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ORIGINAL ARTICLE

Knowledge, attitude, and implementation toward denture adhesive among Indonesian Dental Students and Dentists

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Keywords: Attitude, Dental students, Dentist, Denture adhesive, Implementation, Knowledge.

ABSTRACT

Increased exposure of denture adhesive commercially may have impact on how denture wearers use this material without dentist's prescription. Dentists need to know the proper use of denture adhesive so that they can educate public the indication and contraindication to avoid side effects. The aim of this study was to assess knowledge, attitudes, and implementation toward of denture adhesive among dental students and dentists. The questionnaire was made through expert discussion and psychometric test to determine the validity and reliability of the questionnaire was tested on 146 subjects consist of 73 dental students and 73 dentists in Jakarta. Test retest reliability was tested on 30 subjects. Univariate analyze were carried out on knowledge, attitudes, and implementation of each group of respondents. The 29 items of questionnaires were consist of three domains of knowledge (23 items), attitude(3 items) and implementation (3 items). Convergent validity was confirmed by correlation coefficients ranged from 0.327 to 0.355 for knowledge, attitude, and implementation domain. Internal consistency showed Cronbach alpha values from 0,669 to 0,859. The interclass correlations were ranged form 0.821-0.923. Significant differences between dental students and dentists were found for implementation domain toward denture adhesive. In this study, 87.7% dental students and 80.8% dentists were already know about denture adhesive. But 78.1% dental students and 39.7% dentists have never applied this material. Questionnaire knowledge, attitude, and implementation toward denture adhesive in Indonesian has a good validity and reliability value, especially in knowledge and implementation domain. The majority of respondents in the dental student and dentist groups already know about indications and contraindications toward denture adhesive. (IJP 2024;5(1):59-65)

INTRODUCTION

The use of additional products in removable denture treatment such as denture adhesive can help to improve retention.[1] The Glossary of Prosthodontic Terms ninth edition defined denture adhesive as a material used to adhere denture to oral mucosa.[2] Some research says that improving denture fitness, chewing ability, and the main reason for using denture adhesive is confidence while using removable denture.[3,4]

The application of denture adhesive must be considered according to its indications and contraindications. This material can be used in patient who experience xerostomia, patient with neuromuscular disease such as Parkinson's disease, or when using temporary denture if needed.[5,6] Denture adhesives are not recommended for long-term use to repair loose or fractured denture, because this material cannot be a substitute for relining or rebasing procedures that should be performed.[5-7]

Coates (2000) reported that 67.1% patient had never tried, 32.9% had tried denture adhesive but only 10 (6.9%) currently used it.[3] Denture adhesive that are sold commercially through the media and advertisement contribute to the use of this material without being prescribed by dentists or self-prescribed.[6,7] Therefore, knowledge and attitude of dentists about denture adhesives give a very important role to provide education to patient about indication, contraindication, how to use, frequency of use, and how to clean the material from mucosa and denture base to prevent problems in the future.[7,8]

Study on knowledge and attitudes regarding denture adhesives was previously conducted in Saudi Arabia. Study by Al Taweel et

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Table 1. Charachteristics of the participant.

Charactristics (N=146)	Dental student N(%)	Dentists N(%)
Gender		
Male(30(20.5))	15(10.27)	15(10.27)
Female(116(79.5))	58(39.73)	58(39.73)
Age		
15-24 years old	73(50)	3(2.05)
25-44 years old	-	62(42.47)
45-64 years old	-	8(5.5)
≥ 65 years old	-	-
Profession		
Dental student	73(50)	-
Dentist	-	73(50)
General practitioner	-	56(38.36)
Resident	-	10(6.85)
Specialist	-	7(4.79)
Dental practice experience (dentists)		
0-10 years	-	53(72.6)
11-20 years	-	13(17.8)
21-30 years	-	6(8.2)
>30 years	-	1(1.4)
Removable denture cases have been handled (dentist)		
Nothing	-	3(4.1)
1-5	-	24(32.9)
6-10	-	16(21.9)
11-20	-	12(21.9)
21-30	-	6(8.2)
31-40	-	-
41-50	-	3(4.1)
≥ 51	-	9(12.3)
Average denture cases handled in a month		
Nothing	-	20(27.4)
1-4	-	51(69.9)
5-10	-	1(1.4)
> 11	-	1(1.4)

al. (2016) described that 93% of the respondents already knew and 85.5% had been taught about denture adhesives in undergraduate education.[9] Study by Sadamori et al (2005) with a Pilot Study used a questionnaire to compare the knowledge of Japanese and Indonesian dentists regarding denture adhesive.[4] From this study, it was found that dentists in Japan obtained more information about denture adhesives and used denture adhesive more than dentists in Indonesia.[4] Study by Hong et al. (2008) also conducted a questionnaire survey research on dental students and dentists in China regarding denture adhesive and provided an illustration that 73% of the respondents did not know and had not been taught about this material either from books, television, or lectures.[10] Based on the description that has been explained above, the author wants to conduct research to investigate the knowledge, attitudes, and implementation of denture adhesive among professional students and dentists and their practice in Indonesia.

MATERIAL AND METHODS

This study received ethical approval form Ethics Commission from Faculty of Dentistry, Universitas Indonesia on November 3, 2022 with protocol number 94/Ethical Approval/FKGUI/XI/2022. The research was carried out in November-December 2022. The new measuring tool in the form of a questionnaire was made in accordance with the objectives and research methodology so that relevant questionnaire items were obtained to be able to objectively assess knowledge, attitudes, and implementation of denture adhesive among dental student and dentist.

The development of the questionnaire included item development, pilot testing, and psychometric validation.[11] The item development is also generated through expert discussion to review and to add another items, reduce items, as well as to get suggestion to get better content validity.[12] This questionnaire is self-administered and uses a five-scale Likert response. The domain of knowledge and attitudes uses a scale of 1: Strongly disagree; 2: Disagree; 3: Undecided; 4: Agree; 5: Strongly agree, whereas the implementation domain using a scale of 1: Never; 2: Rarely; 3: Sometimes; 4: Often; 5: Always. Trial was conducted to 20 people consist of 10 dental student and 10 dentist to assess respondent's interpretations using the preliminary questionnaire. Then a survey was conducted to test psychometric validation using Pearson or Spearman tests. Meanwhile, the discriminant validity test used the unpaired T test or Mann-Whitney. The reliability tests tested were internal consistency and test and retest.

RESULTS

Item Development

Questionnaire items were collected through literature study to find materials that could be used as items that are in accordance with the main objectives based on reference books and previous research. Most of the items used are new items taken based on reference books and have not been used in previous research. Some of the items refer to questionnaires used in previous studies, including Slaughter et al. (1999), Sadamori et al. (2005) and Hong et al. (2008), Al Taweel et al. (2016), Hatim et al. (2011) to build a construct that can assess knowledge, attitudes, and implementation of denture adhesive among dental students and dentists.[4,9,10,13,14] A list of 31 draft items was produced. Questionnaire was designed in Indonesian and have three domains, knowledge, attitude, and implementation. Each domain is grouped based on certain sub-domains. The knowledge domain consists of 20 items and have sub-domains regarding awareness, preparation, purpose, indications, contraindications, advantages, and disadvantages of using denture adhesive. The attitude domain consists of 5 items about consideration, recommendation, and education. The implementation domain consists of 3 items about prescription and application. Expert review was conducted by inviting two experts in removable denture and research methodology. There were some suggestions made by the expert. Some question were added, reduce, and rearrange the language to avoid multiperception.

A total of 20 participants were interviewed using the preliminary questionnaire which has been corrected based on expert review. At the trial stage, there was not much feedback

Table 2. Questionnaire items of knowledge domain and percentage distributions of answers

No.	Item	Subject	Response(N(%))				
			1	2	3	4	5
Q1	Saya mengetahui mengenai denture adhesive	DS	-	1(1.4)	8(11.2)	41(56.2)	23(31.5)
		D	-	1(1.4)	13(17.8)	33(45.2)	26(35.6)
Q2	Saya pernah mempelajari mengenai denture adhesive	DS	1(1.4)	5(6.8)	22(30.1)	29(39.7)	16(21.9)
		D	2(2.7)	7(9.6)	17(23.3)	34(46.6)	13(17.8)
Q3	Denture adhesive memiliki sediaan dalam bentuk pasta	DS	-	1(1.4)	7(9.6)	33(45.2)	32(43.8)
		D	-	1(1.4)	5(6.8)	36(49.3)	31(42.5)
Q4	Denture adhesive memiliki sediaan dalam bentuk bubuk	DS	5(6.8)	12(16.4)	25(34.2)	17(23.3)	14(19.2)
		D	6(8.2)	15(20.5)	29(39.7)	17(23.3)	6(8.2)
Q5	Saya mengetahui bahwa penggunaan denture adhesive sesuai indikasi membantu mendapatkan retensi dan stabilisasi gigi tiruan	DS	-	2(2.7)	3(4.1)	35(47.9)	33(45.2)
		D	1(1.4)	-	3(4.1)	41(56.2)	28(38.4)
Q6	Denture adhesive dapat digunakan pada pasien dengan gangguan neuromuskular dengan gerakan lidah, bibir, dan pipi yang tidak dapat dikontrol	DS	-	2(2.7)	15(20.5)	32(43.8)	24(32.9)
		D	-	3(4.1)	7(9.6)	39(53.4)	24(32.9)
Q7	Pasien yang mengalami gangguan pada kelenjar saliva atau hipofungsi kelenjar saliva, seperti xerostomia dapat diindikasikan menggunakan denture adhesive	DS	1(1.4)	7(9.6)	25(34.2)	20(27.4)	20(27.4)
		D	2(2.7)	2(2.7)	14(19.2)	36(49.3)	19(26.0)
Q8	Denture adhesive dapat digunakan untuk pasien yang tidak memiliki dukungan struktur anatomi yang adekuat seperti pasien pasca bedah maksilofasial atau memiliki celah palatum	DS	1(1.4)	4(5.5)	16(21.9)	27(50.7)	15(20.5)
		D	2(2.7)	3(4.1)	15(20.5)	38(52.1)	15(20.5)
Q9	Denture adhesive dapat digunakan pada periode tertentu setelah pemasangan gigi tiruan immediate untuk meningkatkan kenyamanan, retensi, dan fungsi gigi tiruan	DS	-	2(2.7)	15(20.5)	35(47.9)	21(28.8)
		D	1(1.4)	3(4.1)	10(13.7)	40(54.8)	19(26.0)
Q10	Denture adhesive dapat digunakan pada tahap penentuan hubungan rahang dan percobaan gigi tiruan malam	DS	9(12.3)	16(21.9)	32(43.8)	10(13.7)	6(8.2)
		D	8(11.0)	20(27.4)	19(26.0)	17(23.3)	9(12.3)
Q11	Pasien yang mengalami alergi terhadap material denture adhesive tidak dapat menggunakan denture adhesive	DS	-	3(4.1)	15(20.5)	29(39.7)	26(35.6)
		D	2(2.7)	1(1.4)	6(8.2)	29 (39.7)	35(47.9)
Q12	Penggunaan denture adhesive sebaiknya disarankan pada pasien sesuai indikasi, memiliki kebersihan mulut baik, dan dapat menjaga OH-nya	DS	-	3(4.1)	6(8.2)	32(43.8)	32(43.8)
		D		-	4(5.5)	29(39.7)	40(54.8)
Q13	Denture adhesive tidak dianjurkan pada gigi tiruan yang longgar akibat proses pembuatan yang tidak baik	DS	-	3(4.1)	14(19.2)	25(34.2)	31(42.5)
		D	2(2.7)	3(4.1)	8(11.0)	19(26.0)	41(56.2)
Q14	Denture adhesive tidak dapat menyelesaikan masalah pada gigi tiruan yang fraktur atau kehilangan sayap	DS	-	3(4.1)	12(16.4)	26(35.6)	32(43.8)
		D	-	-	6(8.2)	27(37.0)	40(54.8)
Q15	Denture adhesive yang digunakan sesuai indikasinya dapat membantu meningkatkan fungsi mastikasi dan fonetik	DS	-	-	7(9.6)	33(45.2)	33(45.2)
		D	-	-	3(4.1)	35(47.9)	35(47.9)
Q16	Denture adhesive yang digunakan sesuai indikasinya dapat membantu meningkatkan kepercayaan diri pasien saat menggunakan gigi tiruan lepasan	DS	-	-	10(13.7)	33(45.2)	30(41.1)
		D	-	-	3(4.1)	34(46.6)	36(49.3)
Q17	Kandungan seng (Zn) yang berlebih pada denture adhesive dapat menyebabkan toksisitas	DS	-	1(1.4)	35(47.9)	27(37.0)	10(13.7)
		D	-	1(1.4)	37(50.7)	25(34.2)	10(13.7)
Q18	Pembersihan denture adhesive yang kurang baik dalam jangka panjang dapat memicu pertumbuhan jamur Candida albicans pada mukosa maupun basis gigi tiruan	DS	-	2(2.7)	8(11.0)	25(34.2)	38(52.1)
		D	-	-	1(1.4)	32(43.8)	40(54.8)

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Table 2. Questionnaire items of knowledge domain and percentage distributions of answers

No.	Item	Subject	Response(N(%))				
			1	2	3	4	5
Q19	Pemakaian denture adhesive secara self-prescribed dalam jangka panjang dapat menyebabkan resorpsi tulang alveolar	DS	-	6(8.2)	39(53.4)	16(21.9)	12(16.4)
		D	2(2.7)	5(6.8)	38(52.1)	19(26.0)	9(12.3)
Q20	Pengaplikasian denture adhesive pada gigi tiruan lepasan dilakukan sesuai dengan petunjuk pemakaian produk	DS	-	-	6(8.2)	33(45.2)	34(46.6)
		D	-	-	1(1.4)	34(46.6)	38(52.1)
Q21	Perlekatan denture adhesive yang baik memerlukan lapisan tipis merata di seluruh permukaan basis gigi tiruan dengan mukosa	DS	-	2(2.7)	11(15.1)	46(63.0)	14(19.2)
		D	1(1.4)	5(6.8)	5(6.8)	39(52.4)	23(31.5)
Q22	Kemampuan retensi dari denture adhesive berkisar antara 3 sampai 12 jam tergantung bentuk sediaan yang digunakan dan variasi kasus	DS	-	-	27(37.0)	34(46.6)	12(16.4)
		D	-	-	17(23.3)	44(60.3)	12(16.4)
Q23	Denture adhesive pada gigi tiruan dan mukosa perlu dibersihkan setelah pemakaian	DS	-	-	12(16.4)	25(34.2)	36(49.3)
		D	-	-	2(2.7)	27(37.0)	44(60.3)

Table 3. Questionnaire items of attitude domain and percentage distributions of answers

No.	Item	Subject	Response(N(%))				
			1	2	3	4	5
Q24	Saya akan mempertimbangkan penggunaan denture adhesive pada pasien sesuai indikasi	DS	-	-	5(6.8)	45(61.6)	21(28.8)
		D	-	-	4(5.5)	37(50.7)	32(43.8)
Q25	Saya merasa perlu mempelajari lebih lanjut mengenai penggunaan denture adhesive	DS	-	-	1(1.4)	22(30.1)	50(68.5)
		D	-	-	1(1.4)	22(30.1)	50(68.5)
Q26	Saya akan merekomendasikan penggunaan denture adhesive kepada pasien yang sesuai indikasi dengan instruksi penggunaan yang tepat	DS	-	-	4(5.5)	35(47.9)	34(46.6)
		D	-	-	2(2.7)	35(47.9)	26(49.3)

Table 4. Questionnaire items of implementation domain and percentage distributions of answers

No.	Item	Subject	Response(N(%))				
			1	2	3	4	5
Q28	Saya pernah meresepkan denture adhesive pada pasien yang sesuai indikasi	DS	57(78.1)	7(9.6)	2(2.7)	3(5.5)	3(4.1)
		D	29(39.7)	13(17.8)	7(9.6)	18(24.7)	6(8.2)
Q29	Saya pernah mengaplikasikan denture adhesive untuk stabilitas basis galangan gigit pada tahap pembuatan gigi tiruan	DS	57(78.1)	7(9.6)	2(2.7)	4(5.5)	3(4.1)
		D	48(65.8)	16(21.9)	4(5.5)	4(5.5)	1(1.4)
Q30	Saya pernah membiarkan pasien menggunakan denture adhesive walaupun tidak indikasi dan sudah diberi edukasi penggunaan yang tepat	DS	61(83.6)	4(5.5)	5(6.8)	1(1.4)	2(2.7)
		D	53(72.6)	9(12.3)	5(6.8)	6(8.2)	-

from the participants, and generally speaking, the subjects had grasped the questionnaire items. There was a multiperception on one item of the knowledge domain but that was resolved by changing the language arrangement. To prevent multiperception, some language rules need to be altered. The questionnaire was then finalized with input from the trial results so that the psychometric test could proceed.

Psychometric Test

Psychometric test reliability was taken by analyzing 146 answered questionnaire subjected to reliability and validity testing. Of the 146 participants consist of 73 dental students and 73 dentists (56 general practitioners, 10 residents, and 7 specialists), 30 were collected from male participants (20.5%) and 116 were collected from female participants (79.5).

Majority of the participants was 15-24 years old (32.05%). According to profession, half of the participants, 73 subjects (50%) are dental students and another half of the participants, 73 subjects (50%) are dentists. The participants' work experience was dominated by the 0-10 year group (53 (72.6%) participants). Majority of the dentists, 24 subjects (32.9%) had treated 1-5 removable denture. Majority of the dentists (69.9%) also handles 1-4 denture cases per month Table 1.

Reliability test

Reliability test internal consistency measured by Cronbach's alpha. Cronbach's alpha coefficient in knowledge domain was 0.859 (good reliability), in attitude domain was 0.669 (questionable reliability), and in implementation domain was 0.739 (good reliability implementation). Before these result came out, there are 2 item from attitude domain that has been deleted, those are "Saya akan merekomendasikan perbaikan atau pembuatan gigi tiruan baru daripada penggunaan denture adhesive" and "Saya akan memberi edukasi kepada pasien

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yang menggunakan denture adhesive secara mandiri tanpa rekomendasi dokter gigi/self-prescribed". Those item was deleted to increase Cronbach's alpha value from 0.440 (unacceptable reliability) to 0.669 (questionable reliability).

The interclass correlation coefficient (ICC) was evaluated as part of test and retest reliability. A total of 30 respondents completed to answer questionnaire twice, in different time periods, with one week span. After deleting 2 items, the analysis's findings indicate that the knowledge domain's ICC value is 0.923 (excellent reliability), the attitude domain's ICC value is 0.836 (good reliability), and the implementation domain's ICC value is 0.821 (good reliability).

Validity test

The convergent validity test is carried out by comparing thee total score of knowledge or attitude with the global question. Question "Menurut Anda, seberapa jauh Anda sudah mengetahui mengenai penggunaan denture adhesive pada perawatan gigi tiruan lepasan?" used as a qlobal question to assess knowledge by respondents, the question "Beri penilaian bagaimana sikap Anda terhadap penggunaan denture adhesive pada perawatan gigi tiruan lepasan" used as a global question of attitude. Spearman test in the knowledge domain shows that the r-value is 0.355 and p-value is 0.000 ($p<0.05$) indicating that there is statistically significant moderate correlation between the total knowledge score and the respondent's self-assessment of knowledge about denture adhesive. Spearman test in attitude domain shows that the r-value is 0.327 and p-value is 0,009 ($p<0.05$) indicating that there is statistically significant moderate correlation between the total knowledge score and the respondent's self-assessment of attitude towards denture adhesive as removable denture treatment in clinical practice.

Discriminant validity was tested by comparing the mean value of each item and the total mean between two groups (dental students and dentists). Independent T test in knowledge domain shows a p-value of 0.243. Mann-Whitney test shows p-value of attitude domain is 0.624 and p-value implementation domain shows a 0.000. Based on the results of the discriminant validity test, there are no significantly different in knowledge and attitude domain in this questionnaire ($p\geq0.05$) between dental students and dentists groups, while the implementation domain could differ significantly ($p<0.05$) between dental students and dentists groups.

Univariat analyses

The majority of respondents in the dental student and dentist groups already know about denture adhesive paste preparations, intended use, indications and contraindications, as well as advantages and disadvantages of denture adhesive table 1. Some items show doubts from professional student and dentist respondents so that the level of knowledge of professional students and dentists is not yet known, as in item Q4 "Denture adhesive memiliki sediaan dalam bentuk bubuk", 34.2% dental students and 39,7% of dentists answered undecided. Item Q17, "Kandungan seng (Zn) yang berlebih pada denture adhesive dapat menyebabkan toksisitas," received skeptical responses from 50.7% of dentists and 47.9% of dental students. Participants already have a strong understanding of this information, which includes preparations, indicators, indications, advantages, and downsides, according to the results of a high score that is near to the maximum value of knowledge.

The majority of respondents have a positive attitude towards the use of denture adhesive in removable denture treatment. Based on the mean and mean values, the majority of dental students and dentists have shown a positive attitude in using the appropriate denture adhesive.

Table 4 showed item Q7 "Saya pernah meresepkan denture adhesive pada pasien yang sesuai indikasi", 78.1% of dental students and 39.7% of dentists answered never. Item Q28 "Saya pernah mengaplikasikan denture adhesive untuk stabilitas basis galangan gigit pada tahap pembuatan gigi tiruan", 78.1% of dental students and 65.8% of dentists answered never. Based on the mean and mean values, there is a difference in the implementation of denture adhesive between dental students and dentists with the majority of respondents have never applied denture adhesive in dental clinical practice.

DISCUSSION

Participants of this study were 73 dental students and 73 dentist in Jakarta met inclusion and exclusion criteria. Similiar study by Hong et al (2008) with 57 respondents consisted of 31 dental studentsand 26 dentists in China. Other study by Sadamori et al. (2005) involved 43 dentists from Japan and 65 dentists from Indonesia. Differences in number of sample each study can be influenced by differences in the minimum sample size formula used. The respondents who were involved in this study were mostly female, namely 116 (79.5%) people, while the number of male respondents was 30 (20.5%) people. Hong et al. (2008) involved 30 male and 29 female respondents, while another study, namely Sadamori et al. (2005) involved 57 male respondents and 51 female respondents. The respondents' work experience was dominated by the 0-10 year group, namely 53 (72.6%) respondents. The majority of denture cases that have been handled by dentists have handled 1-5 denture cases, namely 24 (32.9%) respondents with the majority handling 1-4 dentures per month. This illustrates that the majority of the dentists in this study were dentists with little length of practice and work experience.

A questionnaire is a measurement tool to collect information about knowledge, beliefs, attitudes, and behavior objectively.[15] Several previous studies, such as Slaughter et al. (1999), Sadamori et al. (2005), Hong et al. (2008), Al Taweel et al. (2016), and Hatim et al. (2011) discusses knowledge and attitude regarding denture adhesive in english and report each item descriptively. The questions used in those study are subjective and not including validation and reliability value. As a result, the objective of this study is to develop a measuring tool that can be used to assess the knowledge, attitudes, and implementation of dental students and dentists. Therefore, this study aims to obtain a measuring instrument that has validity and reliability values and objectively assess knowledge, attitude, and implementation of dental students and dentists . This is intended as an evaluation material for dentists to educate their patients about how too properly use denture adhesives in daily practice.

According to Scientific Advisory Committee (SAC), there are

8 criteria to develop and evaluate questionnaire, including (1) content validity, (2) internal consistency, (3) criterion validity, (4) construct validity, (5) reproducibility, (6) responsiveness, (7) floor and ceiling effects, and (8) interpretability.[12] Content validity established through expert discussion by selecting items, adding, and reducing items which which were continued and trial questionnaires had to be carried out to test readability and understanding. difficult to understand so that it can be interpreted properly by respondents.[12]

In order to evaluate knowledge, attitude, and implementation that can be measured (quantified and represent the actual situation, validity and reliability tests are conducted. Validity refers to whether a test or scale has accuracy to measure what it aims to measure.[16] Reliability is a consistency, stability, and trustworthiness of survey results from a questionnaire.[16] Reliability is done to determine the extent to which the results of a measurement process can be trusted.

Before reducing two questionnaire items, the value of Cronbach's alpha in attitude domain was 0.440. There are a number of reasons why the value of Cronbach's alpha has low reliability, a shorter test will be less reliable than a long test. Low Cronbach's alpha can also result from insufficient item interrelationship or has heterogenous constructs.[17] The reliability coefficient of the measurement results can change depending on which questionnaire items are added or removed. In this study, to improve Cronbach's alpha value, 2 items from the attitude domain were eliminated. The final questionnaire has only 3 items in attitude domain. Reproducibility means that the degree of measurement performed on the same subject is stable over an extended period of time (1-2 weeks).[12] This questionnaire can be said to have strong reproducibility because the knowledge domain's ICC value is 0,923 (excellent reliability), the attitude domain's ICC value is 0,836 (good reliability), and the implementation domain's ICC value is 0,821 (good reliability).

Knowledge according to the Oxford Dictionaries means everything and information that is known, understood, and obtained by someone based on experience or education. Knowledge is also interpreted as a level or fact in knowing some information, understanding, or a principle.[18] Based on the results of data processing, 56.2% of dental students and 45.2% of dentists have mostly known denture adhesive materials and 39.7% of dental students and 46.6% of dentists have studied this material. The same thing was shown in the study of Sadamori et al. (2005) which shows that 66% of dentists in Indonesia and 56% of dentists in Japan already know about denture adhesive.[4] Research by Hong et al. (2008) shows something different, 83% of students in China have never heard of denture adhesive.[10] This could be because the respondents in Hong et al. (2008) who were fourth-year dental students had not been exposed to clinical practice, in contrast to the respondents in this study, who had been exposed to 1-2 years of clinical practice. Furthermore, 47.9% of dental students and 56.2% of dentists knew about the purpose of using denture adhesive, it is to obtain denture retention and stabilization. This finding is not in line with the research by Hong et al. (2008) who showed that 13% of dentists and 26% of students in China did not know about the purpose of using denture adhesive.[10] However, this finding was in line with the study of Sadamori et al. (2005) which shows that 65% of dentists in Indonesia and 58% of dentists in Japan know about the purpose of using denture adhesive.[4] Most of the respondents already knew about the indications for using denture adhesive.

For implementation domain, it was found that several respondents, 45 (61.6%) dental students and 37 (50.7%) dentists agreed to consider using denture adhesive in patients according to indications. The majority of respondents also answered that it was necessary to learn more about the use of denture adhesive. As in the study of Sadamori et al. (2005), as many as 58% of dentists in Japan and 52% of dentists in Indonesia have never been taught about denture adhesives. To increase their knowledge, professional students and dentists need to learn more about the use of denture adhesives so they can educate patients about the right indications. This needs to be considered carefully, because commercially available materials that show ease of use and benefits can contribute to the use of these materials without being prescribed by a dentist or self-prescribed.

Limitation of this study is that the convergent validity of implementation domain cannot be assessed because there was no global question included when the data collection is carried out.

CONCLUSION

Questionnaire knowledge, attitude, and implementation toward denture adhesive among dental students and dentists in Indonesian has a good validity and reliability value, especially in knowledge and implementation domain. Improvements and modifications in attitude domain are strongly advised by adding items or making grammatical corrections. The majority of respondents in the dental student and dentist groups already know about denture adhesive.

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