



# What are people tweeting about orthodontic retention? A cross-sectional content analysis

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**Introduction:** Social media can offer valuable insights in relation to the perceptions and impact of medical treatments on patient groups. There is also a lack of information concerning patient experiences with orthodontic retainers and little appreciation of barriers to optimal compliance with orthodontic retention. The aim of this study was to describe the content of Twitter posts related to orthodontic retainers. **Methods:** Publicly available tweets were prospectively collected over a period of 3 to 4 weeks using a bespoke social media monitoring tool. A total of 7037 tweets were collected, of which 827 were randomly selected for the analysis. Pilot coding was undertaken on a subset of tweets ( $n = 70$ ), and a coding guide was developed. Tweets were iteratively categorized under the main themes and subthemes. The frequencies of tweets in each theme and subtheme were subsequently determined. **Results:** Of 827 tweets, 660 were included in the analysis. The main themes identified included compliance, impact, maintenance, patient-clinician relationship, and positive and negative feelings. Compliance with orthodontic retainers was the most frequently coded theme ( $n = 248$ ), with most reporting suboptimal compliance. The negative impact of orthodontic retainers on social and daily activities ( $n = 192$ ) and the maintenance requirements ( $n = 115$ ) were commonly mentioned. Patients also frequently expressed feelings about their clinician. **Conclusions:** Subjective experiences in relation to orthodontic retainers were commonly shared on Twitter. Most of the publicly available tweets portrayed retainer wear in a negative light. (Am J Orthod Dentofacial Orthop 2017;152:516-22)

Increasingly, orthodontic retention is recommended on an indefinite basis, implying that it may be a life-long experience. Fixed retention has variously been linked to altered speech, discomfort, tongue irritation, hindrance of oral hygiene measures, and esthetic concerns.<sup>1-3</sup> Furthermore, failure to comply with removable retention has been attributed to associated discomfort and hassle,<sup>4,5</sup> with embarrassment related to speech and esthetics also commonplace with removable retainers.<sup>6</sup> In spite of these barriers to retainer wear, relatively little is known about patients' experiences during the retention

phase, especially in the long term, or concerning factors affecting compliance levels.<sup>7,8</sup>

Recent estimates have suggested that two-thirds of orthodontists and orthodontic patients use social media.<sup>9,10</sup> Orthodontists use social media for advertising,<sup>10</sup> research dissemination,<sup>11</sup> and patient education.<sup>12</sup> In contrast, patients' documented use of social media in the context of orthodontics has encompassed posting of videos on YouTube related to treatment<sup>13</sup> and tweeting about experiences with active appliances and aligners.<sup>14,15</sup> In terms of seeking orthodontic-related knowledge, surprisingly only 7% to 8% of prospective patients considered using the Internet or social media to access relevant information.<sup>9,16</sup> Social media content in relation to orthodontic retainers has not previously been investigated.

The perils of seeking orthodontic information have been highlighted with suboptimal quality of Web sites in relation to adult orthodontics, orthodontic extractions, pain, and oral hygiene maintenance during orthodontic treatment identified.<sup>17-20</sup> Furthermore, a study evaluating recommendations regarding retainer wear regimens exposed inconsistent advice.<sup>21</sup> This is important since patients increasingly seek medical information online and may use

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**Table 1.** Main themes, with definitions and a relevant representative tweet

Main theme	Definition	Representative tweet
Compliance	Indicates retainer wear status, consequences of poor compliance, barriers, or facilitators.	"Omg i just realized Ive been forgetting to sleep with my retainers in ... for like ... the last 3 years"
Impact	Illustrates the effects of retainers on daily activities or social life.	"The dentist told me I need to start wearing my retainers again ... cant wait to look nerdy w/ugly lisps"
Maintenance	Refers to the care needed to maintain or prevent the loss of orthodontic retainers.	"Flossing with permanent retainers is difficult. I should be paid for this. I made my orthodontist so much money."
Patient-clinician relationship	Concerns the ease or difficulty in dealing with or accessing clinicians, or describes the quality of communication between patients and clinicians.	"When your orthodontist says you can start wearing your retainers at night only but you've already been doing that."
Positive feelings	Any tweet related to retainer wear expressed in a positive tone.	"Feel so accomplished for having worn my retainers every night this week lol."
Negative feelings	Any tweet related to retainer wear expressed in a negative tone.	"I HATE HATE HATE HATE HATE RETAINERS."
Miscellaneous	Any tweet providing information not categorized in the main themes.	"Dentist tomorrow to pick up retainers and finally get this ... screw out my jaw then post brace life officially starts."

this information for self-diagnosis and behavioral alteration.<sup>22</sup> The latter may be particularly influential for patients during retention because they may no longer be under the supervision of an orthodontist.

Twitter is a popular social networking Web site established in 2006, with more than 300 million active users in 2016.<sup>23</sup> Twitter users can post and repost tweets and follow other users, enabling social communication and networking. Twitter is seen as a safe space in which users can share real-time experiences; nearly a quarter of orthodontists and orthodontic patients use it.<sup>10</sup> Data derived from Twitter has gained little attention in the orthodontic literature, with isolated studies reporting on the content of tweets concerning orthodontic treatment and aligners, and bullying in relation to malocclusion and fixed appliances.<sup>14,15,24</sup> No studies have evaluated Twitter content with regard to orthodontic retainers. Analysis of Twitter posts is likely to portray experiences of retainer wear and may provide important insight into how compliance is influenced by peer experience. The aim of this cross-sectional study was therefore to describe the content of Twitter posts related to orthodontic retainers. See [Supplemental Materials](#) for a short video presentation about this study.

## MATERIAL AND METHODS

Tweets were prospectively collected from publicly available posts on Twitter ([www.twitter.com](http://www.twitter.com)) using a bespoke social media monitoring tool (<https://www.brand24.com>). The search was limited to original English language tweets. Tweets containing the keywords "retainer or retainers" were collected over a period of 3 weeks (October 13 to November 2, 2016). This search yielded 6900 tweets; these were exported and randomly ordered using Excel (Microsoft, Redmond, Wash), with

10% of them randomly selected ( $n = 690$ ). This number was expected to be sufficient to obtain thematic saturation based on previous research.<sup>25</sup> Thereafter, a follow-up search, in which tweets were collected over a 1-month period (December 2016) was undertaken to ensure that no new themes emerged from the data, using the following keywords: "retainers AND dentist" or "retainers AND orthodontist." The later search yielded 137 tweets, and all were included in the analysis. The exported data included the tweet, date and time of posting, and the number of followers. Tweets were excluded if the content was unclear, not in English, irrelevant to orthodontic retainers, or a duplicate. Pilot coding was undertaken on a subset of tweets ( $n = 70$ ) by 2 authors (D.A. and P.S.F.) to agree on themes. Reconciliation of disagreement followed joint discussion, and an initial coding guide was agreed upon. If a link was provided in the tweet, it was investigated to better understand the content. Each tweet was categorized according to its content; in certain scenarios, some tweets were categorized under several themes. To classify the tweeter into patient or professional, the public profile was checked as required.

## Content analysis

The data were categorized under initial themes (Table 1). When a new theme emerged, the list of themes was reviewed iteratively, refined, and retested against the data. Frequencies of tweets in each theme and subtheme were subsequently determined.

## RESULTS

Of 827 tweets, 660 were included in the content analysis (Fig 1). These tweets were posted by 642 users, who had 483,458 followers overall. The themes

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