



JOURNAL OF INDOONESIAN DENTAL ASSOCIATION

📍 [PERSATUAN DOKTER GIGI INDONESIA](#)  
 ✨ P-ISSN : 26216183 <> E-ISSN : 26216175

**0**  
Impact Factor

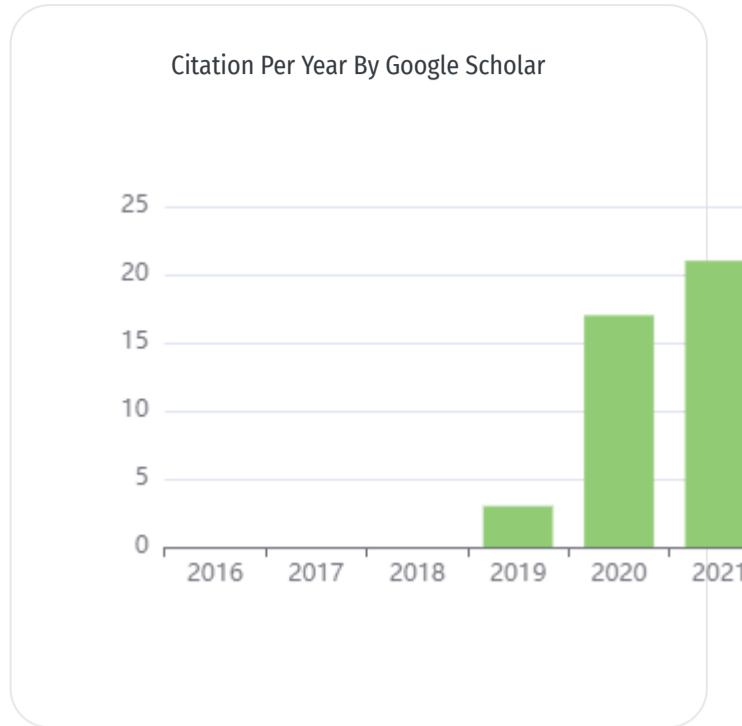
**89**  
Google Citations

**Sinta 3**  
Current Accreditation

- [Google Scholar](#)
- [Garuda](#)
- [Website](#)
- [Editor URL](#)

History Accreditation

2018                      2019                      2020                      2021                      2022



	All	Since 2019
Citation	89	88
h-index	6	6
i10-index	1	1

Garuda      Google Scholar

Mechanical Properties of Giomer After Immersion in Carbonated Drinks

Indonesian Dental Association      [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 79-84](#)

📅 2023      🗒️ [DOI: 10.32793/jida.v5i2.786](#)      🏷️ [Accred : Unknown](#)

The Relationship Between Motherâ€™s Education and The Level of Knowledge About Child Malocclusion

Indonesian Dental Association      [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 69-77](#)

📅 2023      🗒️ [DOI: 10.32793/jida.v5i2.789](#)      🏷️ [Accred : Unknown](#)

Antibiofilm of Arumanis Mango Leaves (Mangifera indica L.) Ethanol Extract Against Staphylococcus aureus in vitro

Indonesian Dental Association      [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 99-105](#)

📅 2023      🗒️ [DOI: 10.32793/jida.v5i2.846](#)      🏷️ [Accred : Unknown](#)

Simultaneous Esthetic Crown Lengthening and Frenotomy Procedure for Smile Rejuvenation

Indonesian Dental Association      [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 107-113](#)

📅 2023      🗒️ [DOI: 10.32793/jida.v5i2.857](#)      🏷️ [Accred : Unknown](#)

Dental Materials and Bisphenol-A Exposures

Indonesian Dental Association      [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 115-123](#)

📅 2023      🗒️ [DOI: 10.32793/jida.v5i2.859](#)      🏷️ [Accred : Unknown](#)

Effect of Different Types of Denture Cleansers on Hardliner Surface Roughness

Indonesian Dental Association      [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 85-89](#)

Distribution Of Clinical Cases of Referral Patients for CBCT-3D Radiographic Examinations at RSKGMP Universitas Airlangga

Indonesian Dental Association [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 63-68](#)

2023 DOI: 10.32793/jida.v5i2.873 Accred : Unknown

Impacted Lower Third Molar Profile at Dental Hospital of Padjadjaran University

Indonesian Dental Association [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 91-98](#)

2023 DOI: 10.32793/jida.v5i2.902 Accred : Unknown

Antibiofilm Effect of Rambutan Leaf Extract (Nephelium lappaceum L.) on Selected Periodontal Pathogens

Indonesian Dental Association [Journal of Indonesian Dental Association Vol 5 No 2 \(2023\): January 57-61](#)

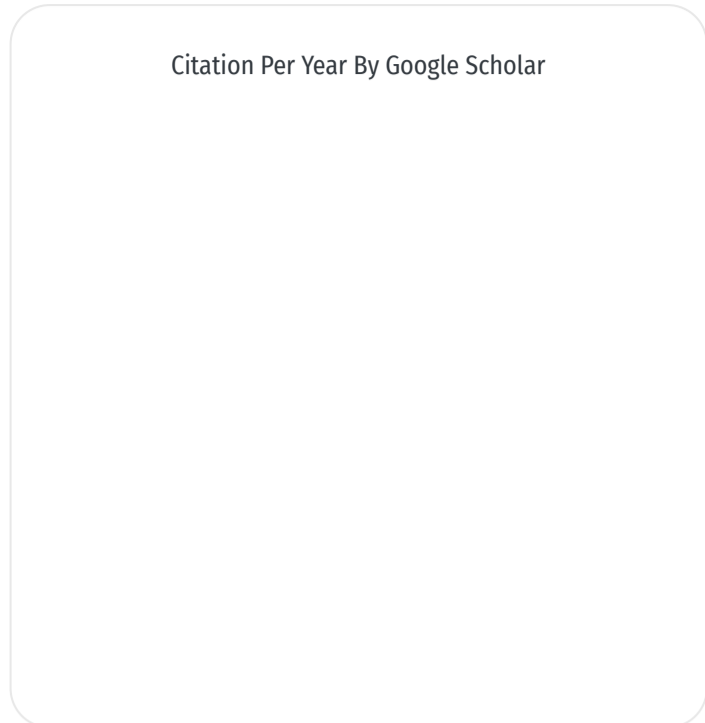
2023 DOI: 10.32793/jida.v5i2.924 Accred : Unknown

Rehabilitation of Maxillary defect using Removable Maxillary Cast Partial Denture Hollow Prosthesis for managing Mucomycosis patient: A Clinical Case Report

Indonesian Dental Association [Journal of Indonesian Dental Association Vol 6 No 1 \(2023\): June 39-41](#)

2023 DOI: 10.32793/jida.v6i1.1014 Accred : Unknown

View more ...



Journal By Google Scholar

	All	Since 2019
Citation	89	88
h-index	6	6
i10-index	1	1

J I D A



JOURNAL OF INDONESIAN  
DENTAL ASSOCIATION





[Home](#) / [Editorial Team](#)

## EDITOR IN-CHIEF

**Armelia Sari Widyarman**, [[57203892772](#)] Department of Microbiology, Division of Oral Biology, Faculty of Dentistry, Trisakti University, Indonesia

## BOARD OF EDITORS

**Diyah Fatmasari**, [[57213854325](#)] Department of Dental Health, Polythecnic of Semarang, Ministry of Health, Indonesia

**Rahmi Amtha**, [[26031894400](#)] Department of Oral Medicine, Faculty of Dentistry, Trisakti University, Indonesia

**Munifah Abdat**, [[57219184375](#)] Department of Preventive and Public Health Dentistry, Faculty of Dentistry, Universitas Syiah Kuala, Indonesia

**Rosa Amalia**, [[48461008800](#)] Department of Preventive and Community Dentistry, Faculty of Dentistry, Gadjah Mada University, Indonesia

**Muhamad Orliando Roeslan**, [[57202022094](#)] Department of Histology, Faculty of Dentistry, Trisakti University, Indonesia

**Muhammad Ihsan Rizal**, [[57216991702](#)] Department of Biochemistry and Molecular Biology, Faculty of Dentistry, Trisakti University, Indonesia

## SERTIFIKAT AKREDITASI



[Editorial Team](#)

[Board of Reviewers](#)

[Focus and Scope](#)

[Author Fees](#)

[Publication Ethics](#)

[Peer Review Process](#)

[Author Guidelines](#)

[Plagiarism Screening Policy](#)

[Open Access Policy](#)

[Conflict Of Interest Policy](#)

[Copyright Notice](#)

[Unique Visits](#)



[Home](#) / [Archives](#) / Vol 6 No 1 (2023): June

DOI: <https://doi.org/10.32793/jida.v6i1>

Published: 2023-06-25

## Research Article

### The Effect of 1% Povidone Iodine Mouthwash on The Surface Roughness of Zirconia Reinforced Glass Ionomer Cement

Hifdiyati Farida, Gustantyo Wahyu Wibowo, Gloria Fortuna, Isniya Nosartika

1-7

[Bahasa](#)

### Characteristics of Orthodontic Appliance Users based on Demographics, Self-Perception, Psychosocial, and Oral Disorders (Study Among Undergraduate Students in West Jakarta)

Vanessa Yovanka, Joko Kusnoto, Lia Hapsari Andayani

9-14

[English](#)

### MID (Minimal Intervention Dentistry) by Pediatric Dentist Specialist in City of Surabaya during the COVID-19 Pandemic

Ardianti Maartrina Dewi, Dimas Prasetyanto Wicaksono, Betadion Rizki Sinaredi, Riska Bangkit Nastiti, Taris Fathin Luthfiani, Tasyha Firnandia Ardiana

15-22

## SERTIFIKAT AKREDITASI



[Editorial Team](#)

[Board of Reviewers](#)

[Focus and Scope](#)

[Author Fees](#)

[Publication Ethics](#)

[Peer Review Process](#)

[Author Guidelines](#)

[Plagiarism Screening Policy](#)

[Open Access Policy](#)

[Conflict Of Interest Policy](#)

[Copyright Notice](#)

[Unique Visits](#)



Indonesian Dental Association

Journal of Indonesian Dental Association

<http://jurnal.pdgi.or.id/index.php/jida>  
ISSN: 2621-6183 (Print); ISSN: 2621-6175 (Online)



Research Article

# Characteristics of Orthodontic Appliance Users based on Demographics, Self-Perception, Psychosocial, and Oral Disorders (Study Among Undergraduate Students in West Jakarta)

Vanessa Yovanka<sup>1</sup>, Joko Kusnoto<sup>2§</sup>, Lia Hapsari Andayani<sup>3</sup>

<sup>1</sup> Undergraduate Student, Faculty of Dentistry, Universitas Trisakti, Indonesia

<sup>2</sup> Department of Orthodontics, Faculty of Dentistry, Universitas Trisakti, Indonesia

<sup>3</sup> Department of Dental Public Health and Preventive Dentistry, Faculty of Dentistry, Universitas Trisakti, Indonesia

Received date: January 28, 2023. Accepted date: May 19, 2023. Published date: June 24, 2023.

## KEYWORDS

clear aligners;  
fixed orthodontic appliances;  
malocclusion;  
orthodontic treatment

## ABSTRACT

**Introduction:** Awareness of malocclusion and the importance of orthodontic treatment continue to increase, in order to improve dentofacial appearance, psychosocial factors, and quality of life. Orthodontic treatment can be done using conventional fixed appliances, or removable appliances called clear aligners, that has an upsurge in demand recently. Previous studies have evaluated the advantages and disadvantages of orthodontic treatment types, yet there are still lack of findings regarding the characteristic of user. **Objective:** This study aims to describe the characteristics of orthodontic appliances users based on demographics, self-perception, psychosocial, and oral disorders, among undergraduate student in West Jakarta. **Methods:** This cross-sectional study was conducted in October until December 2022. The study population covered 7 universities located in West Jakarta. Sample consist of 201 undergraduate students taken by purposive sampling. Self-administered questionnaire, that had been validated was used to obtain sociodemographic data and factors that can affect the preference of orthodontic appliances. **Results:** The most common orthodontic appliances used is fixed orthodontic appliances (79.6%) that was installed by orthodontists (58.8%). Most students using orthodontic appliances were female (76.2%), aged 17-25 years (99.4%), and currently undergoing study in non-medical faculty (71.9%). Students were highly aware of their dental arrangement (90.5%). They thought that their facial and dental aesthetics (97.5%) and social interaction (66.2%) will improve after orthodontics treatment, though they were not sure about getting better career opportunities (51.7%). **Conclusion:** Fixed orthodontic appliances still become the main preference among undergraduate university students in West Jakarta. Awareness and dissatisfaction of their dental arrangements were substantial as well as the desire that facial and dental appearance will improved after treatment. Orthodontic treatment was considered as way to enhance social interaction social attractiveness.

<sup>§</sup> Corresponding Author

E-mail address: [joko.k@trisakti.ac.id](mailto:joko.k@trisakti.ac.id) (Kusnoto J)

DOI: [10.32793/jida.v6i1.974](https://doi.org/10.32793/jida.v6i1.974)

**Copyright:** ©2023 Yovanka V, Kusnoto J, Andayani LH. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium provided the original author and sources are credited.

## INTRODUCTION

In Indonesia, the national prevalence of dental and oral health problems has increased from 25.9% in 2013 to 57.6% in 2018. One of the most common problems was malocclusion.<sup>1</sup> Malocclusion is a form of malalignment of teeth or jaw relationships that affects individual oral health and aesthetic appearance. Malocclusion causes periodontal disease, mastication disorders, speech disorders, temporomandibular disorders, as well as increasing the prevalence of dental caries.<sup>2,3</sup> Malocclusion can be treated using orthodontics appliances, that should be carried out by an orthodontist in order to provide the correct treatment procedure and not causing harm.<sup>4,5</sup>

Nowadays, orthodontic treatment can be done using conventional fixed appliances or removable appliances called clear aligners, that has an upsurge in demand among society recently.<sup>6</sup> Fixed orthodontic appliances consist of bands and brackets cemented to the teeth with archwire, elastics and springs as active components to move the teeth and can only be removed and installed by a dentist.<sup>7</sup> Clear aligners are made of transparent thermoplastic, that can be removed and installed by the patient. It provides an aesthetic treatment with more comfortable experience, proven by increased in the number and complexity of cases treated.<sup>8</sup>

Awareness of malocclusion and the importance of orthodontic treatment continue to increase, in order to improve dentofacial appearance, psychosocial factors and quality of life.<sup>4</sup> Adolescents notice the value of physical attractiveness in the social environment, leading them to a strong desire to use orthodontic appliances.<sup>9</sup> However, high awareness is not always associated with action, Marques et al. found that though 78% adolescents desired orthodontic treatment, only 69% of the parents had the ability to provide the treatment due to economic factor.<sup>10</sup>

Several published studies showed that many factors affect the decision to obtain orthodontic treatments. A study found that 80% of orthodontic patients were only concerned about their dental aesthetics appearance other than any functional aspects.<sup>11</sup> Socioeconomic factors had the most significant impact due to the high costs of examinations, procedures and treatment itself.<sup>12</sup> Socioeconomic factors as well as occupation status, income level, or educational level, were known as part of social determinants of health, that may improve the standard of living and the equality of health.<sup>13</sup> Financial situation has become one of the limitation in orthodontic treatment, notably that orthodontic treatment mostly not covered by health insurance.<sup>14</sup>

Although previous studies have evaluated the

advantages and disadvantages of orthodontic treatment types, there are still lack of findings regarding the characteristic of user. The combination of esthetics, amenities, and efficacy may come into consideration towards treatment choices. This study aimed to describe the characteristics of orthodontic appliances users based on demographics, self-perception, psychosocial, and oral disorders, among undergraduate student in West Jakarta.

## MATERIALS AND METHODS

This cross-sectional study was conducted in October until December 2022. The study population covered 7 universities located in West Jakarta. The study sample consist of 201 undergraduate students undergoing either fixed orthodontic appliances or clear aligners, taken by purposive sampling. Participants agreed to the informed consent were requested to fill the validated questionnaire by completing the Google Forms (Google LLC, Mountain View, CA) sent through social media. Sociodemographic data consist of age, gender, study major, parents' educational level and socioeconomic status. Factors affecting the preference of orthodontic appliances consist of participants self-perception, psychosocial, and oral disorders aspects. This study was approved by the Ethics Commission of the Faculty of Dentistry Trisakti University No. 589/S1/KEPK/FKG/8/2022.

### Statistical Analysis

The validity and reliability of the questionnaire had been tested on 43 respondents prior to data retrieval. Validity was assessed by using Pearson correlation coefficient ( $p < 0.05$ ). Reliability was confirmed with Cronbach's alpha coefficient.<sup>15</sup> Data were analyzed using Statistical Program for Social Science (SPSS) 2017 version 25 (IBM, Armonk, NY) and Microsoft Office Excel 2019 version 16.62 (Redmond, WA) software. The distribution among categorical variables was represented in frequency tables.

## RESULTS

Distribution of participant's demographic characteristic was presented in Table 1. Majority of the students were female (73.1%), aged 17-25 years (99.5%), and undergoing study in non-medical faculty (73.6%). Based on parental educational level, 68.7% of the fathers and 65.7% of the mothers had completed at least diploma degree or higher. Based on parental occupation, 91.5% of the fathers and 48.8% of the mothers were working in non-medical field, with monthly income higher than IDR 3,500,000 (87.6% and 42.8% respectively).

Table 2 shows that based on participant's self-

**Table 1.** Characteristic of Undergraduate Students in West Jakarta

Variable	Frequency	Percentage (%)
Gender		
Male	54	26.9
Female	147	73.1
Age		
12-16	1	0.5
17-25	200	99.5
University		
Bina Nusantara	31	15.4
Trisakti	49	24.4
Esa Unggul	38	18.9
Tarumanegara	49	24.4
Raffles	9	4.5
Ukrida	20	10.0
Mercu Buana	5	2.5
Faculty		
Medical	53	26.4
Non-Medical	148	73.6
Father's last education		
Low	5	2.5
Intermediate	58	28.9
High	138	68.7
Mother's last education		
Low	3	1.5
Intermediate	66	32.8
High	132	65.7
Father's occupation		
Medical	17	8.5
Non-Medical	184	91.5
Mother's occupation		
Medical	29	14.4
Non-Medical	98	48.8
Not working	74	36.8
Father's monthly income		
< IDR 3,500,000	25	12.4
> IDR 3,500,000	176	87.6
Mother's monthly income		
< IDR 3,500,000	43	21.4
> IDR 3,500,000	86	42.8
No Income	72	35.8
Installation of orthodontic appliances		
General Dentist	68	33.8
Orthodontist	133	66.2
The first person to notice poor dental arrangement		
Father	10	5.0
Mother	61	30.3
Self	79	39.3
Friend	1	0.5
Dentist	50	24.9

Variable	Frequency	Percentage (%)
The first person who suggest doing orthodontic treatment		
Self	40	19.9
Dentist	98	48.8
Friend	6	3.0
Parents	52	25.9
Other wearing appliance	5	2.5

**Table 2.** Self-perception aspect of undergraduate students in West Jakarta

Questions	Yes (%)	No (%)
Do you realize having a poor dental arrangement?	182 (90.5)	19 (9.5)
Are you satisfied with your dental arrangement?	44 (21.9)	157 (78.1)
Do you think your dental and facial will improve after orthodontic treatment?	196 (97.5)	5 (2.5)
Do you think your self-confidence will improve after orthodontic treatment?	167 (83.1)	34 (16.9)

**Table 3.** Psychosocial aspects of undergraduate students in West Jakarta

Questions	Yes (%)	No (%)
Are you sure you will get good career opportunities after doing the orthodontic treatment?	97 (48.3)	104 (51.7)
Do you expect good social interaction after doing the orthodontic treatment?	133 (66.2)	68 (33.8)
Do you think poor dental alignment is related to decreased social attractiveness?	158 (78.6)	43 (21.4)

perception, most of students realized that they are having poor dental arrangement (90.5%), as well as 78.1% felt unsatisfied with their dental arrangement. Majority of students look forward that their dental and facial appearance will improve after undergoing orthodontic treatment (97.5%), as well as their level of self-confidence (83.1%).

Based on psychosocial aspects in Table 3, over half of the students (51.7%) were not sure that they would get



good career opportunities after undergoing orthodontic treatment. However, as much as 66.2% wish for an enhancement in good social interaction, while 78.6% thought that poor dental alignment is related to decreased social attractiveness.

Based on oral function disorders in Table 4, over half of the students had no problem while speaking (73.1%) and sense no pain at the temporomandibular joint (56.7%). Most of students consider that their dental health will improve after the treatment (99%), as well as their biting and chewing (81.6%).

Table 5 shows that the most common orthodontic appliances used is fixed orthodontic appliances (79.6%). Most of students using fixed orthodontic appliances were female (76.2%), aged 17-25 years (99.4%), and undergoing study in non-medical faculty (71.9%). Most of students using fixed orthodontic appliances had father with at least diploma or higher degree (69.4%), worked in non-medical field (92.5%), and having monthly income higher than IDR 3,500,000 (85.6%). Most of students using fixed orthodontic appliances had mother with at least diploma or higher degree (66.2%), worked in non-medical field (50%), and having monthly income higher than IDR 3,500,000 (40%). Most fixed orthodontic appliances installed by orthodontists (58.8%). Most of students using clear aligners were female (61.0%), aged 17-25 years old (100%), and undergoing study in non-medical faculty (80.5%). Most of students using clear aligners had father with at least diploma or higher degree (65.9%), worked in non-medical field (87.8%) and having monthly income higher than IDR 3,500,000 (95.1%). Students using clear aligners had mother with at least diploma or higher degree (63.4%), worked in non-medical field (43.9%) and having monthly income higher than IDR 3,500,000 (53.7%). Most clear aligners installed by orthodontists (95.1%).

**Table 4.** Oral disorders aspects of undergraduate students in West Jakarta

Questions	Yes (%)	No (%)
Do you have any problem while speaking?	54 (26.9)	147 (73.1)
Do you have any pain/clicking sound around your ears (at the temporomandibular joint)?	87 (43.3)	114 (56.7)
Do you think your dental health will improve after orthodontic treatment?	199 (99.0)	2 (1.0)
Do you think your biting and chewing will improve after orthodontic treatment?	164 (81.6)	37 (18.4)

**Table 5.** Characteristic of undergraduate students in West Jakarta based on the type of orthodontic appliance used

Variable	Fixed orthodontic appliance	Clear aligners n (%)
	n (%)	
<b>Gender</b>		
Male	38 (23.8)	16 (39.0)
Female	122 (76.2)	25 (61.0)
<b>Age</b>		
12-16	1 (0.6)	0 (0.0)
17-25	159 (99.4)	41 (100.0)
<b>Faculty</b>		
Medical	45 (28.1)	8 (19.5)
Non-Medical	115 (71.9)	33 (80.5)
<b>Father's last education</b>		
Low	5 (3.1)	0 (0.0)
Intermediate	44 (27.5)	14 (34.1)
High	111 (69.4)	27 (65.9)
<b>Mother's last education</b>		
Low	3 (1.9)	0 (0.0)
Intermediate	51 (31.9)	15 (36.6)
High	106 (66.2)	26 (63.4)
<b>Father's occupation</b>		
Medical	12 (7.5)	5 (12.2)
Non-Medical	148 (92.5)	36 (87.8)
<b>Mother's occupation</b>		
Medical	20 (12.5)	9 (22.0)
Non-Medical	80 (50.0)	18 (43.9)
Not working	60 (37.5)	14 (34.1)
<b>Father's monthly income</b>		
< IDR 3,500,000	23 (14.4)	2 (4.9)
> IDR 3,500,000	137 (85.6)	39 (95.1)
<b>Mother's monthly income</b>		
< IDR 3,500,000	38 (23.7)	5 (12.2)
> IDR 3,500,000	64 (40.0)	22 (53.7)
No Income	58 (36.3)	14 (34.1)
<b>Installation of orthodontic appliances</b>		
General Dentist	66 (41.2)	2 (4.9)
Orthodontist	94 (58.8)	39 (95.1)

## DISCUSSION

Based on self-perception, most of the students felt that they had poor dental arrangement, unsatisfied with their dental arrangement, and expecting their appearance will be improved along with their level of self-confidence after undergoing orthodontic treatment. Most orthodontic patients are mainly motivated to improve dental aesthetics since facial appearance may represent an individual image as well as increasing self-confidence.<sup>11,16</sup>

Social environment is essential for adolescents regarding to their self-image and solid identity.<sup>17</sup> Adolescents pay great attention to physical attractiveness in order to be accepted and appreciated in the social environment, therefore dental aesthetics considered able to strengthen their psychosocial status.<sup>8,18</sup> A study based on psychosocial factors showed poor dental arrangement is associated with a decrease in social attractiveness. Better social interaction is very much expected after doing the orthodontic treatment.

Although they wish for an enhancement in good social interaction, majority of students were not sure about getting better career opportunities after undergoing orthodontic treatment. Individual with an aesthetics smile is considered more confident, especially in social and work environment. Apart from the aesthetic factors that can be beneficial in terms of career opportunities, many other factors may be involved, such as individual competence and motivation to work.<sup>19,20</sup> Opportunity to advance career are known to be related to with organization planning and career development, including facilitated training and support from human resources management.<sup>19</sup>

Majority of students felt that they had no issue regarding ability to speech, painful sense nor clicking sound at the temporomandibular joint, yet they expected that their chewing function and dental health will improve after treatment. Knowledge and awareness regarding dental and oral health may encourage interest in orthodontic treatment. Although majority of students had non-medical educational background, they were aware of the value for improving themselves aesthetically, functionally and socially.<sup>21</sup>

Number of fixed orthodontic appliances user were higher than clear aligners among undergraduate students in West Jakarta. This result is reasonable considering that fixed orthodontic appliances were known and used long before clear aligners.<sup>6,22</sup> Clear aligners are also commonly used for malocclusion cases with a low level of complexity, thereby limiting its use.<sup>6</sup> Although clear aligners has become a profitable alternative to conventional fixed orthodontic appliances, it is important to acknowledge tooth movements that may pose treatment challenges and recognize those cases which may be more successfully treated using fixed orthodontic appliances.<sup>23</sup> Most of clear aligners treatment was performed by orthodontist, in consequence of the competence and technology needed, such as three-dimensional treatment planning, CAD-CAM computer technology, stereolithography, and tooth movement simulation software.<sup>6</sup>

Demographic data of undergraduate student show the same characteristics distribution among fixed appliances and clear aligners user. Dissatisfaction of dental profile was not affected by gender or age in particular.<sup>24</sup> Many previous studies found that higher level of parental education and social economic class were related to increased number of orthodontic treatments, but there was no explanation about the treatment type.<sup>14</sup>

## CONCLUSION

Fixed orthodontic appliances still become the main preference among undergraduate students in West Jakarta. Awareness and dissatisfaction of their dental arrangements were substantial as well as the desire that facial and dental appearance will improved after treatment. Orthodontic treatment was considered as way to enhance social interaction social attractiveness. Understanding the elements involved in the demand for orthodontic treatment in a certain population will bring through a better assessment of treatment needs and priorities.

## CONFLICT OF INTEREST

The authors declare that there are no conflict of interest regarding the publication of this paper.

## REFERENCES

1. Badan Penelitian dan Pengembangan Kesehatan. Riset Kesehatan Dasar (RISKESDAS) 2018. Jakarta: Kementerian Kesehatan Republik Indonesia; 2018.
2. Loblobly M, Anindita PS, Leman MA. Gambaran maloklusi berdasarkan indeks Handicapping Malocclusion Assessment Record (HMAR) Pada Siswa SMAN 9 Manado. *J e-GiGi* . 2015;3(2).
3. Riyanti E, Ratna Indriyanti, Risti Saptarini Primarti. Prevalensi maloklusi dan gigi berjejal berdasarkan jenis kelamin dan umur pada anak-anak sekolah dasar di Bandung. *J Pengabdian Kpd Masy*. 2018;2(12):992-5.
4. Iranzo-Cortés JE, Montiel-Company JM, Bellot-Arcis C, Almerich-Torres T, Acevedo-Atala C, Ortola-Siscar JC, et al. Factors related to the psychological impact of malocclusion in adolescents. *Sci Rep*. 2020;10(1):1-8.
5. Khairusy CH, Adhani R, Wibowo D. Hubungan tingkat pengetahuan responden dengan pemilihan operator selain dokter gigi ditinjau dari bahaya pemasangan alat ortodontik. *Dentino Jur Ked Gigi*. 2017;2(2):166-9.
6. Weir T. Clear aligners in orthodontic treatment. *Aust Dent J*. 2017;62:58–62.

7. Laura Mitchell. An introduction to orthodontics. 4th ed. United Kingdom: Oxford university press; 2019. p.10–12.
8. Tamer I, Oztas E, Marsan G. Orthodontic treatment with clear aligners and the scientific reality behind their marketing: A literature review. *Turk J Orthod.* 2019;32(4):241-6.
9. Muthu Laakshmi G. Reasons for seeking orthodontic treatment among south Indian population - a questionnaire study. *J Pharm Sci & Res.* 2016;8(7).
10. Marques LS, Pordeus IA, Ramos-Jorge ML, Filognio CA, Filognio CB, Pereira LJ, Paiva SM. Factors associated with the desire for orthodontic treatment among Brazilian adolescents and their parents. *BMC Oral Health.* 2009;9(1):1-7.
11. Maria C, Himawati M. Hubungan antara persepsi remaja tentang penggunaan alat ortodontik cekat dan minat terhadap perawatan maloklusi (Penelitian pada pelajar SMAK “X” Bandung). *IDJ.* 2018;7(1):1-8.
12. Maru E, Suyatmi D, Yuniarly E. hubungan status ekonomi dengan motivasi penggunaan ortodonti cekat pada pasien remaja di klinik gigi swasta Yogyakarta [Dissertation], Yogyakarta; Poltekkes Kemenkes Yogyakarta; 2021.
13. Fajriani M. Status Sosio-ekonomi dan kebutuhan perawatan ortodonti pada anak usia remaja. [Skripsi]. Makassar: Fakultas Kedokteran Gigi Universitas Hasanudin Makassar; 2020.
14. Ghonmode S, Shrivastava S, Kadaskar AR, Bapat SS. Socioeconomic burden of orthodontic treatment: a systematic review. *Med Pharm.* 2022;1:1-8.
15. Singh AS. Common procedures for development, validity and reliability of a questionnaire. *Int. J. Economics Commerce Manag.* 2017;5(5):790-801
16. Livas C, Delli K. Subjective and objective perception of orthodontic treatment need - A systematic review. *Eur J Orthod.* 2013;35(3):347–53.
17. Kim Y. Study on the perception of orthodontic treatment according to age: A questionnaire survey. *Korean J Orthod.* 2017;47(4):215–21.
18. Muttaqin Z, Hadi L, Naomi N. Pengaruh pemakaian peranti ortodonti cekat terhadap status psikososial. *J Prima Medika Sains.* 2021;3(2):78–81.
19. Ariwibowo J, Pintor Siolemba Papiro S. Pengaruh peluang karir dan kompetensi terhadap kinerja pegawai melalui motivasi kerja dan kepuasan kerja sebagai variabel mediasi pada kantor wilayah kementerian hukum dan hak asasi manusia Sulawesi Barat. *J ECOBISMA.* 2022;9(2):126-134.
20. Hadi L, Muttaqin Z, Leomandra T. Persepsi estetika senyum pada mahasiswa yang belum dan sedang dalam perawatan ortodonti. *J Ked Gi Unpad.* 2022 Apr 28;34(1):1.
21. Nurhaeni. Gambaran Kebutuhan perawatan ortodonti pada mahasiswa jurusan keperawatan gigi Poltekkes Makassar. *J Media Kesehatan Gigi.* 2017; 16(1):62-68.
22. Mahesa Mahendra M, Sri Ardani IGAK. Pengaruh umur, pendidikan dan pendapatan terhadap niat beli konsumen pada produk kosmetik the Body Shop di kota Denpasar. *E-Jurnal Manajemen Universitas Udayana.* 2015.
23. Murphy SJ, Lee S, Scharm JC, Kim S, Amin AA, Wu TH. Comparison of maxillary anterior tooth movement between Invisalign and fixed appliances. *Am J Orthod Dentofacial Orthop.* 2023 Feb 15: S0889-5406(23)00032-X. doi: 10.1016/j.ajodo.2022.10.024. Epub ahead of print. PMID: 36801092.
24. Jayachandar D, Dinesh SS. Factors affecting patient's desire for seeking orthodontic treatment. *Int J Orthod Rehabil.* 2016;7(3):89.

# Characteristics of Orthodontic Appliance Users based on Demographics, Self- Perception, Psychosocial, and Oral Disorders (Study Among Undergraduate Students in West Jakarta)

*by* Joko Kusnoto

---

**Submission date:** 24-Aug-2023 09:00AM (UTC+0700)

**Submission ID:** 2150258713

**File name:** Joko\_Kusnoto\_-\_10\_SINTA\_3\_-\_TAMBAHAN\_22\_AGUSTUS\_2023\_removed.pdf (350.75K)

**Word count:** 3600

**Character count:** 19817



Indonesian Dental Association

Journal of Indonesian Dental Association

<http://jurnal.pdgi.or.id/index.php/jida>  
ISSN: 2621-6183 (Print); ISSN: 2621-6175 (Online)



Research Article

# Characteristics of Orthodontic Appliance Users based on Demographics, Self-Perception, Psychosocial, and Oral Disorders (Study Among Undergraduate Students in West Jakarta)

Vanessa Yovanka<sup>1</sup>, Joko Kusnoto<sup>2§</sup>, Lia Hapsari Andayani<sup>3</sup>

<sup>1</sup> Undergraduate Student, Faculty of Dentistry, Universitas Trisakti, Indonesia

<sup>2</sup> Department of Orthodontics, Faculty of Dentistry, Universitas Trisakti, Indonesia

<sup>3</sup> Department of Dental Public Health and Preventive Dentistry, Faculty of Dentistry, Universitas Trisakti, Indonesia

Received date: January 28, 2023. Accepted date: May 19, 2023. Published date: June 24, 2023.

## KEYWORDS

clear aligners;  
fixed orthodontic appliances;  
malocclusion;  
orthodontic treatment

## ABSTRACT

**Introduction:** Awareness of malocclusion and the importance of orthodontic treatment continue to increase, in order to improve dentofacial appearance, psychosocial factors, and quality of life. Orthodontic treatment can be done using conventional fixed appliances, or removable appliances called clear aligners, that has an upsurge in demand recently. Previous studies have evaluated the advantages and disadvantages of orthodontic treatment types, yet there are still lack of findings regarding the characteristic of user. **Objective:** This study aims to describe the characteristics of orthodontic appliances users based on demographics, self-perception, psychosocial, and oral disorders, among undergraduate student in West Jakarta. **Methods:** This cross-sectional study was conducted in October until December 2022. The study population covered 7 universities located in West Jakarta. Sample consist of 201 undergraduate students taken by purposive sampling. Self-administered questionnaire, that had been validated was used to obtain sociodemographic data and factors that can affect the preference of orthodontic appliances. **Results:** The most common orthodontic appliances used is fixed orthodontic appliances (79.6%) that was installed by orthodontists (58.8%). Most students using orthodontic appliances were female (76.2%), aged 17-25 years (99.4%), and currently undergoing study in non-medical faculty (71.9%). Students were highly aware of their dental arrangement (90.5%). They thought that their facial and dental aesthetics (97.5%) and social interaction (66.2%) will improve after orthodontics treatment, though they were not sure about getting better career opportunities (51.7%). **Conclusion:** Fixed orthodontic appliances still become the main preference among undergraduate university students in West Jakarta. Awareness and dissatisfaction of their dental arrangements were substantial as well as the desire that facial and dental appearance will improved after treatment. Orthodontic treatment was considered as way to enhance social interaction social attractiveness.

§ Corresponding Author

E-mail address: [joko.k@trisakti.ac.id](mailto:joko.k@trisakti.ac.id) (Kusnoto J)

DOI: [10.32793/jida.v6i1.974](https://doi.org/10.32793/jida.v6i1.974)

**Copyright:** ©2023 Yovanka V, Kusnoto J, Andayani LH. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium provided the original author and sources are credited.

## INTRODUCTION

In Indonesia, the national prevalence of dental and oral health problems has increased from 25.9% in 2013 to 57.6% in 2018. One of the most common problems was malocclusion.<sup>1</sup> Malocclusion is a form of malalignment of teeth or jaw relationships that affects individual oral health and aesthetic appearance. Malocclusion causes periodontal disease, mastication disorders, speech disorders, temporomandibular disorders, as well as increasing the prevalence of dental caries.<sup>2,3</sup> Malocclusion can be treated using orthodontics appliances, that should be carried out by an orthodontist in order to provide the correct treatment procedure and not causing harm.<sup>4,5</sup>

Nowadays, orthodontic treatment can be done using conventional fixed appliances or removable appliances called clear aligners, that has an upsurge in demand among society recently.<sup>6</sup> Fixed orthodontic appliances consist of bands and brackets cemented to the teeth with archwire, elastics and springs as active components to move the teeth and can only be removed and installed by a dentist.<sup>7</sup> Clear aligners are made of transparent thermoplastic, that can be removed and installed by the patient. It provides an aesthetic treatment with more comfortable experience, proven by increased in the number and complexity of cases treated.<sup>8</sup>

Awareness of malocclusion and the importance of orthodontic treatment continue to increase, in order to improve dentofacial appearance, psychosocial factors and quality of life.<sup>4</sup> Adolescents notice the value of physical attractiveness in the social environment, leading them to a strong desire to use orthodontic appliances.<sup>9</sup> However, high awareness is not always associated with action, Marques et al. found that though 78% adolescents desired orthodontic treatment, only 69% of the parents had the ability to provide the treatment due to economic factor.<sup>10</sup>

Several published studies showed that many factors affect the decision to obtain orthodontic treatments. A study found that 80% of orthodontic patients were only concerned about their dental aesthetics appearance other than any functional aspects.<sup>11</sup> Socioeconomic factors had the most significant impact due to the high costs of examinations, procedures and treatment itself.<sup>12</sup> Socioeconomic factors as well as occupation status, income level, or educational level, were known as part of social determinants of health, that may improve the standard of living and the equality of health.<sup>13</sup> Financial situation has become one of the limitation in orthodontic treatment, notably that orthodontic treatment mostly not covered by health insurance.<sup>14</sup>

Although previous studies have evaluated the

advantages and disadvantages of orthodontic treatment types, there are still lack of findings regarding the characteristic of user. The combination of esthetics, amenities, and efficacy may come into consideration towards treatment choices. This study aimed to describe the characteristics of orthodontic appliances users based on demographics, self-perception, psychosocial, and oral disorders, among undergraduate student in West Jakarta.

## MATERIALS AND METHODS

This cross-sectional study was conducted in October until December 2022. The study population covered 7 universities located in West Jakarta. The study sample consist of 201 undergraduate students undergoing either fixed orthodontic appliances or clear aligners, taken by purposive sampling. Participants agreed to the informed consent were requested to fill the validated questionnaire by completing the Google Forms (Google LLC, Mountain View, CA) sent through social media. Sociodemographic data consist of age, gender, study major, parents' educational level and socioeconomic status. Factors affecting the preference of orthodontic appliances consist of participants self-perception, psychosocial, and oral disorders aspects. This study was approved by the Ethics Commission of the Faculty of Dentistry Trisakti University No. 589/S1/KEPK/FGK/8/2022.

### Statistical Analysis

The validity and reliability of the questionnaire had been tested on 43 respondents prior to data retrieval. Validity was assessed by using Pearson correlation coefficient ( $p < 0.05$ ). Reliability was confirmed with Cronbach's alpha coefficient.<sup>15</sup> Data were analyzed using Statistical Program for Social Science (SPSS) 2017 version 25 (IBM, Armonk, NY) and Microsoft Office Excel 2019 version 16.62 (Redmond, WA) software. The distribution among categorical variables was represented in frequency tables.

## RESULTS

Distribution of participant's demographic characteristic was presented in Table 1. Majority of the students were female (73.1%), aged 17-25 years (99.5%), and undergoing study in non-medical faculty (73.6%). Based on parental educational level, 68.7% of the fathers and 65.7% of the mothers had completed at least diploma degree or higher. Based on parental occupation, 91.5% of the fathers and 48.8% of the mothers were working in non-medical field, with monthly income higher than IDR 3,500,000 (87.6% and 42.8% respectively).

Table 2 shows that based on participant's self-

**Table 1.** Characteristic of Undergraduate Students in West Jakarta

Variable	Frequency	Percentage (%)
Gender		
Male	54	26.9
Female	147	73.1
Age		
12-16	1	0.5
17-25	200	99.5
University		
Bina Nusantara	31	15.4
Trisakti	49	24.4
Esa Unggul	38	18.9
Tarumanegara	49	24.4
Raffles	9	4.5
Ukrida	20	10.0
Mercu Buana	5	2.5
Faculty		
Medical	53	26.4
Non-Medical	148	73.6
Father's last education		
Low	5	2.5
Intermediate	58	28.9
High	138	68.7
Mother's last education		
Low	3	1.5
Intermediate	66	32.8
High	132	65.7
Father's occupation		
Medical	17	8.5
Non-Medical	184	91.5
Mother's occupation		
Medical	29	14.4
Non-Medical	98	48.8
Not working	74	36.8
Father's monthly income		
< IDR 3,500,000	25	12.4
> IDR 3,500,000	176	87.6
Mother's monthly income		
< IDR 3,500,000	43	21.4
> IDR 3,500,000	86	42.8
No Income	72	35.8
Installation of orthodontic appliances		
General Dentist	68	33.8
Orthodontist	133	66.2
The first person to notice poor dental arrangement		
Father	10	5.0
Mother	61	30.3
Self	79	39.3
Friend	1	0.5
Dentist	50	24.9

Variable	Frequency	Percentage (%)
The first person who suggest doing orthodontic treatment		
Self	40	19.9
Dentist	98	48.8
Friend	6	3.0
Parents	52	25.9
Other wearing appliance	5	2.5

**Table 2.** Self-perception aspect of undergraduate students in West Jakarta

Questions	Yes (%)	No (%)
Do you realize having a poor dental arrangement?	182 (90.5)	19 (9.5)
Are you satisfied with your dental arrangement?	44 (21.9)	157 (78.1)
Do you think your dental and facial will improve after orthodontic treatment?	196 (97.5)	5 (2.5)
Do you think your self-confidence will improve after orthodontic treatment?	167 (83.1)	34 (16.9)

**Table 3.** Psychosocial aspects of undergraduate students in West Jakarta

Questions	Yes (%)	No (%)
Are you sure you will get good career opportunities after doing the orthodontic treatment?	97 (48.3)	104 (51.7)
Do you expect good social interaction after doing the orthodontic treatment?	133 (66.2)	68 (33.8)
Do you think poor dental alignment is related to decreased social attractiveness?	158 (78.6)	43 (21.4)

perception, most of students realized that they are having poor dental arrangement (90.5%), as well as 78.1% felt unsatisfied with their dental arrangement. Majority of students look forward that their dental and facial appearance will improve after undergoing orthodontic treatment (97.5%), as well as their level of self-confidence (83.1%).

Based on psychosocial aspects in Table 3, over half of the students (51.7%) were not sure that they would get

good career opportunities after undergoing orthodontic treatment. However, as much as 66.2% wish for an enhancement in good social interaction, while 78.6% thought that poor dental alignment is related to decreased social attractiveness.

Based on oral function disorders in Table 4, over half of the students had no problem while speaking (73.1%) and sense no pain at the temporomandibular joint (56.7%). Most of students consider that their dental health will improve after the treatment (99%), as well as their biting and chewing (81.6%).

Table 5 shows that the most common orthodontic appliances used is fixed orthodontic appliances (79.6%). Most of students using fixed orthodontic appliances were female (76.2%), aged 17-25 years (99.4%), and undergoing study in non-medical faculty (71.9%). Most of students using fixed orthodontic appliances had father with at least diploma or higher degree (69.4%), worked in non-medical field (92.5%), and having monthly income higher than IDR 3,500,000 (85.6%). Most of students using fixed orthodontic appliances had mother with at least diploma or higher degree (66.2%), worked in non-medical field (50%), and having monthly income higher than IDR 3,500,000 (40%). Most fixed orthodontic appliances installed by orthodontists (58.8%). Most of students using clear aligners were female (61.0%), aged 17-25 years old (100%), and undergoing study in non-medical faculty (80.5%). Most of students using clear aligners had father with at least diploma or higher degree (65.9%), worked in non-medical field (87.8%) and having monthly income higher than IDR 3,500,000 (95.1%). Students using clear aligners had mother with at least diploma or higher degree (63.4%), worked in non-medical field (43.9%) and having monthly income higher than IDR 3,500,000 (53.7%). Most clear aligners installed by orthodontists (95.1%).

**Table 4.** Oral disorders aspects of undergraduate students in West Jakarta

Questions	Yes (%)	No (%)
Do you have any problem while speaking?	54 (26.9)	147 (73.1)
Do you have any pain/clicking sound around your ears (at the temporomandibular joint)?	87 (43.3)	114 (56.7)
Do you think your dental health will improve after orthodontic treatment?	199 (99.0)	2 (1.0)
Do you think your biting and chewing will improve after orthodontic treatment?	164 (81.6)	37 (18.4)

**Table 5.** Characteristic of undergraduate students in West Jakarta based on the type of orthodontic appliance used

Variable	Fixed orthodontic appliance	Clear aligners
	n (%)	n (%)
<b>Gender</b>		
Male	38 (23.8)	16 (39.0)
Female	122 (76.2)	25 (61.0)
<b>Age</b>		
12-16	1 (0.6)	0 (0.0)
17-25	159 (99.4)	41 (100.0)
<b>Faculty</b>		
Medical	45 (28.1)	8 (19.5)
Non-Medical	115 (71.9)	33 (80.5)
<b>Father's last education</b>		
Low	5 (3.1)	0 (0.0)
Intermediate	44 (27.5)	14 (34.1)
High	111 (69.4)	27 (65.9)
<b>Mother's last education</b>		
Low	3 (1.9)	0 (0.0)
Intermediate	51 (31.9)	15 (36.6)
High	106 (66.2)	26 (63.4)
<b>Father's occupation</b>		
Medical	12 (7.5)	5 (12.2)
Non-Medical	148 (92.5)	36 (87.8)
<b>Mother's occupation</b>		
Medical	20 (12.5)	9 (22.0)
Non-Medical	80 (50.0)	18 (43.9)
Not working	60 (37.5)	14 (34.1)
<b>Father's monthly income</b>		
< IDR 3,500,000	23 (14.4)	2 (4.9)
> IDR 3,500,000	137 (85.6)	39 (95.1)
<b>Mother's monthly income</b>		
< IDR 3,500,000	38 (23.7)	5 (12.2)
> IDR 3,500,000	64 (40.0)	22 (53.7)
No Income	58 (36.3)	14 (34.1)
<b>Installation of orthodontic appliances</b>		
General Dentist	66 (41.2)	2 (4.9)
Orthodontist	94 (58.8)	39 (95.1)

## DISCUSSION

Based on self-perception, most of the students felt that they had poor dental arrangement, unsatisfied with their dental arrangement, and expecting their appearance will be improved along with their level of self-confidence after undergoing orthodontic treatment. Most orthodontic patients are mainly motivated to improve dental aesthetics since facial appearance may represent an individual image as well as increasing self-confidence.<sup>11,16</sup>



Social environment is essential for adolescents regarding to their self-image and solid identity.<sup>17</sup> Adolescents pay great attention to physical attractiveness in order to be accepted and appreciated in the social environment, therefore dental aesthetics considered able to strengthen their psychosocial status.<sup>8,18</sup> A study based on psychosocial factors showed poor dental arrangement is associated with a decrease in social attractiveness. Better social interaction is very much expected after doing the orthodontic treatment.

Although they wish for an enhancement in good social interaction, majority of students were not sure about getting better career opportunities after undergoing orthodontic treatment. Individual with an aesthetics smile is considered more confident, especially in social and work environment. Apart from the aesthetic factors that can be beneficial in terms of career opportunities, many other factors may be involved, such as individual competence and motivation to work.<sup>19,20</sup> Opportunity to advance career are known to be related to with organization planning and career development, including facilitated training and support from human resources management.<sup>19</sup>

Majority of students felt that they had no issue regarding ability to speech, painful sense nor clicking sound at the temporomandibular joint, yet they expected that their chewing function and dental health will improve after treatment. Knowledge and awareness regarding dental and oral health may encourage interest in orthodontic treatment. Although majority of students had non-medical educational background, they were aware of the value for improving themselves aesthetically, functionally and socially.<sup>21</sup>

Number of fixed orthodontic appliances user were higher than clear aligners among undergraduate students in West Jakarta. This result is reasonable considering that fixed orthodontic appliances were known and used long before clear aligners.<sup>6,22</sup> Clear aligners are also commonly used for malocclusion cases with a low level of complexity, thereby limiting its use.<sup>6</sup> Although clear aligners has become a profitable alternative to conventional fixed orthodontic appliances, it is important to acknowledge tooth movements that may pose treatment challenges and recognize those cases which may be more successfully treated using fixed orthodontic appliances.<sup>23</sup> Most of clear aligners treatment was performed by orthodontist, in consequence of the competence and technology needed, such as three-dimensional treatment planning, CAD-CAM computer technology, stereolithography, and tooth movement simulation software.<sup>6</sup>

Demographic data of undergraduate student show the same characteristics distribution among fixed appliances and clear aligners user. Dissatisfaction of dental profile was not affected by gender or age in particular.<sup>24</sup> Many previous studies found that higher level of parental education and social economic class were related to increased number of orthodontic treatments, but there was no explanation about the treatment type.<sup>14</sup>

## CONCLUSION

Fixed orthodontic appliances still become the main preference among undergraduate students in West Jakarta. Awareness and dissatisfaction of their dental arrangements were substantial as well as the desire that facial and dental appearance will improved after treatment. Orthodontic treatment was considered as way to enhance social interaction social attractiveness. Understanding the elements involved in the demand for orthodontic treatment in a certain population will bring through a better assessment of treatment needs and priorities.

## CONFLICT OF INTEREST

The authors declare that there are no conflict of interest regarding the publication of this paper.

## REFERENCES

1. Badan Penelitian dan Pengembangan Kesehatan. Riset Kesehatan Dasar (RISKESDAS) 2018. Jakarta: Kementerian Kesehatan Republik Indonesia; 2018.
2. Loblobly M, Anindita PS, Leman MA. Gambaran maloklusi berdasarkan indeks Handicapping Malocclusion Assessment Record (HMAR) Pada Siswa SMAN 9 Manado. *J e-GiGi* . 2015;3(2).
3. Riyanti E, Ratna Indriyanti, Risti Saptarini Primarti. Prevalensi maloklusi dan gigi berjejal berdasarkan jenis kelamin dan umur pada anak-anak sekolah dasar di Bandung. *J Pengabdian Kpd Masy*. 2018;2(12):992-5.
4. Iranzo-Cortés JE, Montiel-Company JM, Bellot-Arcis C, Almerich-Torres T, Acevedo-Atala C, Ortola-Siscar JC, et al. Factors related to the psychological impact of malocclusion in adolescents. *Sci Rep*. 2020;10(1):1-8.
5. Khairusy CH, Adhani R, Wibowo D. Hubungan tingkat pengetahuan responden dengan pemilihan operator selain dokter gigi ditinjau dari bahaya pemasangan alat ortodontik. *Dentino Jur Ked Gigi*. 2017;2(2):166-9.
6. Weir T. Clear aligners in orthodontic treatment. *Aust Dent J*. 2017;62:58–62.

7. Laura Mitchell. An introduction to orthodontics. 4th ed. United Kingdom: Oxford university press; 2019. p.10-12.
8. Tamer I, Oztas E, Marsan G. Orthodontic treatment with clear aligners and the scientific reality behind their marketing: A literature review. *Turk J Orthod.* 2019;32(4):241-6.
9. Muthu Laakshmi G. Reasons for seeking orthodontic treatment among south Indian population - a questionnaire study. *J Pharm Sci & Res.* 2016;8(7).
10. Marques LS, Pordeus IA, Ramos-Jorge ML, Filognio CA, Filognio CB, Pereira LJ, Paiva SM. Factors associated with the desire for orthodontic treatment among Brazilian adolescents and their parents. *BMC Oral Health.* 2009;9(1):1-7.
11. Maria C, Himawati M. Hubungan antara persepsi remaja tentang penggunaan alat ortodontik cekat dan minat terhadap perawatan maloklusi (Penelitian pada pelajar SMAK "X" Bandung). *IDJ.* 2018;7(1):1-8.
12. Maru E, Suyatmi D, Yuniarly E. hubungan status ekonomi dengan motivasi penggunaan ortodonti cekat pada pasien remaja di klinik gigi swasta Yogyakarta [Dissertation], Yogyakarta; Poltekkes Kemenkes Yogyakarta; 2021.
13. Fajriani M. Status Sosio-ekonomi dan kebutuhan perawatan ortodonti pada anak usia remaja. [Skripsi]. Makassar: Fakultas Kedokteran Gigi Universitas Hasannudin Makassar; 2020.
14. Ghonmode S, Shrivastava S, Kadaskar AR, Bapat SS. Socioeconomic burden of orthodontic treatment: a systematic review. *Med Pharm.* 2022;1:1-8.
15. Singh AS. Common procedures for development, validity and reliability of a questionnaire. *Int. J. Economics Commerce Manag.* 2017;5(5):790-801
16. Livas C, Delli K. Subjective and objective perception of orthodontic treatment need - A systematic review. *Eur J Orthod.* 2013;35(3):347-53.
17. Kim Y. Study on the perception of orthodontic treatment according to age: A questionnaire survey. *Korean J Orthod.* 2017;47(4):215-21.
18. Muttaqin Z, Hadi L, Naomi N. Pengaruh pemakaian peranti ortodonti cekat terhadap status psikososial. *J Prima Medika Sains.* 2021;3(2):78-81.
19. Ariwibowo J, Pintor Siolemba Patiro S. Pengaruh peluang karir dan kompetensi terhadap kinerja pegawai melalui motivasi kerja dan kepuasan kerja sebagai variabel mediasi pada kantor wilayah kementerian hukum dan hak asasi manusia Sulawesi Barat. *J ECOBISMA.* 2022;9(2):126-134.
20. Hadi L, Muttaqin Z, Leomandra T. Persepsi estetika senyum pada mahasiswa yang belum dan sedang dalam perawatan ortodonti. *J Ked Gi Unpad.* 2022 Apr 28;34(1):1.
21. Nurhaeni. Gambaran Kebutuhan perawatan ortodonti pada mahasiswa jurusan keperawatan gigi Poltekkes Makassar. *J Media Kesehatan Gigi.* 2017; 16(1):62-68.
22. Mahesa Mahendra M, Sri Ardani IGAK. Pengaruh umur, pendidikan dan pendapatan terhadap niat beli konsumen pada produk kosmetik the Body Shop di kota Denpasar. *E-Jurnal Manajemen Universitas Udayana.* 2015.
23. Murphy SJ, Lee S, Scharm JC, Kim S, Amin AA, Wu TH. Comparison of maxillary anterior tooth movement between Invisalign and fixed appliances. *Am J Orthod Dentofacial Orthop.* 2023 Feb 15: S0889-5406(23)00032-X. doi: 10.1016/j.ajodo.2022.10.024. Epub ahead of print. PMID: 36801092.
24. Jayachandar D, Dinesh SS. Factors affecting patient's desire for seeking orthodontic treatment. *Int J Orthod Rehabil.* 2016;7(3):89.

# Characteristics of Orthodontic Appliance Users based on Demographics, Self- Perception, Psychosocial, and Oral Disorders (Study Among Undergraduate Students in West Jakarta)

## ORIGINALITY REPORT

11%

SIMILARITY INDEX

7%

INTERNET SOURCES

10%

PUBLICATIONS

4%

STUDENT PAPERS

## PRIMARY SOURCES

1	<a href="https://www.ipindexing.com">ipindexing.com</a> Internet Source	2%
2	<a href="https://repository.trisakti.ac.id">repository.trisakti.ac.id</a> Internet Source	2%
3	Leandro S Marques, Isabela A Pordeus, Maria L Ramos-Jorge, Cid A Filogônio et al. "Factors associated with the desire for orthodontic treatment among Brazilian adolescents and their parents", BMC Oral Health, 2009 Publication	1%
4	Submitted to Universitas Indonesia Student Paper	1%
5	Shaun J. Murphy, Sanghee Lee, Joshua C. Scharm, Stella Kim et al. "Comparison of maxillary anterior tooth movement between Invisalign and fixed appliances", American Journal of Orthodontics and Dentofacial Orthopedics, 2023	1%

---

6	Submitted to Sriwijaya University Student Paper	1 %
7	Wahyu P. Nugraheni, Asri Hikmatuz Zahroh, Risky Kusuma Hartono, Ryan Rachmad Nugraha, Chang Bae Chun. "National Health Insurance Deficit in Indonesia: Identification of Causes and Solutions for Resolution", Global Journal of Health Science, 2020 Publication	1 %
8	azdok.org Internet Source	1 %
9	journals.riphah.edu.pk Internet Source	1 %
10	Submitted to Fakultas Kedokteran Gigi Universitas Trisakti Student Paper	1 %
11	Elwalid Fadul Nasir. "HIV AND AIDS related knowledge,source of information, and reported need for further education among dental students in Sudan", BMC Public Health, 2008 Publication	<1 %

---

Exclude bibliography On

# Characteristics of Orthodontic Appliance Users based on Demographics, Self- Perception, Psychosocial, and Oral Disorders (Study Among Undergraduate Students in West Jakarta)

---

GRADEMARK REPORT

---

FINAL GRADE

GENERAL COMMENTS

**/0**

---

PAGE 1

---

PAGE 2

---

PAGE 3

---

PAGE 4

---

PAGE 5

---

PAGE 6

---

[JIDA] Author Proof - jkusnoto x +

mail.google.com/mail/u/0/#inbox/FMfcgzGsnLFJwCRQzrZnJvCPCHnkZMV

Gmail Search mail

Compose

Inbox

Starred

Snoozed

Sent

Drafts

More

Labels +

[JIDA] Author Proof Inbox x

Journal of Indonesian Dental Association -jida.indonesia@pdgi.or.id> to me Wed, Jun 21, 9:03AM

Dear Dr. Joko Kusnoto,

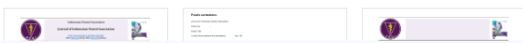
Your submission to the Journal of Indonesian Dental Association needs a proofread in the layout version. This is the last opportunity that you have to make substantial changes. Please upload copyright forms signed by all authors.

Please proofread your manuscript for not more than 24 hours.

We greatly appreciate your confirmation and thank you very much for submitting your article to the Journal of Indonesian Dental Association.

Sincerely yours,  
**Armelia Sari Widyarman**  
Editor in-Chief  
Journal of Indonesian Dental Association  
[armeliasari@trisakti.ac.id](mailto:armeliasari@trisakti.ac.id) ; [armeliasari.dr@gmail.com](mailto:armeliasari.dr@gmail.com)  
<http://jurnal.pdgi.or.id/index.php/jida>

3 Attachments • Scanned by Gmail



[JIDA] Author Proof - jkusnoto x +

mail.google.com/mail/u/0/#inbox/FMfcgzGsnLFJwCRQzrZnJvCPCHnkZMV

Gmail Search mail

Compose

Inbox

Starred

Snoozed

Sent

Drafts

More

Labels +

Dear Dr. Joko Kusnoto,


Your submission to the Journal of Indonesian Dental Association needs a proofread in the layout version. This is the last opportunity that you have to make substantial changes. Please upload copyright forms signed by all authors.

Please proofread your manuscript for not more than 24 hours.

We greatly appreciate your confirmation and thank you very much for submitting your article to the Journal of Indonesian Dental Association.

Sincerely yours,  
**Armelia Sari Widyarman**  
Editor in-Chief  
Journal of Indonesian Dental Association  
[armeliasari@trisakti.ac.id](mailto:armeliasari@trisakti.ac.id) ; [armeliasari.dr@gmail.com](mailto:armeliasari.dr@gmail.com)  
<http://jurnal.pdgi.or.id/index.php/jida>

3 Attachments • Scanned by Gmail



[JIDA] Author Proof - jkusnoto x +

mail.google.com/mail/u/0/#inbox/FMfcgzGsnLFjwCRQzrZnJlvCPCHnkZMV

Gmail Search mail

Compose

Inbox

Starred

Snoozed

Sent

Drafts

More

Labels +

99 of 414

Jun 22, 2023, 10:32PM

J Kusno <jkusnoto2@gmail.com>  
to Journal, bcc: j\_kusno

Dear Dr. Widyaman,

Herewith we attached our manuscript proofread revision (revision highlighted in yellow) and copyright agreement letter of our manuscript titled Characteristics of Orthodontic Appliance Users based on Demographics, Self-Perception, Psychosocial, and Oral Disorders (Study among undergraduate students in West Jakarta). Please make necessary revisions for the publication version. Thank you for your kind attention and cooperation.

Sincerely,  
V Yovanka, J Kusnoto, and LH Andayani

2 Attachments • Scanned by Gmail

974\_RA\_22 Proofs...  
Copyright Agree...

Reply Forward

Type here to search

30°C Kabut 6:38 PM 11/9/2023