

Factors Influencing Decisions to Obtain Fashion Orthodontics From Nondental Providers Among Young Adults in Mueang Phayao District, Thailand

Arnun Jukisalapong 

Dental Department, Bangkok Hospital Chiang Mai, Chiang Mai, Thailand

Abstract

Background: Fashion orthodontics, imitation appliances placed by unlicensed providers, has emerged as a significant public health concern among Thai youth. Despite documented risks, including tooth decay and heavy metal toxicity, the psychosocial drivers behind this trend remain under-researched in provincial settings.

Objectives: To identify the psychosocial and structural factors influencing the intention and adoption of fashion orthodontics among young adults (18-25 years) in Mueang Phayao district, Thailand, by integrating the health belief model and the theory of planned behavior.

Methods: An explanatory sequential mixed-methods design was employed. In Phase 1, focus group discussions (n = 34) and in-depth interviews (n = 12) were conducted to explore motivations and perceived risks. These findings informed the development of a Phase 2 quantitative survey (N = 400). Participants were recruited using multistage cluster sampling. Data were analyzed using multivariate logistic regression, ordinal regression with Brant test verification, and structural equation modeling.

Results: The prevalence of ever or current orthodontics use was 19.8%, with 22.0% reporting high intention within the past 12-months. Subjective norms (peer influence) were the strongest predictors of both behavior (adjusted odds ratio [aOR], 1.46; 95% CI, 1.26-1.69) and intention (proportional OR [pOR], 1.52; 95% CI, 1.33-1.74). Favorable attitudes and high perceived behavioral control significantly increased uptake, whereas higher oral health literacy and perceived risk acted as protective factors. Structural barriers to standard care, such as long waiting times (median 28 days), further encouraged young adults toward unregulated alternatives.

Conclusions: Adoption is primarily driven by social norms and aesthetic desires rather than medical necessity. Interventions should focus on behaviorally informed risk communication and improving access to licensed orthodontic services to protect young adults' oral health.

Keywords: Fashion orthodontics, Young adults, Mixed-methods, Health belief model, Theory of planned behavior, Thailand

Citation: Jukisalapong A. Factors influencing decisions to obtain fashion orthodontics from nondental providers among young adults in Mueang Phayao district, Thailand. *Res Med J*. 20XX; XX(X):e277660. doi:10.33165/rmj.2027.e277660

Corresponding Author:
chopinconcerto@gmail.com

Received: 12 September 2025

Revised: 2 February 2026

Accepted: 4 February 2026

Published Online:

13 February 2026



Copyright © 2026
by the Author(s).

Licensee RMJ. This article is licensed under the Creative Commons Attribution (CC BY) License.

Introduction

Orthodontic care is primarily performed to correct malalignment and malocclusion, with the clinical objective of improving chewing efficiency and reducing the long-term risks of periodontal disease, dental caries, and other oral complications.^{1, 2} In addition to functional improvements, orthodontic procedures significantly enhance facial aesthetics.

A well-aligned smile and balanced facial profile have a direct, documented influence on an individual's self-confidence and quality of social interactions.^{1,2}

Fixed orthodontic appliances were historically viewed as a novelty in the Thai context. Earlier versions were often large, metallic, and difficult to conceal, which led many patients to feel self-conscious or uncomfortable in public settings.³ Continuous developments in dental materials and appliance design have fundamentally transformed this image over time. With the advent of smaller brackets, ceramic systems, lingual braces, and clear aligners, orthodontic appliances have become widely accepted among both young adults and older populations.^{3,4} Currently, a significant proportion of patients seek professional care not solely for medical malocclusion but as an aesthetic choice to improve self-image.^{2,3} However, despite this high demand, standard orthodontic treatment remains a high-cost investment with significant long-term demands.

Despite these clear benefits, standard orthodontic treatment remains a high-cost investment that typically requires a multi-year commitment. These financial and longitudinal demands serve as significant barriers to professional care for many young adults and families with limited socioeconomic resources. Consequently, this has led to the emergence and rising popularity of "fashion orthodontics" (also referred to as "fake suspenders"). These devices are imitation appliances placed by unqualified and unlicensed providers without any professional dental examination or treatment planning.^{4,5} Furthermore, they frequently utilize non-medical grade materials that do not meet standard safety requirements.^{3,5}

The proliferation of fashion orthodontics has raised alarming public health concerns.^{6,7} Complications range from localized tooth decay and gingival inflammation to more severe outcomes, such as unwanted tooth movement, aspiration of loose components, and systemic infections.⁷⁻¹⁰ Critical investigations have identified hazardous levels of metal ions and heavy metals, including cadmium, in materials used for these devices — levels that pose significant toxicological risks if worn long-term.¹¹⁻¹⁴ In rare cases, fatalities directly linked to these unregulated practices have been reported.^{15,16} In response, regulatory bodies such as the Thai Food and Drug Administration and the Office of the Consumer Protection Board have officially banned the production and sale of these products, pursuing legal action against illegal providers.^{1,5,6}

Despite these legal restrictions and documented health warnings, fashion orthodontics remains a popular trend among young adults who view these appliances as symbols of modernity and social status.^{7,8} Previous evidence in Thailand suggests that the choice to adopt fashion orthodontics is often a complex decision shaped by the desire to follow digital trends, peer recommendations, and the perceived ease of access and low cost of the service.^{4,5,9}

The World Health Organization (WHO) Global Oral Health Strategy (2022) and the Action Plan 2023-2030 emphasize the necessity of reducing health inequities and strengthening regulations to limit such high-risk practices.^{17,18} Understanding the underlying psychosocial determinants behind these choices is essential to effectively address this issue. Therefore, the present study, therefore, aims to examine the factors influencing these decisions by integrating the health belief model (HBM) and the theory of planned behavior (TPB).^{9,10} By identifying how young adults weigh perceived risks against social benefits, this study seeks to generate empirical evidence to inform more effective risk communication strategies and public health policies designed to protect vulnerable populations.¹

Methods

Study Design

This study used an explanatory sequential mixed-methods design consisting of 2 distinct phases.

Phase 1 (Qualitative): Focus group discussions (FGDs) and in-depth interviews (IDIs) were conducted to explore the participants' motivations, perceived risks, social influences, and accessibility. The qualitative findings informed the generation and refinement of questionnaire items mapped to the HBM and the TPB.^{9, 10}

Phase 2 (Quantitative): An analytic cross-sectional survey (N = 400) was conducted to estimate the prevalence and identify the psychosocial and structural determinants of the adoption of fashion orthodontics.

Population and Sampling

This study was conducted in Mueang Phayao district, Phayao province, Thailand. The primary target population was young adults aged 18-25 years who had resided or studied in the district for at least 6 months.

Phase 1 (Qualitative): Purposive maximum-variation sampling was used to ensure diversity in sex, age bands (18-20, 21-23, 24-25), and media exposure. Recruitment continued until thematic saturation was achieved, resulting in 5 FGDs (n = 34) and 12 IDIs.

Phase 2 (Quantitative): A multistage cluster sampling design was implemented. This study first selected educational institutions and community venues, followed by simple random sampling within classes or groups to recruit 400 participants. Crucially, this ensured that Phase 2 participants were recruited independently from Phase 1 to minimize participation bias and ensure a broader, more representative sample.

Research Instruments

This study developed a self-administered questionnaire (approximately 15-20 minutes) consisting of 5 sections: 1) sociodemographics and structural access; 2) media and influencer exposure; 3) HBM constructs (susceptibility, severity, benefits, barriers, and cues to action); 4) TPB constructs (attitude, subjective norms, perceived behavioral control, and 12-month intention); and 5) oral health literacy (OHL) and material safety knowledge.

The instrument was rigorously validated. Items were derived from the themes of Phase 1 and relevant literature. Expert content validity was established with an index of item-objective congruence (IOC) ≥ 0.80 . Reliability targets were set at Cronbach $\alpha \geq 0.70$ for all subscales. The survey was pilot-tested with 90 participants to ensure clarity.

Data Collection and Quality Control

Quantitative data were collected using tablets with the REDCap mobile platform to minimize data entry errors. A visual vignette was included to clearly contrast fashion appliances with licensed orthodontic appliances to prevent misclassification of the outcome. Daily data audits were performed to identify outliers or incomplete responses, and approximately 10% of participants were contacted for verification.

Statistical Analysis

Reflexive thematic analysis was applied to the qualitative data. For the quantitative phase, we computed descriptive statistics and domain scores (0-100). In this study, "high intention" was defined as a mean score of ≥ 4 on a 5-point Likert scale, representing participants

who “agreed” or “strongly agreed” with the intention to seek fashion orthodontics; this threshold is commonly used in behavioral research based on the TPB to distinguish those with a clear behavioral leaning. Psychometric properties were confirmed using exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA), with fit thresholds set at the comparative fit index/Tucker-Lewis index (CFI/TLI) ≥ 0.90 and the root mean square error of approximation/standardized root mean squared residual (RMSEA/SRMR) ≤ 0.08 .^{15, 19}

Multivariate logistic regression was used to identify predictors of ever/current use, whereas ordinal logistic regression was used for 12-month intention. As suggested by the reviewers, we verified the proportional odds assumption for the ordinal models using the Brant test. Finally, a prespecified structural equation modeling (SEM) was conducted to assess the indirect effects of media exposure through TPB constructs.^{18, 19}

Results

Psychometric Properties and Instrument Reliability

Before conducting the primary analysis, the research instrument's internal consistency and construct validity were evaluated. All HBM and TPB subscales demonstrated acceptable reliability with Cronbach α ranging from 0.72 to 0.86. The CFA confirmed a robust factor structure with a CFI and TLI of 0.93 and 0.92, respectively, indicating that the model fit the empirical data well (Table 1).

Phase 1 Findings (Qualitative)

Qualitative analysis revealed that participants generally underestimated their susceptibility to the risks associated with fashion orthodontics. Perceived benefits were primarily centered on immediate esthetics, peer acceptance, and the “modern” status associated with wearing suspenders. Participants framed structural barriers (cost and waiting time) mainly in comparison with licensed orthodontic care, rather than fashion options. Notably, subjective norms emerged as the strongest proximal driver, as peer uptake frequently outweighed family disapproval or health concerns.

Phase 2 Findings (Quantitative)

The final sample (N = 400) had a mean (SD) age of 21.2 (2.1) years. The majority of participants were female (61.5%) and students (78.0%). Structural barriers to professional care were prominent, with participants reporting a median travel time of 35 minutes and a median waiting period of 28 days for an initial appointment. Social media engagement was high, with a median use of 9 hours per week across platforms such as TikTok and Instagram (Table 2).

Prevalence of Use

The prevalence of ever or current use of fashion orthodontics was 19.8% (n = 79). Fixed imitation devices were the most common among users (46.8%). Furthermore, 22.0% of the sample reported a high intention to obtain these appliances within the next 12 months, often linked to upcoming social milestones (Table 3).

Psychosocial Determinants

Participants reported high scores for perceived benefits and self-efficacy toward fashion options, whereas risk perception remained relatively low (Table 4).

Multivariate Analysis

In the final models, subjective norms were the strongest predictor for both ever/current use (adjusted odds ratio [aOR], 1.46) and intention (proportional OR [pOR], 1.52) (Table 5). Conversely, OHL and perceived risk acted as significant protective factors. The Brant test confirmed the assumption of proportional odds for the intention model ($P > .05$).

The SEM analysis further confirmed that media exposure exerts an indirect effect on intention through its influence on subjective norms and attitudes. The final structural model and standardized path coefficients are illustrated (Figure 1).

Table 1. Psychometric Properties

Domain	Cronbach α	EFA/CFA Fit Indices
Health belief model		Overall model fit
Perceived susceptibility	0.78	CFI: 0.93
Perceived severity	0.76	TLI: 0.92
Perceived benefits	0.85	RMSEA: 0.058
Perceived barriers	0.82	SRMR: 0.051
Cues to action	0.74	
Self-efficacy	0.80	
Theory of planned behavior		
Attitude	0.86	
Subjective norms	0.84	
Perceived behavioral control	0.81	
Intention	0.83	
Oral health literacy	0.72	

Abbreviations: CFA, confirmatory factor analysis; CFI, comparative fit index; EFA, exploratory factor analysis; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual.

Table 2. Sample Characteristics

Characteristic	No. (%)
Age, mean (SD), y	21.2 (2.1)
Female	246 (61.5)
Urban residence	256 (64.0)
Student	312 (78.0)
Employed	88 (22.0)
Prior licensed orthodontic care	48 (12.0)
Travel time to the standard clinic, median (IQR), min	35 (20-55)
Waiting time for the first appointment, median (IQR), d	28 (14-60)
Total social media use, median (IQR), h/wk	9 (5-14)

Table 3. Primary Outcomes

Outcome	No. (%)
Ever/currently used orthodontics	79 (19.8)
Current use	44 (11.0)
Among users: fixed imitation (n = 79)	37 (46.8)
Among users: removable imitation (n = 79)	21 (26.6)
Among users: beaded wire (n = 79)	21 (26.6)
High intention ($\geq 4/5$)	88 (22.0)
Intention score (1-5), mean (SD)	2.8 (1.1)

Table 4. Domain Scores (0-100 Scale)

Domain	Mean (SD)
HBM: perceived susceptibility	39 (15)
HBM: perceived severity	41 (16)
HBM: perceived benefits (fashion)	72 (14)
HBM: perceived barriers (standard care)	65 (17)
HBM: cues to action	58 (15)
HBM: self-efficacy (fashion)	74 (13)
TPB: attitude	70 (14)
TPB: subjective norms	68 (14)
TPB: perceived behavioral control	71 (14)
Oral health literacy (correct percentage)	63 (14)

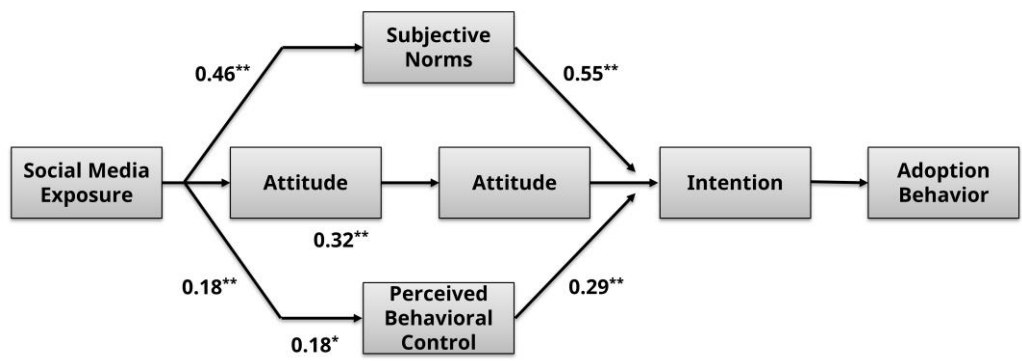
Abbreviations: HBM, health belief model; TPB, theory of planned behavior.

Table 5. Key Predictors

Predictor	Ever/Current Use, aOR (95% CI)	12-Month Intention, pOR (95% CI)
TPB: subjective norms	1.46 (1.26-1.69)	1.52 (1.33-1.74)
TPB: attitude	1.21 (1.05-1.39)	1.29 (1.14-1.46)
TPB: perceived behavioral control	1.17 (1.02-1.34)	1.22 (1.08-1.38)
HBM: perceived risk (mean of susceptibility and severity)	0.82 (0.71-0.94)	0.79 (0.70-0.89)
Oral health literacy	0.88 (0.78-0.99)	0.85 (0.76-0.96)
HBM: barriers to standard care	1.25 (1.10-1.43)	NA
Media exposure (per 1 SD, approximately 5 h/wk)	1.19 (1.03-1.38)	1.23 (1.10-1.38)

Abbreviations: aOR, adjusted odds ratio; HBM, health belief model; NA, not applicable; pOR, proportional odds ratio; TPB, theory of planned behavior.

Figure 1. Structural Equation Model of Psychosocial and Structural Determinants for Fashion Orthodontics Adoption



Standardized path coefficients (β) are shown; asterisks indicate significant paths (* $P < .05$, ** $P < .01$).

Discussion

The findings of this study demonstrate that approximately 20% of young adults in Mueang Phayao have engaged in fashion orthodontics, with a similar proportion intending to do so in the near future. This prevalence is consistent with previous Thai studies conducted in urban settings, suggesting that the trend remains a persistent public health challenge.^{1, 3, 5}

Interpretation

The integration of HBM and TPB provides a comprehensive understanding of these behavior. Consistent with this qualitative findings, social pressure emerged as the most significant driver of adoption. In the developmental stage of young adulthood (18-25 years), peer acceptance and social alignment often take precedence over long-term health consequences.^{9, 10} This trend is further amplified by favorable attitudes toward the "modern" and "stylish" appearance of fashion appliances, which participants viewed as high-status symbols rather than medical devices. This analysis demonstrates that the desire for group belonging frequently outweighs the perceived severity of health risks.

From an HBM perspective, the low perceived susceptibility and severity of harm acted as a major catalyst for adoption. Many participants normalized minor complications, such as gingival irritation, as a necessary trade-off for esthetic gain. However, the multivariate analysis (Table 5) confirmed that higher OHL and risk perception are significant protective factors. Participants with a better understanding of material safety and the biological risks of uncontrolled tooth movement were significantly less likely to intend to use fashion orthodontics.^{2, 9, 18}

The Role of Media and Structural Barriers

Social media exposure, particularly on platforms such as TikTok and Instagram, acts as a primary "cue to action". This SEM analysis confirmed that media exposure not only provide information but also actively shapes subjective norms and enhanced favorable attitudes toward fashion options.^{6, 8} This digital environment often bypasses traditional health warnings by presenting fashion orthodontics through the lens of influencers and peer trends.

Furthermore, structural barriers to licensed care — such as the median waiting time of 28 days and significant travel distances — create a "service gap" that illegal providers exploit. When professional care is perceived as inaccessible or unaffordable, the high perceived behavioral control associated with the ease of obtaining fashion orthodontics makes them an attractive alternative.^{4, 5, 20}

Implications for Policy and Practice

These results align with the WHO Global Oral Health Strategy, emphasizing the need for interventions that go beyond simple risk warnings.^{17, 18}

Behaviorally Informed Communication: Risk messages should be tailored to young adults, focusing on the immediate dangers of toxic heavy metals (such as cadmium) and permanent dental damage, rather than just abstract health concepts.¹¹⁻¹³

Norm-Change Strategies: Using peer-led campaigns and engaging social media influencers to denormalize unregulated practices could be more effective than top-down clinical warnings.

Improving Access: Reducing barriers to licensed care through more transparent pricing and shorter waiting times is essential for redirecting youth toward safe, evidence-based orthodontic treatment.²⁰

Strengths and Limitations

The explanatory sequential mixed-methods design is the major strength of this study, which allowed us to ground our quantitative measures in the real-world experiences of the target population. However, the survey's cross-sectional nature limits our ability to establish definitive causality. Additionally, because the study focused on Mueang Phayao, the findings may not be fully generalizable to other regions with different socioeconomic profiles.¹⁹

Conclusions

The adoption of fashion orthodontics among young adults is primarily driven by peer norms, favorable attitudes, and the perceived convenience of unregulated services. In contrast, risk perception and OHL serve as critical protective buffers. Public health strategies must combine behaviorally informed risk communication with systemic improvements in the accessibility of standard orthodontic care and stricter regulation of online promotions to effectively address this issue. Such measures are vital to protect the oral health and long-term well-being of the youth population in accordance with global health standards.

Additional Information

Ethics Approval: This study was conducted in accordance with the Declaration of Helsinki. The research protocol was reviewed and approved by the Royal Thai Army Medical Department Institutional Review Board (S058q/63 on 17 November 2020). The approval covered the research objectives, the setting in Mueang Phayao district, and all data collection procedures. The study obtained written informed consent from all individual participants prior to their involvement in either phase of the study.

Clinical Trial Consideration: This study does not report on a clinical trial.

Financial Support: No financial support was provided for this study.

Conflict of Interest: The authors declare no conflict of interest.

Author Contributions:

Conceptualization: Arnun Jukislapong

Formal Analysis: Arnun Jukislapong

Investigation: Arnun Jukislapong

Methodology: Arnun Jukislapong

Visualization: Arnun Jukislapong

Writing – Original Draft: Arnun Jukislapong

Writing – Review & Editing: Arnun Jukislapong

References

1. Piyasuntorn S, Pisarnaturakit PP, Somkotra T, Sirichompun C. Factors associated with fake braces use among Thai adolescents living in Bangkok. *J Dent Assoc Thai*. 2023;73(4):250-259. doi:10.14456/jdat.2023.25
2. Imani MM, Jalali A, Dinmohammadi M, Nouri P. The effect of orthodontic intervention on mental health and body image. *Open Access Maced J Med Sci*. 2018;6(6):1132-1137. doi:10.3889/oamjms.2018.243
3. Rityoue A, Sasiwongsaroj K. Pseudo-orthodontics among Thai teenagers and its effects on oral health. *Th Dent PH J*. 2009;14(1):7-19.
4. Sriarunotai S, Boonyagul S. Ion released from fashion orthodontic brackets and standardized orthodontic brackets in artificial saliva. *Interprof J Health Sci*. 2023;14(2):40-46.
5. Pothidee T, Khamthalaeng K, Noikeaw J, Pitukpotong W, Krueachaipinit A. Fashion braces services in the perspective of students in a northern secondary school. *Th Dent PH J*. 2017;22(2):39-47.
6. Graf I, Gerwing H, Hoefer 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(2):221-228. doi:10.1016/j.ajodo.2019.08.012
7. Sorooshian S, Kamarozaman AA. Fashion braces: an alarming trend. *Sao Paulo Med J*. 2018;136(5):497-498. doi:10.1590/1516-3180.2018.0296250718
8. Masoud AI, Alshams FA. The use of decorative braces in Jeddah, Saudi Arabia. *J Orthod Sci*. 2020;9(1):18. doi:10.4103/jos.JOS_25_20
9. Alhazmi AS, Al Agili DE, Aldossary MS, et al. Factors associated with the use of fashion braces of the Saudi Arabian Youth: application of the health belief model. *BMC Oral Health*. 2021;21(1):251. doi:10.1186/s12903-021-01609-w
10. Ajzen I. The theory of planned behavior. *Organ Behav Hum Decis Process*. 1991;50(2):179-211. doi:10.1016/0749-5978(91)90020-T

11. Haleem R, Shafiai NAA, Noor SNFM. Metal ions leachables from fake orthodontic braces incubated in simulated body fluid. *BMC Oral Health*. 2021;21(1):507. doi:10.1186/s12903-021-01880-x
12. Huang TH, Ding SJ, Min Y, Kao CT. Metal ion release from new and recycled stainless steel brackets. *Eur J Orthod*. 2004;26(2):171-177. doi:10.1093/ejo/26.2.171
13. Huang HH, Chiu YH, Lee TH, et al. Ion release from NiTi orthodontic wires in artificial saliva with various acidities. *Biomaterials*. 2003;24(20):3585-3592. doi:10.1016/s0142-9612(03)00188-1
14. Eliades T, Trapalis C, Eliades G, Katsavrias E. Salivary metal levels of orthodontic patients: a novel methodological and analytical approach. *Eur J Orthod*. 2003;25(1):103-106. doi:10.1093/ejo/25.1.103
15. Shintcovsk RL, Knop LAH, Gandini LG Jr, Martins LP, Pires AS. Comparison surface characteristics and chemical composition of conventional metallic and nickel-free brackets. *Braz Oral Res*. 2015;29(1):1-8. doi:10.1590/1807-3107BOR-2015.vol29.0022
16. Rani H, Arjunaidy B, Roslan NA, Wan Muhamad WNSA, Yahya NA. A descriptive summary of unlicensed dental practice. *MJPHM*. 2020;20(2):252-260. doi:10.37268/mjphm/vol.20/no.2/art.548
17. World Health Organization. *Global Oral Health Status Report: Towards Universal Health Coverage for Oral Health by 2030*. World Health Organization; 2022. 18 November 2022. Accessed 27 January 2026. <https://www.who.int/publications/i/item/9789240061484>
18. World Health Organization. Draft Global Oral Health Action Plan (2023-2030). 11 January 2023. Accessed 27 January 2026. [https://www.who.int/publications/m/item/draft-global-oral-health-action-plan-\(2023-2030\)](https://www.who.int/publications/m/item/draft-global-oral-health-action-plan-(2023-2030))
19. Hakami Z, Chung HS, Moafa S, et al. Impact of fashion braces on oral health related quality of life: a web-based cross-sectional study. *BMC Oral Health*. 2020;20(1):236. doi:10.1186/s12903-020-01224-1
20. Carter A, Stokes S. Availability of 'Do-It-Yourself' orthodontics in the United Kingdom. *J Orthod*. 2022;49(1):83-88. doi:10.1177/14653125211021607