

# Oral Health Related Systemic Disease Education for Elderly Age Group

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## Abstract

**Aims:** This empowerment aimed to provide knowledge about systemic disease correlation with oral and dental health to the cadres to convey information to the elderly group. **Subjects and Methods:** The method used in the community empowerment program in this elderly group was the method of counseling with lectures. Evaluation of the participants was conducted after counseling. The evaluation method was done by filling out the questionnaire and observation. Observations were made to the cadres by assessing the cadres in presenting the extension content to the extension workers. Further evaluation was done when the cadres socialized the materials independently in an elderly nursing home. Statistical analysis was carried out using SPSS 17 software (SPSS Inc., Chicago, Illinois). **Results:** There was an increase in posttest average compared with pretest. The mean cadre pretest result was 45.55%, the mean posttest result was 77.55%, and the mean of cadre observation result to relay extension material was 84.52%. **Conclusions:** The elderly understood the signs of systemic disease (diabetes mellitus, hypertension, and coronary heart) in the oral cavity through counseling of elderly cadres.

**Keywords:** Caries, empowerment, toothbrushing habits

## INTRODUCTION

The existence of systemic disease potentially worsens the quality of life of the elderly associated with dental caries. Some studies suggest that people with diabetes, hypertension, and coronary heart disease have the worst quality of life than people without systemic disease.<sup>[1]</sup> Therefore, special attention is needed to elderly people suffering from systemic disease with high dimethyl fumarate value, so that there is a need for community empowerment to increase the knowledge toward systemic disease relationship with oral and dental health.

Community empowerment is a process to improve the ability or capacity of society in utilizing the resources owned: human resources and natural resources which were available in the environment to improve the welfare of life. However, efforts are made not only to increase the capacity of the community to meet their needs but also to build a sense of community self-sufficiency to develop and have a strong motivation in participating in the empowerment process. Society, in this case, becomes the perpetrator or center of the empowerment process.<sup>[2]</sup>

The existence of several kinds of diseases that have a direct correlation is caused by focal infection. Focal infection is caused by a chronic infection somewhere, in which the tooth becomes the origin of the cause of systemic disease development.<sup>[3]</sup> The existence of a correlation between systemic disease and dental caries causes the elderly to be more aware of the importance of their oral health, so that the quality of life of the elderly remains good.

The goal to be achieved from this empowerment program is to create an independent society. Such independence includes the independence of thinking, acting, and controlling what they do. Furthermore, it should be explored what is actually interpreted as independent society.

This empowerment aimed to provide knowledge about systemic disease correlation with oral and dental health to the cadres to convey information to the elderly group.

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**Table 1: Results of cadres pretest**

<i>n</i>	Name	Score	Achievement* (%)
1	Siti R	40	40
2	Sucipto	60	60
3	Sulis A	40	40
4	Wahyudi	50	50
5	Tatik	40	40
6	Sumariyati	50	50
7	Mulyani	50	50
8	Surya W	50	50
9	Yanti	30	30
Mean			45.55

\*Percentage of achievement (maximum 100%)

**Table 2: Posttest results cadres**

<i>n</i>	Name	Score	Achievement* (%)
1	Siti R	60	60
2	Sucipto	70	70
3	Sulis A	60	60
4	Wahyudi	80	80
5	Tatik	100	100
6	Sumariyati	90	90
7	Mulyani	80	80
8	Surya W	80	80
9	Yanti	70	70
10	Heriyanto	80	80
11	Mita	80	80
12	Sudarwati	80	80
Mean			77.55

\*Percentage of achievement (maximum 100%)

## SUBJECTS AND METHODS

### Method of counseling with lectures

Ethical approval for doing this study has been obtained from the Research Ethics Committee of the Faculty of Dentistry, Airlangga University (No. 151/HRECC.FODM/VIII/2017). This study uses the total sampling method. counselling with the lectures is done by explaining the materials to the cadres, followed by a question-answer. This lecture is aimed to provide knowledge about systemic disease and It's correlation with oral and dental health. The evaluation was done by the questionnaire and observation. The questionnaire was given to the cadre before the counseling started as a pretest and was also given after counseling as a posttest. This questionnaire was used to observe the knowledge of cadres before and after counseling. Observations were also conducted on the cadres by asking the cadres to represent the extension workers. This was done to observe the ability of cadres in delivering socialization materials to the elderly. Assessment of cadre observation was done with the checklist.

Subsequent evaluations were carried out when the cadres counseled the elderly in the nursing home. The success of the

**Table 3: Observation of cadres to restate extension material**

<i>n</i>	Name	Score	Achievement* (%)
1	Siti R	34	97.14
2	Sucipto	35	100
3	Sulis A	26	74.28
4	Wahyudi	30	85.71
5	Tatik	32	91.42
6	Sumariyati	28	80
7	Mulyani	30	85.71
8	Surya W	30	85.71
9	Yanti	29	82.85
10	Heriyanto	28	80
11	Mita	27	77.14
12	Sudarwati	26	74.28
Mean			84.52

\*Percentage of achievement (maximum 100%)

**Table 4: Knowledge of the elderly at care center after giving counseling by the cadre**

<i>n</i>	Cadre name	Average elderly knowledge* (%)
1	Tatik	80
2	Mulyani	80
3	Hariyanto	73.33
4	Sucipto	70
5	Sulis	70
6	Surya Wijaya	50
Mean		71

\*Posttest result

cadres is seen from the post test result of the elderly after given counseling by cadres.

All the respondents who were the subject in this study had filled the informed consent that stated their willingness for intraoral examination and filling questionnaire.

The program began with the selection of peer cadres from the nursing home. After the cadres were selected, a pretest was carried out to assess the cadre's level of knowledge. After that, cadres were given material about dental and oral health, as well as systemic disease and It's correlation with oral and dental health. Posttest was carried out to observe the cadre's level of knowledge after counseling. If the value obtained by the cadre is in accordance with predetermined standards, the cadre has graduated to be able to conduct counseling to other elderly people in nursing homes. The level of knowledge of the elderly was examined by the questionnaire.

The questionnaire used in this study had been tested for its validity. The validity test for the questionnaire was done by finding a correlation between the scores of each question (*r* result) with the *r* value. The validity test was done twice until all the questions were considered valid. To be declared

valid, all questions must have a positive  $r$  value and value  $>x$ . The results of the validity show all valid questions.

## RESULTS

There was an increased knowledge of cadres after counseling. It can be seen that there was an increase in posttest average when compared with pretest [Tables 1 and 2].

After counseling, the cadres delivered the material given to the extension agent. This was to observe the delivery of extension materials by the cadres before each cadre went to the care center to provide counseling to the elderly [Table 3].

Furthermore, the evaluation of the ability of cadres in giving counseling at care center by looking at the elderly knowledge about the dental and oral health submitted by the cadres was performed [Table 4].

## DISCUSSION

The achievement of success regarding health promotion activities about counseling of systemic relationship with health of oral cavity in the elderly was high. This can be seen from the cadre understanding of the material delivered during the counseling obtained by looking at the percentage of pretest and posttest cadres. Obtained average knowledge of the elderly before counseling was 45.55%, which can be seen from the value of pretest. The cadres were very enthusiastic about the material given during the counseling; the cadres also gave some questions about extension materials to extension workers. The average (mean value) of posttest achievement of the cadres after giving counseling is 77.55%. It can be concluded that there was an increase of cadre knowledge after counseling.

The result of observation of the cadres in the resubmission of the material was quite good, almost all the cadres could deliver the materials to the extension agent with the mean value of achievement is 84.52%. Subsequent evaluations were carried out when the cadres counseled the elderly in the nursing home. The success of the cadres is seen from the post test result of the elderly after given counseling by cadres. The evaluation was conducted on four elderly nursing homes around Jagir Health Center. The nursing home used in this study is only 4, this is due to the limited time of research so that researchers couldn't visit each existing nursing home in the area. The selection of those nursing home was based on the willingness of the nursing home as a research subject within the time period. Obtained average understanding of the elderly to the material delivered by cadres in care center was 71%. This indicates that the elderly understood with the material delivered by elderly cadre.

The advantages of this empowerment program were the material of counseling according to the elderly condition around the Jagir Puskesmas area which on average has a systemic disease. The target of this empowerment program was a cadre from the elderly nursing home, where the cadres were

trusted by the community, so that the delivery of materials to the elderly was more effective.

The downside of this empowerment program was the overload of material delivered in a short time. This caused the elderly to be not able to comprehend the material to the fullest.

Opportunity gained in the running of this empowerment program was the high attention of the elderly in maintaining physical health and oral health. This had a positive impact on the elderly enthusiasm in this empowerment program. People aged 65 years and over, for instance, are less likely to smoke, drink alcohol, or report high stress. They eat more sensibly than do younger adults, are as likely to walk for exercise, and more likely to check their blood pressure regularly. That is why older adults continue to increase their rate of participation in medical screenings and immunization;<sup>[4]</sup> they seem to have more concern in their health.

However, promotion of health and prevention of chronic illness and disability are significant goals for elder people.<sup>[5]</sup> Thorough and appropriate assessment of the elderly individual is critical to the development of intervention strategies directed toward risk reduction and health promotion.<sup>[6,7]</sup> A major goal of health promotion program in senior housing is promoting physical activity for older residents.<sup>[8-11]</sup>

Difficulties or threats to this empowerment program was that this program empowered the elderly, where special methods are needed to deliver material so that they can easily receive the material.

Based on the results of the evaluation, it can be concluded that oral health education, especially about systemic disease and its relationship with oral health, in the form of counseling method to elderly nursing home cadre was effective. And if these cadres was able to deliver these information to the elderly, then the knowledge about systemic disease relationship with oral health in the society of elderly group could increase.

## CONCLUSION

Based on the results of the evaluation, it can be concluded that dental and oral health education in the form of counseling systemic relationship with oral cavity of elderly with lecture counseling method to Elderly Nursing Home cadre was effective in delivery of information to elderly so that knowledge about systemic disease relationship with oral cavity in society of elderly group could increase.

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## Conflicts of interest

There are no conflicts of interest.

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