Practices of oral health maintenance, caries protective factors and caries experience in adults

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ABSTRACT

Introduction: Dental caries is still the most common oral disease experienced in Indonesia. Caries is caused by various factors. Practices in maintaining proper oral health are urgently needed to maintain healthy teeth and mouth to avoid various diseases, including caries. Caries prevention is inseparable from the role of protective factors that maintain the caries balance. This study was aimed at discovering the level of oral health maintenance practices, caries protective factors, as well as caries experience in adults in Sekeloa Region. Methods: The research method was descriptive cross-sectional with purposive sampling technique. The sample consisted of 61 permanent residents aged 35-44 years in South Sekeloa. Data was collected through questionnaire and DMF-T index examination. The questionnaire consisted of questions asking about respondent's biodata, practices of oral health maintenance and caries protective factors. Questions of the questionnaire used in this study were adapted from several journals published by Cheng, Rahman, and Punitha13-15, then translated back and forth by the oathed translator and has been tested for validity and reliability using rank Spearman correlation. Analysis data using distribution frequency and categories using normal distribution curve. Results: This study shows that subjects performed good practices of oral health maintenance (47.54%), adequate (50.82%), bad (1.64%), and good caries protective factors (1.64%), adequate (52.46%), bad (45.90%). The caries experience degree reached 9.13 and was categorized as moderate. Conclusion: The oral health maintenance practices and caries protective factors in adults aged 35-44 years were adequate, and the degree of caries experience was moderate.

Keywords: Oral health maintenance practices, protective factors, caries experience.

INTRODUCTION

Dental caries is the main oral health problem in the world.[1] It is a disease that arises from a dynamic process that involves repetitive cycles of demineralization and remineralization.[2] The process of demineralization is influenced by the pathological factors which accelerate the course

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of the disease, such as frequent exposure to sugar and large number of Streptococcus mutans. The remineralization process is influenced by protective factors.[3] According to the California Dental Association[4], protective factors are chemical therapy or environmental factors that help maintain the caries balance, prevent caries occurrence, and stop the progression of carious lesions. The most important and proven protective factors include drinking water fluoridation, fluoride-containing toothpaste, fluoride varnish, sodium fluoride mouthwash, chlorhexidine gluconate mouthwash, as well as individuals who have normal salivary flow and function.[4]

Oral health is a major indicator of overall health, well-being, and quality of life.[5] Oral health can be defined as a state of being free from acute and chronic oral lesions, including caries, that limit individual capacity in biting, chewing, smiling, talking, and psychosocial well-being.[6] Poor oral hygiene is closely related to bad oral health. Improved oral hygiene is expected to reduce oral health problems.[7] Practices of oral health maintenance for preventing caries recommended by the American Dental Association, include brushing teeth twice a day with fluoride toothpaste, cleaning between teeth using dental floss, consuming healthy and low-sugar foods, and doing regular dental visits.[8]

To discover the experience of caries in a population, we can calculate mean number of DMF-T index by summing all decayed, missing, and filling teeth due to caries, then divide it by the number of respondents participated.[9] The DMF-T index provided by National Report of Basic Health Research are grouped into several age category, only 35-44 age group included in this research since this age group category is the recommended by the WHO as the standard to measure the oral health conditions in adults such as dental caries, severity level of periodontal disease, and general affects of oral health care provided.[9,10] The experience of caries for those aged 35-44 can be measured by calculating the average DMF-T index, subsequently by adjusting it to the categories set by WHO.[9] The results of National Report of Basic Health Research 2018 state that caries prevalence in Indonesia reaches 88.8% and has an average DMF-T index reaches 7.1. The prevalence of caries for those aged 35-44 in Indonesia reaches 92.2%. The average DMFT index as for the 35-44 age group is 6.9.[10]

It means that almost every Indonesian adult aged 35-44 years experienced caries, with one person having at least 7 teeth that have caries experience. Even though the DMFT index is in the low category, the prevalence of caries shows that the majority of the population aged 35-44 have dental caries. This data showed that dental caries is an urgent matter that needs to be resolved. It has been known that tooth brushing is one of the main factors for preventing dental caries.[4] As many as 97.8% of the 35-44 age group have the habit of brushing their teeth every day, but only 3.2% of them do brush at the recommended times. Meanwhile, in West Java, as much as 96.8% of the population aged 3 and over have a habit of brushing their teeth every day, while those who do it at the recommended times (after breakfast and before going to bed at night) account for 2.8%.[10] The research conducted by Tenny (2014) showed that only 1.3% of people in the Sekeloa Region are free of dental caries, while the remaining 98.7% had caries.[11]

Other research conducted by Atlantika et al.[12] showed that 98.75% of people aged 35-44 years had dental caries.Moreover, most of the previous studies studying practices of oral health maintenance and caries protective factors only focus on children, whereas studies on adults have been lacking. Purpose of this research is to discover practices of oral health maintenance, caries protective factors, and caries experience among adults. The survey was conducted by both questionnaires and an oral examination on the 35-44 category as recommended by WHO.[9]

METHODS

This research was conducted as a cross-sectional descriptive study performed by giving out questionnaires and DMFT index examination. The study population were adult residents who settled in the South Sekeloa Region, especially on Jl. Sekeloa Selatan, RW 15, Lebak Gede and 61 samples were taken through purposive sampling method based on inclusion criteria as follow; males or females aged 35-44 years old, permanent residents in the South Sekeloa Region, gave their consent as respondents. The exclusion criteria

were people with special needs and uncooperative. The research was carried out from December 2019 to January 2020.

The questionnaire filling and DMF-T index examination was carried out door-to-door in respondents' homes. Respondents were asked to fill the questionnaire prior to the DMF-T index examination taking place on the same day. Primary data was collected from the questionnaire and DMF-T index examination. Questions of the questionnaire used in this study were adapted from several journals published by Cheng, Rahman, and Punitha[13,14,15], then translated back and forth by the oathed translator and has been tested for validity and reliability.

The questionnaire consisted of three sections. The first one consisted of respondents' biodata including name, age, gender, address, latest education level, occupancy, and phone number. The second section consisted of 14 questions about practices of oral health maintenance. The last section consisted of 8 questions about caries protective factors. The assessment of the DMF-T index was conducted by summing the number of decayed, missing and filled teeth due to caries and categories based on WHO oral health survey.[9]

After the questionnaires and DMFT indices were collected, assessment of the questionnaire began by scoring the section about protective factor and section two about oral health maintenance practices. The maximum total score of section three about oral health maintenance practices is 40, and the maximum total score of section protective factor is 12 and both of these categories are divided into three class categories using normal distribution. Then, the mean number of DMFT was calculated by summing the number of DMFT indices of all respondents and dividing it by the number of respondents participated[9] This study has been approved by the ethical commitee of Universitas Padjadjaran No. 1467/UN6.KEP/EC/2019.

RESULTS

The results obtained are in the forms of the general characteristics of study samples, practices of oral health maintenance, caries protective factors, and caries experience. The general characteristics were based on gender, age, recent education, and type of respondent's occupation. This research was participated by 61 respondents comprising 53 females (86.89%) and males (13.11%), the age ranging from 35 to 44 years old, most of the respondents were high school graduates (55.74%) and unemployed (62.3%). (Table 1)

Table 1. Frequency distribution of characteristics of study samples

Characteristics	N	%
Gender		
Male	8	13.11
Female	53	86.89
Age		
35	4	6.56
36	4	6.56
37	6	9.84
38	7	11.48
39	3	4.92
40	9	14.75
41	4	6.56
42	6	9.84
43	9	14.75
44	9	14.75
Recent education		
Elementary school graduate	7	11.48
Junior high school graduate	6	9.84
High school graduate	34	55.74
University	14	22.95
Occupation		
Not Working	38	62.3
Entrepreneur	9	14.75
Teacher	2	3.28
Private employees	3	4.92
Government employees	1	1.64
Laborers	1	1.64
Others	7	11.48
Total	**61**	**100**

Based on Table 2, respondents brush their teeth twice a day or more (90.16%), but do not brush their teeth at the recommended times. Some respondents 14.75% always brush their teeth after breakfast and 44.26% always brush their teeth before going to bed at night, only 11.48% do at the recommended times (after breakfast and before going to bed at night). Most respondents claim to brush their teeth for 2 minutes or more (60.66%) and brush all surfaces of the teeth

Table 2. Distribution of oral health maintenance practices

	N	%
Tooth brushing		
frequency		
<once a day	0	0
once a day	6	9,84
≥ twice a day	55	90.16
After breakfast		
No	41	67.21
Sometimes	11	18.03
Always	9	14.75
Before bed at night		
No	3	4.92
Sometimes	31	50.82
Always	27	44.26
On the recommended times	7	11.48
Duration		
±1/2 minutes	4	6.56
±1 minute	20	32.79
2 minutes or more	37	60.66
Technique		
1-2 surfaces	7	7
3-4 surfaces	17	17
All surfaces	37	37
Using fluoridated paste		
Do not know	5	8.20
No	0	0
Sometimes	2	3.28
Always	54	88.52
Replacing toothbrush		
9-12 months	1	1.64
5-8 months	5	8.20
≤4 months	55	90.16
Bristle type		
Hard	10	16.39
Medium	28	45.90
Soft	23	37.70
Clean between teeth		
No	26	42.62
Yes	35	57.38
Visit dentist		
Never	35	57.38
Once a year	12	19.67
Twice a year	14	22.95
Scaling		
Never	46	75.41
Once a year	7	11.48
Twice a year	8	13.11
Sugary foods		
≥3 times daily	11	18.03
1-2 times daily	11	18.03
<1 time daily	39	63.93
Sugary drinks		
≥3 times daily	13	21.31
1-2 times daily	24	39.34
<1 time daily	24	39.34
Sticky foods		
≥3 times daily	4	6.56
1-2 times daily	7	11.48
<1 time daily	50	81.91

(60.66%). Mostly always use fluoride-containing toothpaste (88.52%) and replace toothbrushes at least every 4 months (90.16%). The most chosen toothbrush bristle type is medium (45.90%). A total of 57.38% of the respondents clean between teeth. The awareness of the local community to visit the dentist is still small, seen from respondents who regularly visit the dentist twice a year as recommended being only 22.95% and those visiting for a routine scaling twice a year account for only 13.11%. As for the frequency of the consumption of sugar-containing foods, sticky foods, and sugary drinks are considered to be quite good. A large part of the communities do not consume them every day, that is, the number accounts for 63.93, 81.91, 39.34% respectively. Only a small part of the respondents eat sugary foods (18.03%), sugary drinks (21.31%), and sticky foods (6.56%) 3 times or more a day.

Table 3. Category of the respondents' practices of oral health maintenance

Category	Score	N	%
Good	32-40	29	47.54
Adequate	22-31	31	50.82
Bad	12-21	1	1.64
Total		61	100

The practices of oral health maintenance are categorized as good (32-40), adequate (22-31), and bad (12-21). Table 3 shows the practices of oral health maintenance of respondents with 50.82% being adequate, 47.54% good, while a small portion of 1.64% being bad category (Table 3).

Table 4. Distribution of caries protective factors

	N	%
Consuming snack between meals		
Yes	51	83.61
No	10	16.39
Consuming fruits/vegetables as snack		
No	7	11.48
Yes	54	88.52
Consuming milk as snack		
No	38	62.30
Yes	23	37.70
Consuming cheese as snack		
No	41	67.21
Yes	20	32.79
Chewing xylitol gum		
No	41	67.21
Sometimes	17	27.87
Every day	3	4.92
Using chlorhexidine or fluoride containing mouthwash		
Do not know	8	13.11
No	37	60.66
Sometimes	10	16.39
Routine as prescribed	6	9.84
Pit dan fissure sealant treatment		
No	49	80.33
Yes	12	19.67
Topical fluoride treatment		
No	57	93.44
Yes	4	6.56

Most respondents consume snacks between meals (83.61%). They consume vegetables and fruits (88.52%), milk (37.70%), and cheese (32.79%) as snacks. The use of xylitol chewing gum and mouthwash containing chlorhexidine or fluoride is found to be fairly rare. Only 4.92% of respondents chew xylitol regularly every day, while the routine use of chlorhexidine or fluoride mouthwash accounts for only 9.84% of respondents. Only a small number of the respondents in the community undergo caries prevention treatment, namely 19.67% did pit and fissure sealants and 6.56% did topical fluoride applications (Table 4).

Table 5. Category of the respondents' caries protective factors

Category	Score	N	%
Good	9-12	1	1.64
Adequate	5-8	32	52.46
Bad	1-4	28	45.90
Total		61	100

Caries protective factors are categorized as good (9-12), adequate (5-8), and bad (1-4). Based on Table 5, caries protective factors on the majority of respondents considered to be adequate (52.46%), followed by a bad category (45.90%), and only 1.64% being a good category (Tabel 5).

Tabel 6. Distribution of caries prevalence

	N	%
Caries	60	98.36
Caries-free	1	1.64
Total	61	100

Table 6 shows that almost all respondents have caries (98.36%), with only one respondent (1.64%) being free from caries.

Tabel 7. Value and degree of caries experience

Total of respondents	Component			DMFT Index	Degree of caries experience
	DT	MT	FT		
61	367	157	33	9.13	Moderate

Table 7 indicates the DMF-T index values and its respective amount of D, M, F components, and the severity criteria of 61 respondents. Noted that the decayed component has the largest amount than missing and filling components, the untreated decayed was found on 367 teeth. The DMF-T index value obtained by adding up the total number of decayed, missing, and filling components divided by the number of respondents examined accounts for 9.13 meaning that 9 teeth have been decayed, missing, and filled per person. These results include the degree of caries experience according to the WHO category.

DISCUSSION

The act of maintaining dental health is a very important factor in preventing caries formation. Maintenance of dental health can be done by maintaining dental hygiene and eating habits.[16] Cleaning plaque off teeth can prevent periodontal disease and carious lesions. Tooth brushing is the most common and effective method in removing plaque.[17,18] The majority of respondents in this study brush their teeth twice a day. This is in accordance with the frequency of tooth brushing

recommended by American Dental Association.[19] According to Soroye (2017), respondents who brush twice or more every day shows the risk of experiencing caries is 2.4 times smaller.[20] However, this result shows a lower proportion than the national proportion in 35-44 age category.[10] This can be influenced by the lesser number of respondents than that of the National Report of Basic Health Research 2018.

Based on the results of this study, only a few respondents brush their teeth at the recommended times, that is in the morning after breakfast and at night before sleep.[10] Less than half respondents always brush their teeth before bed at night, while most respondents do not do it after breakfast. Most of the respondents brush their teeth in the morning before performing the Fajr Prayer or right after wake up. In agreement with the previous research, this may be related to the fact 90% of Indonesian population is Muslim, tooth brushing might be a habit before performing the Fajr prayer.[21] Other than that, the habits of brushing teeth on certain time could be influenced by respondents' knowledge. Many of the respondents know that it is recommended to brush tooth in the morning but do not know the proper time was after breakfast.

Most respondents answered that they brush their teeth 2 minutes or longer. This result is in line with the tooth brushing time recommended by American Dental Association.[19] However, there is a possibility that not all of the respondents' responses were accurate since there was no direct observation of their tooth brushing. As stated by Baruah[22], people might greatly overestimate their efforts or else trying to fulfill the answers desired by the dentist that is known as social desirability bias.

Each tooth surface has different risks to be exposed to caries. Brushing teeth should reach the entire surface covering the outer surface, the inner surface, and the chewing surface of the teeth.[19] More than a half of the respondents brush their teeth on all surfaces, yet there are still some of the respondents who do not brush all surfaces. The mostly forgotten area was lingual surfaces of anterior teeth then lingual surfaces of posterior teeth. This could happen out of the poor knowledge of respondents about the surfaces of teeth that should be cleaned and also the difficulty of reaching several surfaces. This result is similar to previous research by Eigbobo[23] in children, which found lingual surfaces as the commonly missed area during tooth brushing. It also stated the needs of oral health education on proper oral hygiene practices by dental professionals and supervising of tooth brushing.

The majority of respondents have used fluoride toothpaste. In previous studies, it was found that there was a significant relationship between the prevalence of caries with the use of fluoride-containing toothpaste. Subjects that use fluoride toothpaste show the risk of experiencing dental caries twice as small as those who do not.[20]

Brush bristles used in a damaged state will reduce the effectiveness in cleaning plaque.[24] Most of the respondents have used a toothbrush according to its lifetime as recommended by the American Dental Association, which is 3-4 months or earlier if it has damaged.[19]

Most respondents chose to use medium brush bristle stiffness (45.90%), followed by soft bristles (37.70%) and hard bristles (16.39%). The American Dental Association recommends using the soft bristled brush.[19] Brushing teeth with hard bristles may remove plaque better than soft bristles do, but more potentially cause soft tissue trauma.[25]

In this study, as many as 57.38% of respondents use tools other than toothbrushes to clean their teeth, which are toothpicks. No respondents are using other types of interdental cleaners. The less often use of dental floss may be caused by the difficulty of use, especially at the contact points, despite its use by professionals has been proven to be effective in reducing the risk of interproximal caries.[26] Round-shaped toothpicks allowing only point contact with the tooth surface and more suitable to eliminate debris after meal. The use of wooden toothpicks is easier than dental floss and more acceptable to older people.[26,27] Selection of interdental cleaning aids should consider the convenience use, interdental space size, patient acceptance and motivation, plaque and debris accumulation, psychomotor skills, and adequate cleaning of food, bacteria, and debris by saliva.[22,26]

The American Dental Association and many dentists have agreed at recommending the patient to do a dental visit at a minimum once every 6 months. Supragingival plaque removal with or

without calculus, that is also known as professional tooth cleaning is believed to be effective in the management of dental caries which results in the lower caries increments.[28,29] This procedure is recommended to be carried out twice a year. However, in this study, it is known that only small numbers of respondents have regular dental visits every 6 months while almost half of respondents who do that, have routinely had their teeth cleaned at dentist once in six months. Even though this research took place in Sekeloa Region which is near from dental health services, like Rumah Sakit Gigi dan Mulut Universitas Padjadjaran and Pusat Kesehatan Masyarakat, majority of the respondents showed low awareness on their dental health and oral hygiene and choose to neglect their oral health problems rather than do the dental check-ups because they think it as an unimportant matter, they will have dental visits only if they cannot bear with the pain. On the other hand, some of the respondents postpone their dental check-ups due to financial burdens. This reason seemed to confirm the previous researches stating that, the most frequent reasons for failing to have regular dental visits are lack of knowledge, dental problem was not severe enough to initiate a dental visit, lack of time, neglected their dental health problems, financial obstacles, fear against dentists or dental treatment.[30] and the poor utilization of the dental health services can also be caused by a lack of perception of the need for dental care, poor access to oral health services, or poor attitude toward oral health.[20] Another study have have showed, people who do not attain dental check-ups regularly leding to higher caries prevalence.[31]

Food consumption should be taken into account when it comes to maintaining oral health. The previous research conducted by Hans in 2016 found a significant decrease in salivary pH after consuming soda (3.89) and fruit drinks (3.89), whereas the decrease in salivary pH due to sugary coffee and sugary milk does not reach pH critical namely 6.85 and 7.01, respectively. Sugary drinks have liquid consistency so it is more soluble by saliva and does not last long inside the mouth, but frequent consumption of sweet drinks in a day causes acid produced by bacteria lasts longer in the oral cavity and increases the risk of dental caries and tooth erosion.[32] In this research, sweet drinks include all drinks containing free sugar, such as sugary milk, sugary tea, sugary coffee, soda, and fruit juice. From the data, about 60% of the respondents consume sugary drinks at least once daily. This is twice as higher as the finding of the previous research conducted in adults in 2016 but is similar to the proportion of West Java population as well as 35-39 and 40-45 years Indonesian adults in 2018.[10,33]

As for sweet and sticky foods, there are more who do not eat sweet and sticky foods every day. This finding is not far from the results of the National Report of Basic Health Research 2018, which stated that 51.1% of the population aged ≥3 years in West Java consumed sugary foods at least once a day. And by the age group category, 35.4% of 35-39 years and 34.7% of 40-44 years adults in Indonesia consumed them every day.[10] This indicates that the frequency of consumption of sugary foods and beverages and also sticky foods is considered quite good. According to Horst [34], the frequency of sugar consumption and the duration of sugar in the mouth have more effect on caries risk than on its quantity. This opinion is also supported by Loveren[35] who stated that the suggestion of food consumption will be more easily followed by patients if based on consumption frequency. Foods containing sugar and are sticky may be attached to the surface of the teeth easily. The longer the sugar sticks to the teeth, the longer the bacteria metabolize and produce acid in the teeth. Sweet and sticky foods such as sweets provide sufficient duration for bacteria to metabolize because the sugar they contain is difficult to be dissolved and will be produced slowly during consumption.[27,32]

Proportion of respondents who were considered to be in the adequate category and good category in practicing oral health maintenance is almost equal, and the rest was considered to be in the bad category. This explains that most of the respondents were paying attention to their oral health and oral hygiene. This finding is ultimately important that it is known in the previous study that there is a significant relationship between dental health maintenance and the dental caries status.[36]

Dental caries is known to occur when the demineralization process exceeds remineralization process. Demineralization can be inhibited by protective factors, such as salivary components,

antibacterial agents and fluoride or reversed by remineralization which requires calcium, phosphate, and fluoride.[4]

The cariogenicity of food is strongly influenced by its physical form.[32] The cariogenicity of foods are higher in sticky foods and in foods containing sucrose in solid form that are often consumed mainly as snacks between meals.[27] Cariogenic snacks such as chocolates, sweets, chips, cookies, etc are associated with the higher caries experience.[37] Table 4 shows a majority of respondents consuming snacks between meals. The previous research has proven that daily snack consumption can increase restorative treatment needs, in which the prevalence of restorative treatment needs is significantly higher in subjects who consume daily snacks than those without. Therefore, dietary counseling should be routinely offered in dental clinics.[38] In contrast to snacks, foods that are eaten as main dishes do not pose great danger to the teeth because more saliva is produced. Saliva will help clean the leftovers from the mouth and reduce the effects of acids.[39]

The results showed that the non-cariogenic foods consumed by the respondents were mostly vegetables and fruits, followed by milk and cheese. Milk and cheese are cariogenic foods and in certain conditions can be cariostatic because they contain calcium and phosphate which are good for teeth and have been shown not to cause a significant decrease in pH. Besides, consuming fibrous fruits and vegetables will stimulate saliva secretion that will increase the buffering action of saliva.[40,41] Hence, fresh fruits, vegetables, cheese, and milk are considered as low cariogenicity foods and are recommended to be consumed as an alternative for individuals who are accustomed to eating snacks. Habits of consuming non-cariogenic foods not only help maintain healthy eating habits, but also reduce the number of cariogenic bacteria.[42]

The number of respondents who chew xylitol every day accounts for only 4.92%. Xylitol is the most preferred non-cariogenic sugar alcohol to prevent caries because of its ability to inhibit bacterial growth.[43] The subjects given xylitol in the form of chewing gum have a 23% reduction of risk rate than those given polyol.[44] The use of xylitol as an antibacterial agent in the form of chewing gum will also increase saliva secretion that has an impact on an increase in the mechanical cleansing, delivery of calcium, phosphate, and ions fluoride for remineralization, increasing buffer against acid plaque, as well as specific antibacterial properties in saliva.[43]

The number of respondents who rinse by a mouthwash containing fluoride accounts for 9.84% and that containing chlorhexidine is 0%. Based on the previous research, the use of fluoride mouthwash causes 23% fewer permanent teeth experience lesions rather than not using them.[34] Rinsing with chlorhexidine mouthwash 0.12% once a day a week every month is an antibacterial treatment for caries control. The use of chlorhexidine mouthwash in addition to regular brushing with fluoridated toothpaste has been shown to reduce the risk of caries.[4]

The percentage of respondents who undergo caries prevention treatment such as pit and fissure sealants accounts for 19.67%. Although the use of dental sealants has been proven to be effective in adults, it is often neglected.[45] Low usage of pit and fissure sealant treatment in Sekeloa Region might be due to the lack of promotions of sealant treatment by dentist. This is in line with the previous study which found that application of sealants in adults is four time less likely than in children.[46]

Very small number of respondents who did topical fluoride application. Similar to chlorhexidine mouthwash and pit and fissure sealant treatments, the infrequent provision of topical flouride in adults is inseparable from the role of dentists who very rarely offer and recommend these treatments to adult patients, because they assume these protective treatments only need to be given to children. This is consistent with previous study suggested that the application of fluoride is twice more often to be done in children than in adults.[46] Even though there are only limited studies on the role of topical flouride in adults, in fact, the administration of topical fluoride such as varnish, gel, foam by dentists has been proven effective in preventing caries in adults, especially for people with high caries risk.[47]

Table 5 shows that only a small number of respondents were considered good at practicing the caries protective factors, while the number of respondents who were considered to be in adequate category and bad category is almost equal. It has been mentioned earlier about

the importance of caries protective factors in preventing and arresting caries.[3,4] Therefore, oral health promotion in caries protective factors should be carried out to prevent the increasing number of caries experience in the future.

The result of this study indicates that almost all respondents have had caries. This result is consistent with previous research that has been done in the Sekeloa Region as well as research in the same age category.[11,12]

Table 7 shows the degree of respondents' caries experience included in the moderate category. This figure is quite high if compared to that of the DMF-T index for those aged 35-44 in Indonesia accounting for 6.9.[10] Number of the decayed was found exceeding three third of the total DMFT, then followed by missing teeth, and only a few teeth were filled. It can be concluded that at least one respondent was having 6 decayed teeth, 3 missing teeth, and not every person was getting treatment for their decayed teeth. This findings shows higher ratio of decayed and missing teeth per person than the results of national report.[10]

This difference in DMF-T index can be caused by oral health maintenance practices and protective factors are not ideal yet, as seen in Table 2, only a few respondents brush their teeth after breakfast, do dental visit and get their teeth cleaned by the dentist regularly, as well as in Table 4, a large number of respondents consume snacks between meals, do not consume milk or cheese as snacks, do not use xylitol and mouthwash, do not undergo topical fluoride nor pit and fissure sealant treatments. Besides, this research was conducted on a relatively small sample. Therefore, further research on practices of oral health maintenance and caries protective factors should be carried out on a larger sample. It is recommended to include direct observation of tooth brushing, the making of food consumption diary over a long period, and provide pictures as examples of mouthwash products containing fluoride or chlorhexidine.

CONCLUSION

The oral health maintenance practices and caries protective factors in adults aged 35-44 years in the South Sekeloa Region were adequate, and the degree of caries experience was moderate.

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