweet's themes.

Figure 3. The % distributions of tweet uploader status about CLP.

Figure 4. Word cloud of all posts on Twitter about bullying CLP.





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