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Model of Dental and Oral Health Care Services on Decreasing Debris Index Scores in the Implementation of Oral Hygiene in Elderly with Dementia

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Abstract:-Background: Oral hygiene is still a major problem for the elderly. Riskesdas in 2018 stated that dental problems in the 55-64 age group increased by 48.5% and those aged 65 and over by 38.6%. The government's efforts to realize dental and oral health services are regulated in Kepmenkes No. 58 of 2012 and its implementation is regulated in Kepmenkes No. 284 of 2006 but the implementation of dental and oral health care for the elderly with dementia has not yet been specifically implemented, so an innovative model of developing oral health care is needed that is designed according to the needs of the elderly with dementia in performing oral hygiene. independently. Research Objectives: a model of dental and oral health care for the elderly with dementia that is feasible and effective in reducing the debris index score in the implementation of oral hygiene for the elderly with dementia. Methods: Research and development (R&D) with a quasi-experimental method of pre-test and post-test with control group design. The research subjects were divided into 2 groups, namely 16 intervention groups and 16 control groups. The research instrument used a questionnaire and an observation sheet, with DI as the variable. The statistical test used the Intraclass correlation coefficient for expert validation, and the dependent variable used the Man Whitney, Wilcosxon, Paired and Independent sample test. Result : Dental and oral health care for elderly with dementia is relevant in lowering the Debris Index score (p=<0.001) compared to the control group. Conclusion: The development of a model of dental and oral health care for the elderly with dementia is feasible and its application is effective for the implementation of oral hygiene in the elderly compared to the control group.

Keywords:- *Dental and oral health care, Elderly dementia.*

I. INTRODUCTION

Elderly is an age group in humans who have entered the final stages of the phase of life. In this group categorized as elderly, an aging process will occur which is characterized by changes in the physical and mental health of the elderly.[1] In line with the increasing age of a person and the process of decline followed by the emergence of physiological disorders, decreased function, cognitive disorders, affective and psychosocial disorders. [2] Based on data from the United Nations Fund for Population Activities (UNFPA), there are currently around 737 million elderly people in the word. [3]

Dementia (senile) is a cognitive decline that is so severe that it interferes with activities of daily living and social activities experienced by a person. [4] Dementia in the elderly is a condition of general and progressive cognitive impairment related to the physical health of the elderly. Elderly people aged over 60 years are often found with dementia problems which until now it is estimated that more than 30 million people worldwide suffer from dementia with various causes. [5]

With age, aging is unavoidable and every individual will experience changes both physically and mentally. In addition, the elderly experience natural processes and changes in the function of body tissues, including changes in oral tissues, such as dry mouth, pale mucosa, thinning of the mucosa, attrition and tooth loss. [6],[7]

Oral hygiene is still the main problem for the elderly. Poor oral hygiene in the elderly will affect the masticatory function, because the chewing function will decrease, which will affect overall health and nutritional status, which will cause the elderly to avoid certain foods, especially foods that are difficult to chew and cause changes in eating patterns. [8] Dental and oral hygiene is one of the main factors that trigger various oral diseases, especially dental caries, periodontal disease and various infectious diseases and even tooth loss. dental disease is the elderly.[11] This situation shows that Indonesia's dental and oral diseases are still high, and the needs of the Indonesian people for dental treatment (dental treatment needs) are still high.[12]

Minister of Health Regulation No. 58 of 2012 concerning the implementation of dental nurses, the main task of dental nurses in carrying out dental and oral health care services for individuals, groups, and communities in health care facilities.Permenkes No. 58 of 2012, dental and oral health care is a systematic approach process in the fields of promotive, preventive, and simple curative.[13] Dental and oral health care services are planned dental and oral health services, which can be carried out for certain community groups within a certain period of time, and are carried out continuously in the simple promotive, preventive, and curative fields provided to individuals, groups, and communities. [14].

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II. METHODOLOGY

The design of this study was a quasi-experimental Pretest and Post-test Design (Non Equvalent Control Group). Respondents consisted of 32 elderly people with dementia. The minimum sample size required is 32 people. The sample was divided into two, namely 16 people for the intervention and control groups. The elderly with dementia who became the object of the study were the elderly in the working area of the Padang Sari Public Health Center and the Pudak Payung Public Health Center, Semarang City.

The instrument for implementing the Askepgilut model in the elderly with dementia uses an assessment sheet using a questionnaire and an observation sheet, with the variable Debris Index. while the feasibility of the model was measured using the askepgilut instrument which was designed based on the characteristics of the elderly.

The research data uses an interval scale, statistical tests use the intraclass correlation coefficient to determine the feasibility of the module. Meanwhile, the normality test used the Shapiro Wilk test because the number of respondents was less than 50. The effectiveness test on normal data for the paired group used the dependent sample test and for the unpaired group, the independent sample test was used.

III. RESULTSAND DISCUSSION

A. Data Collection

The results of information collection were carried out through interviews and systematic reviews which concluded that oral hygiene is still the most important problem for the elderly. awareness of the elderly regarding oral hygiene is still low. This is because the elderly are indifferent to taking care of themselves related to dental and oral health, so the elderly need assistance with the participation of the family to maintain dental and oral health in the elderly. There is no dental health maintenance program for the elderly, specifically for teeth.

B. Design and Build

The collection of information produces data that is used to design a model of dental and oral health care for the elderly with dementia that is tailored to the needs of the elderly with dementia. The results of collecting information revealed that there was no dental and oral health care for the elderly with dementia so that oral hygiene in the elderly was still poor. So the researchers made dental and oral health care for the elderly that were adapted to methods that were suitable for the elderly.

C. Expert Validation

There are 3 validarors, namely behavioral experts, dental andoral health care experts, gariatricexperts. Validation was carriedout to obtain data that was used as a basis for testing the feasibility of the model of dental and oral health care for the elderly with dementia

Expert	Score	Mean	p-Value*
behavior	92	96	0.003
dental and oral health care	98		
gariatrics	98		

Table 1. Expert Validation
Interclass correlation coefficient

Based on the results of the assessment of 3 expert validators, it is known that the distribution of frequency data for behavioral experts is 92%, dental and oral health care professionals are 98%, and gariatry experts are 98%. The average value of eligibility is 96 with a very decent category. The results of expert validation show that the p-value = 0.003 means that the dental and oral health care model for the elderly is relevant as a method of dental and oral health education for the elderly with dementia.

D. Model Test

Variabel	**P-volue**	
	Intervensi (n=16)	Kontrol (n=16)
DI *Pre-Test*	0,628	0,201
DI *Pos-Test*	0,277	0,100

Table 2. Normality Test Data Debris Index Elderly
*****Shapiro-Wilk

The results of the normality test showed that the Debris Index intervention group had a P-Value value > 0.05 so it could be concluded that the data were normally distributed, so the parametric test was continued.

Paired t-test*			
kelompok	mean±SD pre-test	mean±SD pos-test	P-value
intervensi	2,56±0,512	1,63±0,500	0,000
kontrol	2,94±0,250	2,50±0,516	0,004

Table 3. I Paired t-Test Results
*Wilcoxon

The results of the paired data effectiveness test for elderly with dementia showed that the P-value of the intervention group was 0.000 ($p<0.05$), meaning that the development of a dental andoral health care model was effective in reducing DI in the implementation of oral hygiene in the elderly. The p-value of the DI in the control group was 0.004 ($p<0.05$), meaning that the oral health care model used in the control group was effective in reducing DI in the elderly with dementia in the implementation of oral hygiene.

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Independent t-Test**		
kelompok	mean±SD pre-test	mean±SD pos-test
intervensi	2,56±0,512	1,63±0,500
kontrol	2,69±0,479	2,38±0,619
P-value	0,481	0,001

Table 4. Independent t-Test Results
**Independent Sample Test

The results of the test of the effectiveness of the unpaired data DI the pre-test data between the intervention group and the control group were not significantly different, it could be seen that the p-value was 0.481 (p>0.05) while the post-test data for the intervention and control groups were significantly different, it was seen that the p-values were significantly different. -value is 0.001 (p<0.05) meaning that the development of a model of oral health care for the elderly with dementia is more effective in improving attitudes in the implementation of oral hygiene compared to the care used in the control group. This is evidenced by the decrease in the average value after being treated in the intervention group better than the control group, namely the intervention group to 1.63 while the control group to 2.38.

Unpaired Data Test Value Change (Δ)**		
	Mean±SD Pre-Post Tes	P-value
intervensi	2,25±1,732	0,000
kontrol	0,31±0,479	

Table 5. Unpaired Data Test Value Change (Δ)**

The results of the unpaired data test, the pre-post delta (Δ) values were significantly different, it was seen that the p-value was 0.000 (p<0.05), meaning that the development of a model of oral health care for the elderly with dementia was effective in reducing DI scores in the implementation of oral hygiene compared to with the care used in the control group. This is evidenced by the increase in the average value after being treated in the intervention group better than the control group, namely the intervention group to 2.25 while the control group to 0.31.

E. Model Result

The product is a model of dental and oral health care for the elderly. This model was prepared for dental health workers or dental and oral therapists about the basic concepts of implementing a model of dental and oral health care for the elderly with dementia in relation to increasing the participation of dental and oral health workers in the implementation of promotive and preventive efforts in the field of dental health, especially those who associated with increasing the ability of the elderly in increasing efforts to reduce the debris index score in the elderly with dementia. This model was developed from the dental and oral health care model listed in the Minister of Health No. 284 of 2006 with reference to the journal on dental care and characteristics of the elderly [6],[13],[16].

F. Discussion

For the implementation of oral hygiene in the elderly in an effort to reduce the debris index score in the elderly with dementia, special efforts are needed through the implementation of dental and oral health care for the elderly in its implementation and assistance by the family, based on the opinion of Desi (2015). receive special attention because it affects general health. Good knowledge of oral hygiene is very important to prevent dental and oral diseases. Maintaining oral hygiene is one way to maintain the condition of the elderly body.[17]

The increasing number of the elderly population will cause problems, one of which is self-care for the elderly who are reduced about dental and oral hygiene. Poor oral hygiene can cause health services to increase, besides that there is a physical decline such as difficulties in communication and socializing experienced by the elderly.[18],[19].

Any type of serious dental health problems in the mouth will cause oral infections that cause respiratory problems in the elderly. The elderly are at risk for oral health problems due to lack of knowledge about oral hygiene, inability to perform oral care, or changes in the integrity of the teeth and mucosa due to disease.[20]

IV. CONCLUSION AND RECOMMENDATIONS

Based on the results of the study, it can be concluded that the dental and oral health care model is feasible and its application is effective in the implementation of oral hygiene in reducing the scoe debris index in the elderly with dementia.

The suggestion from the author is for further researchers, it is hoped that further research can be carried out by categorizing the age of the elderly towards this model of dental and oral health care, as well as being able to conduct research with different methods and develop research variables.

REFERENCES

[1.] Nauli Fa, Ismalinda W, Dewi Ap. Hubungan Keberadaan Pasangan Hidup Dengan Harga Diri Pada Lansia 1 1,3. *J Kepearawan Jiwa* 2014; 2: 24–30.
[2.] Suwarni S, Setiawan S, Syatibi Mm. Hubungan Usia Demensia Dan Kemampuan Fungsional Pada Lansia. *J Keterapian Fis* 2017; 2: 34–41.
[3.] Afriani T, Yurnalis, Arlina F, Putra De. Warta Pengabdian Andalas. *War Pengamdian Andalas* 2019; 26: 16–22.
[4.] Alvin Abdillah, J, Luluk Fauziyah. HubunganTugasKesehatanKeluargaDengan Tingkat DemensiaPadaLansiaJurnal Kesehatan Medika Udayana Vol.06 No.02 Oktober 2020
[5.] Siegel Ba. 2014 Cassen Lecture: What Have We Learned From The National Oncologic Pet Registry? *J Nucl Med* 2014; 55: 9n-15n.
[6.] Kementrian Kesehatan Ri. Analisis Lansia Di Indonesia. *Pus Data Dan Inf Kementeri Kesehat Ri* 2017.

[7.] Maryati, Purnamasari Erw. Life Review Therapy On Depression Levels In Elderly Socially Guided Citizens In Budi Mulia Pstw Budi Mulia 3 South Jakarta. *J Ilm* 2020; Vol. 15, N: 8.
[8.] Abdat M, Jernita T. Oral Health Knowledge And Attitude, Oral Health Status In Elderly And Its Impact On General Well-Being. *Dentika Dent J* 2018; 21: 21–28.
[9.] Pindobilowo P. Pengaruh Oral Hygiene Terhadap Malnutrisi Pada Lansia. *J Ilm Dan Teknol Kedokt Gigi* 2018; 14: 1.
[10.] Mulyawati A, Romdlon Ma. Optimalisasi Potensi Kader Posyandu Dalam Upaya Peningkatan Kesehatan Gigi Dan Mulut Lansia Di Dusun Semaya, Kecamatan Karanglewas,Kabupaten Banyumas. *J Pengemb Sumber Daya Perdesaan* 2018; : 77–87.
[11.] Ermawati T. Profil Kebersihan Dan Perilaku Menjaga Kesehatan Gigi Dan Mulut Pada Lansia Di Desa Darsono Kabupaten Jember. *Ikesma* 2016; 12: 77–83.
[12.] Rosidah Ne, Nurbayani S, Barus A, Sofian R, Purnama T, Bekasi P *Et Al*. Di Poliklinik Pertamedika Bekasi Periode Dental And Mouth Care Needs In Elderly Patients In Pertamedika. 2020; 1: 1–5.
[13.] Kementrian Kesehatan Ri. Hasil Riset Kesehatan Dasar (Riskesdas). 2018.
[14.] Peraturan Menteri Kesehatan. Peraturan Menteri Kesehatan Republik Indonesia Nomor 58 Tahun 2012. 2013.
[15.] Erni Gultom Rd. Bahan Ajar Kesehatan Gigi Konsep Dasar Pelayanan Kesehatan Gigi Dan Mulut I. 2017, P 3.
[16.] Sari D, Sandra, Arina Ymd, Ermawati T. Hubungan Pengetahuan Kesehatan Gigi Mulut Dengan Status Kebersihan Rongga Mulut Pada Lansia. *J Ikesmas* 2015; 11: 44–51.
[17.] Gao Ss, Chen Kj, Duangthip D, Lo Ecm, Chu Ch. The Oral Health Status Of Chinese Elderly People With And Without Dementia: A Cross-Sectional Study. *Int J Environ Res Public Health* 2020; 17: 3–10.
[18.] Wong Fmf. First Data In The Process Of Validating A Tool To Evaluate Knowledge, Attitude And Practice Of Healthcare Providers In Oral Care Of Institutionalized Elderly Residents: Content Validity, Reliability And Pilot Study. *Int J Environ Res Public Health* 2021; 18. Doi:10.3390/Ijerph18084145.
[19.] Kesehatan Fi, Surakarta Um. Irawati J210.080.032. *Pengaruh Pendidik Kesehat Terhadap Pengetah Oral Hyg Pada Lanjut Usia Di Wil Kerja Puskesmas Karangmalang Kabupaten Sragen* 2012; : 14.
[20.] Riskesdas K. Hasil Utama Riset Kesehata Dasar (Riskesdas). *J Phys A Math Theor* 2018; 44: 1–200.