

Factor Analysis Affecting The Level Of Public Knowledge About Dentures Made By Dental Workers

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Received 26 August 2024; Accepted 30 September 2024; Published online 30 September 2024

Keywords:

Dental workers; dentures;
knowledge factors

ABSTRACT

Background: Tooth loss can impact physical conditions such as aesthetic appearance, mastication, and speech, affecting overall health. Missing teeth can be replaced with dentures. The number of cases indicates that Indonesians still often seek denture treatment from dental workers. This study aimed to identify the factors that affecting the level of public knowledge about dentures made by dental workers.

Method: A sample of 107 respondents aged 45-65 years from Kendal Regency, including Brangsong, Boja, Limbangan, Plantungan, Patean, and Sukorejo Districts, was selected using probability sampling with Cochran's formula for cluster random sampling. Data were collected using a questionnaire and analyzed using bivariate analysis, specifically Spearman's correlation and Lambda's correlation tests.

Result: The study found that 60% of respondents had good knowledge of dentures made by dental workers, 21% had moderate knowledge, and 19% had low knowledge.

Conclusion: Most respondents were aged 45-55 years (36%), had a college education (40%), were unemployed or housewives (41%), and were influenced by environmental and socio-cultural factors (50%). The analysis showed that age ($p=0.428$) and occupation ($p=0.070$) did not have a significant effect on knowledge levels, while education level ($p=0.000$) and socio-cultural environment ($p=0.009$) did have significant effects.

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DOI: <http://dx.doi.org/10.30659/medali.6.2.124-130>

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How to Cite: Deto et al. T Factor Analysis Affecting The Level Of Public Knowledge About Dentures Made By Dental Workers. MEDALI Jurnal: Media Dental Intelektual, v.6, n.2, p.124-130, September 2024.

INTRODUCTION

One of the most critical components of the oral cavity involved in the processes of chewing and digestion is the teeth. Missing teeth can disrupt physical health, impacting aesthetic appearance, chewing function, and causing discomfort while speaking, which may consequently affect overall health. Missing teeth can be replaced with dentures, including fixed dentures and removable dentures, which should be provided by a dentist, not a dental workers (1). Despite the regulation of dental practices and the legal consequences for violations, many Indonesians continue to seek dentures services from dental workers. A study by Dewi and others in 2020 conducted in Tanjung Lago, West Sumatra, found that 20% of respondents had never visited a dental workers, while 80% had, with dentures fabrication being the most popular form of therapy (2).

The prevalence of individuals seeking dentures services from dental workers is exacerbated by a lack of knowledge (3). Several factors influence public knowledge, including age, educational level, occupation, as well as environmental and socio-cultural factors (4). The higher a person's level of education and age, the easier it is to access health information and adopt healthy living behaviors. Additionally, individuals with higher education levels are more likely to secure employment that enables them to meet their healthcare needs, as dentures services provided by dentists are more expensive than those offered by dental workers (5).

Environmental and socio-cultural contexts within communities also impact a person's knowledge level through attitudes and the acceptance of information (6).

The fabrication of dentures should only be performed by dentists and prosthodontic specialists who possess the authority and expertise in dental and oral care and are responsible for the outcomes (7). The competency of dentists is regulated by the Ministry of Health Regulation (PERMENKES) No. 39 of 2014 concerning the Guidance, Supervision, and Licensing of Dental workers (8).

This study aims to analyze the factors that affecting the level of public knowledge about dentures made by dental workers (9). The research questions to be addressed include : (a) what is the public's level of knowledge about dentures made by dental workers, and (b) what factors that affecting the level of public knowledge about dentures made by dental workers. The expected benefits of this research are to expand understanding, knowledge, and experience related to the factors that affect the public's knowledge about dentures made by dental workers, as well as to provide information to stakeholders that can be used in policy-making regarding dental and oral healthcare regulations (10).

RESEARCH METHOD

This study employs a quantitative method with a descriptive-analytic approach and a cross-sectional study design. The objective is to analyze the factors that affecting the level of public knowledge about dentures

made by dental workers, with age, educational level, occupation, environment, and socio-cultural factors as independent variables, and the public's level of knowledge as the dependent variable. The population of this study consists of individuals aged 45-65 years from six sub-districts in Kendal Regency, Central Java. The sample for this study was selected using probability sampling, specifically cluster random sampling, with the Cochran formula yielding a sample size of 107 respondents. The research instrument utilized an open-ended questionnaire that was tested for validity and reliability. Data analysis was conducted using SPSS version 25, with the Kolmogorov-Smirnov test for normality and the Spearman and Lambda tests for bivariate analysis. This research was conducted in April 2024 in Kendal Regency.

RESULTS

The general profile of respondents in this study includes age, educational level, occupation, socio-cultural environment, and the public's level of knowledge about dentures made by dental workers.

Table 1 Overview of Research Respondents

The Level of Public Knowledge about Dentures Made by Dental Workers		
	N	%
Low (<56%)	20	19
Moderate (56-75%)	23	21
Good (76-100%)	64	60
Mean : 72.32 (Moderate)		

Table 2 Overview of Research Respondents

Age (year)	N	Level of Knowledge			Mean
		Good	Moderate	Low	
45-50	39 (36%)	24 (61%)	5 (13%)	10 (25%)	70.83 (Moderate)
51-55	29 (27%)	22 (75%)	3 (10%)	4 (14%)	77.59 (Good)
56-60	26 (24%)	14 (53%)	9 (35%)	3 (11%)	69.62 (Moderate)
61-65	13 (12%)	4 (30%)	6 (46%)	3 (23%)	70.63 (Moderate)

Table 3 Overview of Research Respondent

Level of Education	N	Level of Knowledge			Mean
		Good	Moderate	Low	
Elemengtary School	24 (22%)	7 (29%)	9 (37%)	8 (33%)	64.58 (Moderate)
Junior High School	17 (16%)	5 (29%)	4 (23%)	8 (47%)	62.35 (Moderate)
Senior High School	24 (22%)	16 (66%)	7 (29%)	1 (4%)	75.83 (Moderate)
Higher Education Institution	42 (40%)	36 (85%)	3 (7%)	3 (7%)	78.81 (Good)

Table 4 Overview of Research Respondent

Occupation	N	Level of Knowledge			Mean
		Good	Mode rate	Low	
Unemployed /Housewife	44 (41%)	14 (32%)	16 (36%)	14 (32%)	66.14 (Moderate)
Entrepreneur	16 (15%)	8 (50%)	5 (31%)	3 (19%)	71.25 (Moderate)
Private Sector Employee	10 (9%)	8 (80%)	1 (10%)	1 (10%)	77.00 (Good)
Education and Health Professional	4 (4%)	4 (100%)	0 (0%)	0 (0%)	82.50 (Good)
Civil servant	33 (31%)	30 (91%)	1 (3%)	2 (6%)	78.48 (Good)

Table 5 Overview of Research Respondent

Level of Education	N	Level of Knowledge			Mean
		Good	Mode rate	Low	
Environmental and socio-cultural score <50%	53 (50%)	18 (34%)	18 (34%)	17 (32%)	66.04 (Moderate)
Environmental and socio-cultural score ≥50%	54 (50%)	46 (85%)	5 (9%)	3 (5%)	78.52 (Good)

Based on the table above, the majority of respondents demonstrate a high level of knowledge about dentures made by dental workers (60%). Respondents in the 51-55 age group exhibit the highest knowledge scores (75%). According to the highest level of education attained,

individuals with a tertiary education display a high level of knowledge (85%). In terms of occupation, the majority of respondents employed as education and health professionals show a perfect knowledge score (100%). Furthermore, the influence of environmental and socio-cultural factors with a score of $\geq 50\%$ predominates the level of knowledge with a high score (85%).

Table 6 Correlation between Age and Education Level with Knowledge Level

	Level of Knowledge	
	Spearman Coefficient	Spearman Sig
Age	-0.077	0.428
Level of Education	0.491	0.000

Based on Table 6, the significance value (p) for age groups is 0.428. Since the p -value > 0.05 , the results indicate that there is no significant correlation between age and knowledge level. For education levels, the significance value (p) is 0.000. Since the p -value < 0.05 , the results indicate a significant correlation between education level and knowledge level.

Table 7 Correlation between Age and Education Level with Knowledge Level

	Level of Knowledge	
	Lambda Coefficient	Lambda Sig
Occupation	-0.170	0.070
Environmental and Socio-Cultural Factors	0.281	0.009

For the occupational groups, the p -value is > 0.05 , indicating that there is no significant correlation between occupation and knowledge level. For environmental and socio-cultural factors, the significance value (p) is

0.009. Since the p -value < 0.05 , the results indicate a significant correlation between environmental and socio-cultural factors and knowledge level.

DISCUSSION

Research on the level of public knowledge about dentures indicates that knowledge varies based on age, education, occupation, and environmental and socio-cultural factors. By age, knowledge about dentures increases in the 51-55 age group (75%) but decreases in older age groups. The 45-50 age group shows a lower percentage due to the general belief among individuals in this age range that tooth loss is predominantly an issue for the elderly. Analysis of the results shows no significant correlation between age and knowledge level ($p=0.953$), which contrasts with Notoadmodjo's theory that suggests age influences knowledge (11).

Based on the highest level of education attained, individuals with a tertiary education have a better understanding of dentures, reaching 85%, while knowledge decreases with lower levels of education. This finding aligns with Notoadmodjo's theory, which posits that education affects the level of knowledge, and that differences in education levels lead to significant differences in knowledge ($p=0.000$) (12).

The research indicates that occupation does not influence the level of knowledge about dentures, with the analysis showing a non-significant result ($p=0.070$). Information about dentures provided by dental workers is

more readily accessible to the public in healthcare-related settings such as clinics, hospitals, and community health centers. The majority of respondents in this study are unemployed individuals, who generally have more time for personal matters and seek information about dentures (13).

Environmental and socio-cultural factors have a significant impact on public knowledge ($p=0.009$). Social interactions and accessibility to healthcare services, such as dental laboratories and clinic facilities, play a crucial role in shaping public knowledge about dentures (14).

CONCLUSION

The level of public knowledge about dentures provided by dental workers is predominantly rated as good, with a score of 60%, while 21% have a moderate score, and 19% have a low score. Factors such as education level and environmental and socio-cultural factors have a significant impact on the level of public knowledge about dentures, whereas age and occupation do not have a significant effect on the level of knowledge about dentures.

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