

Correlation of cost, time, need, access, and competence with the public interest in installing dentures at non-professional dentist

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ABSTRACT

Background: Tooth loss can be caused by trauma, caries, and periodontal disease. It then can trigger an emotional impact on each individual, such as having a lack of confidence, feeling ashamed of the appearance, and trying to hide the missing teeth. As a result, people experiencing tooth loss want to put or replace their missing teeth with artificial ones. Unfortunately, many of them prefer to visit non-professional dentists rather than professional ones providing the same services because of both internal and external factors.

Purpose: This research aimed to analyze factors affecting the public interest in Losari District of Brebes Regency in 2016 to install dentures in non-professional dentists. **Method:** This research focused on a correlation of cost, time, need, access, and competence with denture-making care interest using survey method. Sampling was conducted with purposive sampling technique. The number of samples was thirty-six people. **Result:** There was a significant correlation between public interest in installing dentures at non-professional dentists and cost factor (a p value of 0.010, <a 0.05). Similarly, there was a significant correlation between public interest in installing dentures at non-professional dentists and time factor (a p value of 0.000, <a 0.05). There were significant correlations between the public interest in installing dentures at non-professional dentists and need (a p value of 0.004, <a 0.05), as well as between public interest in installing dentures at non-professional dentists and access factor (a p value of 0.000 <a 0.05). Nevertheless, there was no correlation between public interest in installing dentures at non-professional dentists and competence factor (a p value of 0.482 > a 0.05). **Conclusion:** It can be concluded that there is a correlation between cost, time, need, and access with the public interest in installing dentures at non-professional dentists. Community competence has no correlation with public interest in installing dentures at non-professional dentists.

Keywords: public interest; denture installation; non-professional dentists

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INTRODUCTION

Teeth have an important role in human body. Teeth play a role in chewing, improving performance aesthetically, and talking. Every individual ideally will maintain their permanent teeth naturally throughout their life. However, teeth sometimes can be loose or revoked for various reasons. Tooth loss also can be caused by trauma, caries, and periodontal disease. Consequently, tooth loss can trigger an emotional impact on each individual, such

as having a lack of confidence, feeling ashamed of the appearance, and trying to hide the missing teeth.¹

The number of teeth revoked in people aged 65 years and above is sixteen. The prevalence of dental and oral problems, based on Riskesdas data in 2013, was 25.9%, higher than the prevalence in 2007, only about 23.4%. The prevalence of denture installation was only about 4.5% of the population of Indonesia. In detail, the prevalence of complete denture installation (GTL) was 30.43%, 39.13% for removable partial denture installation (GTSL), and

40.43% for permanent denture installation. Unfortunately, tooth loss case is still often found anywhere, consequently, denture installation is getting higher to replace the missing teeth as well as to improve and maintain the function of the teeth.²

People experiencing tooth loss usually want to put or replace their missing teeth with artificial ones. Nevertheless, many of them prefer to visit non-professional dentists rather than professional ones offering the same services. Non-professional dental practice can easily be found almost throughout Indonesia. Initially, the non-professional dentists only offer denture making service. Nowadays they also offer denture's crown making service and dental filling service regardless of the medical rules since they have never studied about dentistry.³

In the manufacture of dentures, the non-professional dentists do not pay attention to the health of the tissue around the dentures. They also make dentures carelessly. The remaining roots even are still found, not removed during the installation of dentures, resulting in inflamed gingival tissue, swelling, poor oral hygiene, or denture stomatitis due to poor denture adaptation.⁴ The negative effects of the installation commonly found in their users are severe infections, swollen face, as well as red and swollen gingival area with trismus (unable to open the mouth) condition, besides of great halitosis (bad breath).⁵

Factors that affect the public interest in installing dentures at non-professional dentists are internal and external factors. Interest is actually something personal and closely related to attitude. Interests and attitudes are fundamental to prejudice, affecting decision making. Interest may also trigger a person to undertake activities actively, leading to something interested.¹ Based on a preliminary research conducted on fifteen respondents in Losari District of Brebes Regency in February, there were 53% of them installing their dentures at non-professional dentists for various reasons. Similarly, based on interview results, some non-professional dentists also claimed that there were still many people who preferred to install their dentures with them. However, there had not been any statistical data about this situation. This research aimed to examine factors affecting the public interest in installing dentures at non-professional dentists in Losari District of Brebes Regency in 2016.

MATERIALS AND METHOD

This research focused on a correlation of cost, time, need, access, and competence with denture-making care interest using survey method. This research was conducted in Losari District of Brebes Regency. Samples in this research were people in Losari District, installing dentures at non-professional dentists. Sampling was performed with purposive sampling technique. It means that the samples were taken based on the consideration of the researcher, in accordance with inclusion and exclusion criteria that

had been determined. Inclusion criteria in this research were living in Losari District, installing dentures at non-professional dentists, aged >17 years, and willing to be cooperative during collecting data. Meanwhile, exclusion criteria in this research were installing dentures at professional dentists and unwilling to be cooperative during data collection. The number of samples was thirty-six people. Variables measured in this research were internal factors (cost, time, and need) and external factors (access and competence) correlated with public interest in installing dentures at non-professional dentists. Next, primary data collection was conducted by using questionnaire. In this research, people considered as samples had to sign informed consent first. They had to fill out a questionnaire about what factors affecting their interest in installing dentures at the non-professional dentist. This study uses statistical tests of crosstabs correlations. Analysis of the data in this study using a computer program to test the hypothesis based on a significance level of <0.05 with 95% confidence level.

RESULTS

The frequency distribution of the respondents' sex in Table 1 shows that there were sixteen male respondents (44.44%) and twenty female respondents (55.55%). Meanwhile, characteristics of the respondents' age can be seen in Table 2.

The frequency distribution of the respondents' age in Table 2 demonstrates that most respondents were at the age of 51-66 years old, i.e. thirteen people (36.11%), and at least three respondents (8.33%) aged 31-40 years old. Characteristics of the respondents' education level can be seen in Table 3.

The frequency distribution of the respondents' education level in Table 3 depicts that the highest number of the respondents was found in high school education level with a percentage of 33.33%. Meanwhile, the least number of the

Table 1. Frequency distribution of the respondents' sex

No.	Sex	Frequency	Percentage (%)
1	Males	16	44.44
2	Females	20	55.55
	Total	36	100

Table 2. Frequency distribution of the respondents' age

No.	Age	Frequency	Percentage (%)
1	25-30	9	25
2	31-40	3	8.33
3	41-50	11	30.55
4	51-66	13	36.11
	Total	36	100

respondents was found in non-school education level with a percentage of 2.77%. Characteristics of the respondents' job status can be seen in Table 4.

The frequency distribution of the respondents' job status in Table 4 indicates that there were twenty-three respondents (63.88%) with unemployment status, while there were thirteen respondents (36.11%) with employment

Table 3. Frequency distribution of the respondents' education level

No.	Education level	Frequency	Percentage (%)
1	Non-school education level	1	2.78
2	Elementary level	8	22.22
3	Junior High Level	10	27.78
4	Senior High Level	12	33.33
5	Undergraduate Level	5	13.89
	Total	36	100

Table 4. Frequency distribution of the respondents' job status

No.	Job Status	Frequency	Percentage (%)
1	Not Working	23	63.88
2	Working	13	36.11
	Total	36	100

Table 5. Results of the bivariate analysis on the correlation of cost, time, need, access and competence with interest

		Cost		Sig.
		Good	Sufficient	
Interest	High	100%	-	.010
	Low	38.7%	61.3%	
		Time		Sig.
		Good	Sufficient	
Interest	High	100%	-	.000
	Low	19.4%	80.6%	
		Need		Sig.
		Good	Sufficient	
Interest	High	60%	40%	.004
	Low	9.7%	90.3%	
		Access		Sig.
		Good	Sufficient	
Interest	High	100%	-	.000
	Low	22.6%	77.4%	
		Competence		Sig.
		Sufficient	Poor	
Interest	High	100%	-	.482
	Low	90.3%	9.7%	

status. Furthermore, bivariate analysis was performed by correlating the independent variables (cost, time, need, access and competence) with the dependent variable (public interest) as seen in Table 5.

Based on Table 5, there was a significant correlation between cost, time, need and access with the public interest ($p < 0.05$). Meanwhile, there was no correlation between competence and public interest ($p > 0.05$).

DISCUSSION

This research was conducted on people living in Losari District of Brebes Regency. Public interest in installing dentures at non-professional dentists in Losari District of Brebes Regency was influenced by several factors, including internal factors and external factors. Internal factors in this research were cost, time, and need. Meanwhile, external factors in this research were access and competence.

Results of the bivariate analysis using correlation method with crosstab statistics show that there was a significant correlation between cost factor and public interest in installing dentures at the non-professional dentists in the Losari District of Brebes Regency. This is because installing dentures at professional dentists requires a lot of money. If installing dentures in professional dentists will be charged service fees, the cost of making dentures will be increased. Meanwhile, installing dentures at non-professional dentists is only charged for denture manufacturing cost. The cost of dental care of the professional dentists is more expensive than that at the non-professional ones because of the time and expenses incurred to pursue an education in order to gain their competence as professional dentists. On the other hand, the non-professional dentists pursue their dental care skills only from their predecessors or from their education as dental technicians who should deal with laboratory, not directly with the community.⁶

Data on the socio-economic condition of the people of Losari District of Brebes Regency, indicated that most of them work as farmers and small-scale traders. As a result, it can be understood if they prefer to seek cheaper health services. Similarly, a research conducted by Teo'Filo and Leles shows that 88.8% of the samples studied have financial constraints, thus, most of them prefer not to pursue denture treatment.⁷ Economic status is the most important predictor for a person in making decisions to choose treatment. Socio-economic condition of a family can be measured by family income.⁸ In addition, a research conducted by Meutuah in Medan shows that 92.5% of the research samples prefer to install dentures at non-professional dentists due to relatively cheaper cost than at professional dentists.⁹

The bivariate analysis using correlation method with crosstab statistic shows that there was a significant correlation between time factor and public interest in installing dentures at the non-professional dentists in Losari

District of Brebes Regency. According to the respondents, the non-professional dentists work faster. Those dentists even can be called to their homes of residents to make dentures without taking a long time. Besides, treatment procedures performed by the non-professional dentists are very different from the procedures performed by professional ones requiring the respondents to visit them more than once to having denture treatment.

Non-professional dentists in Makasar's Kodingareng Island work quickly so that their patients do not have to wait long. Most of those patients just need to cast their teeth before denture installation without examining the condition of their oral cavity first. Consequently, there is a root residue under the dentures, resulting in inflammation of the gingival tissue. Unlike at the non-professional dentists, professional dentists require a longer process since they have to undergo several stages of the treatment, such as diagnosis, jaw printing, preparatory treatment, laboratory processes, and denture installation.¹⁰

The bivariate analysis using correlation method with crosstab statistic indicates that there was a significant correlation between the need factor and the public interest in installing dentures at the non-professional dentist in the Losari District of Brebes Regency since most of the people experiencing anterior tooth loss require tooth replacements for aesthetic reasons, while those experiencing posterior tooth loss require tooth replacements for mastication.

Tooth loss can also have an emotional impact, leading to stress. A research conducted by Davis *et al.*,¹¹ in London even shows that 45% of people experiencing tooth loss are difficult to accept the situation and feel less confident, as a result, they do not want to be seen by others if not using dentures. It indicates that dentures used to replace missing teeth can restore the confidence of the users.

Need factor is a factor often experienced by the elderly. The older the age is, the worse the nutritional status is.¹² In other words, tooth loss at the old age can affect mastication. Although tooth loss does not have a direct impact, the mastication system will decrease, affecting nutrient intake. Alveolar bone generally will change, especially due to bone mineral loss since aging can affect resorption process of bone matrix. This process, unfortunately, can be accelerated by tooth loss. Therefore, most of elderly people need for dentures.¹³

Like the previous researchers, data obtained in this research also indicate that most respondents have understood the need of dental care and treatment for themselves. Thus, they have a great interest in installing dentures at the non-professional dentists in order to replace the function of their missing teeth. Dentures made by those dentists can immediately fulfill the needs of people who lost their teeth, in addition to quickly recover their lost confidence.

The bivariate analysis using correlation method with crosstab statistic reveals that there was a significant correlation between access factor and public interest in

installing dentures at the non-professional dentists in Losari District of Brebes Regency since those dentists also live in the District of Losari, so their access to the community is easier and closer. The presence of professional dentists is still very minimal and uneven in the District of Losari. The nearest public health center even does not serve the manufacture of dentures. Consequently, people prefer to go to the non-professional ones.

The bivariate analysis using correlation method with crosstab statistic finds that there was no significant correlation between community competence factor and public interest in installing dentures at the non-professional dentists in Losari District of Brebes Regency. This is because they perform their dental care and treatment without permission. It means that they perform their dental care and treatment only based on limited knowledge. They just concern with the satisfaction of the community without considering the impacts that will be experienced by the users of their services.

Based on the Regulation of the Minister of Health No.39 of 2014 article 6 paragraph (2), the authority of non-professional dentists as clearly written is that they are indeed capable of making dentures, but the manufacture and installation of dentures must be conducted by those who have scientific knowledge about oral cavity health in order to prevent the users from infection, swollen face, as well as red and swollen gingival area. Those are not concerned by the non-professional dentists.¹⁴

The competence of the non-professional dentists is clearly different from the competence of the professional ones. According to the Regulation of the Minister of Health No. 512/ Menkes/ Per/ IV/ 2007 concerning the practice license and the implementation of medical practice in chapter 1 article 1 point 7, medical services are health services provided by professional doctors or dentists in accordance with their competence and authority, including promotive, preventive, diagnostic, consultative, curative and rehabilitative services.¹⁵

It can be concluded that there is a correlation between cost, time, need, and access with the public interest in installing dentures at non-professional dentists. Community competence has no correlation with public interest in installing dentures at non-professional dentists.

REFERENCES

1. Gunarsa DS. Psikologi perawatan. Jakarta: Gunung Mulia; 2008; 193-203.
2. Tampubolon NS. Dampak karies gigi dan penyakit periodontal terhadap kualitas hidup. 2010; 1-3.
3. Rahmayani L, Ifwandi, Hasanah I. Analisis pemakaian jasa pemasangan gigi tiruan sebagian lepasan akrilik pada dokter gigi dan tukang gigi di desa Peuniti Banda Aceh. Jurnal PDGI 2012; 61(2): 74-9.
4. Angraeni A. Persepsi masyarakat terhadap pembuatan gigi tiruan oleh tukang gigi di Desa Treman Kecamatan Kauditan. e-GIGI. 2013 Dec 11;1(2).

5. Wahab SA. Perbandingan Karakteristik Pengguna Gigi Tiruan yang Dibuat di Dokter Gigi dengan Tukang Gigi di Banjarmasin (Tinjauan terhadap Pengetahuan dan Biaya Pembuatan Gigi Tiruan). *Dentin*. 2017 May 3;1(1).
6. Lumunon TO. Gambaran Determinan Perilaku Masyarakat dalam Pemanfaatan Jasa Tukang Gigi pada Pembuatan Gigi Tiruan Lepas di Desa Treman Kecamatan Kauditan. *e-Gigi*. 2014 Jun 3;2(1).
7. Teófilo LT, Leles CR. Patient self-perceived impacts and prostodontic need at the time and after tooth loss. *Braz Dent Journal* 2007; 18(2): 91-6.
8. McGrath C, Bedi R. Severe tooth loss among UK adults – who goes for oral rehabilitation?. *J Oral Rehabil* 2002; 29: 240–4.
9. Meutuah S. Hubungan Karakteristik Pengguna Gigi Palsu Dengan Pemanfaatan Jasa Tukang Gigi Di Kota Medan Tahun 2008. 2009; 1-5.
10. Putra MT. Tingkat Kepuasan Masyarakat Pulau Kodingareng terhadap Pelayanan Kesehatan Gigi dan Mulut. 2012; 1-5.
11. Davis DM, Fiske J, Scott B, Radford DR. The emotional effects of tooth loss: a preliminary quantitative study. *Br Dent J* 2000; 188(9): 503.
12. Forster S, Gariballa S. Age as a determinant of nutritional status: a cross sectional study. *Nutrition Journal* 2005; 4: 28.
13. Damayanti DL, Pros S. Respon Jaringan Terhadap Gigi Tiruan Lengkap Pada Pasien Usia Lanjut. *Abstrak*. 2009; 1.
14. Peraturan Menteri Kesehatan R.I Nomor 39 Tahun 2014. Pembinaan, Pengawasan dan Perizinan, Pekerjaan Tukang Gigi. Jakarta. 2014; 7-8.
15. Peraturan Menteri Kesehatan Nomor 512/MENKES/Per/IV/2007. Izin Praktek dan Pelaksanaan Praktek Kedokteran. Jakarta. 2007; 1-14.