



## Original Research Article

# Model development of patient's dental and oral health care in raden mattaher hospital, Jambi Province

Hendry Boy<sup>1\*</sup>, Linda Marlia<sup>1</sup>, Sukarsih<sup>1</sup>, Muliadi<sup>1</sup>

<sup>1</sup>Dept. of Dental Health, Health Polytechnic of Jambi, Indonesia



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## ABSTRACT

**Introduction:** Dental and oral health care is the primary role and authority of the Dental and Oral Therapist. This study aims to develop a dental and oral health care model for patients in the dental polyclinic of Raden Mattaher Hospital.

**Materials and Methods:** This quantitative study used an applied research design to develop a model of dental and oral health care. Eleven dental nurses were involved as informants, and three dentists as key informants. This research was conducted at the dental polyclinic of the Jambi Provincial Hospital from March to November 2022. The data were obtained through interviews, focus group discussions (FGD), observations, and trials of the draft model of the patient's dental health examination. Furthermore, a trial of the dental health care model was carried out on people with a mental health conditions.

**Findings:** The total score on the questionnaire results of the HELISIDI dental and oral health care model was 546, with a presentation of 76% based on the eligibility criteria. These results mean that the HELISIDI Model is eligible but with revisions. The total score for the HELISIDI dental and oral health care status card was 546, with a presentation of 87% based on the eligibility criteria. According to the respondent, the HELISIDI Status Card is eligible but with revisions. After revision, the model and the HELISIDI status card were declared eligible without further revision.

**Conclusion:** The model of dental and oral health care for patients at the dental clinic of Raden Mattaher Hospital is suitable for mental patients.

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## 1. Introduction

Caries is a disease of the hard tissues of the teeth, including enamel, dentin, and cementum, caused by the activity of decaying carbohydrate deposits.<sup>1,2</sup> The hallmark is the demineralization of the hard tissues of the teeth, followed by destruction by organic matter. As a result, bacterial invasion, pulp death, and the spread of infection to the periapical tissue can cause pain. However, at a very early stage, the disease can be stopped, given the possibility of remineralization.<sup>1,3</sup>

Although rare, dental disease can also cause death. Untreated cavities will be a source (focal) of infection and can affect other organs.<sup>4,5</sup> There are several cases of kidney to heart damage and failure associated with dental disease.<sup>6</sup> Dental bacteria can contribute to the formation of heart disease that causes death.<sup>7,8</sup>

The status of dental and oral caries can be measured by the severity of dental and oral disease in the community; for this reason, World Health Organization indicators and assessment standards are needed, such as dental health and periodontal status. The indicator of dental caries status that can and is often used is the DMF-T index.<sup>9,10</sup>

\* Corresponding author.

E-mail address: [hendry.poltekkes@gmail.com](mailto:hendry.poltekkes@gmail.com) (H. Boy).

The results of the 2018 Basic Health Research (BHR) on the dental health conditions of the Indonesian people, 57.6% of the population experienced dental and oral problems, and only 10.2% received medical treatment. In the population aged 35 to 44 years, on average, seven teeth in adults experience problems or cavities. It is also known that only 2.8% of the Indonesian population brush their teeth properly.<sup>11</sup>

Dental and oral health services at Raden Matta Her Hospital Jambi Province are carried out at the Dental Polyclinic. Dental health services are provided by Specialist Dentists, General Dentists, and Dental and Oral Therapists (DOT). This hospital is a level II referral health service in Jambi province; specialist dentists mainly carry out dental health services but still involve DOT. DOT's dental and oral health services are under the Minister of Health Regulation no. 37 of 2019. In addition to collaborative activities with specialist dentists, dental and oral health care activities are carried out for patients at the dental clinic and in the inpatient room.

Several dental and oral therapists (DOT) stated that there was no model/form of dental and oral health care services used by Raden Matta Her Hospital Jambi Province, especially at the Dental Polyclinic. Therefore, it is necessary to conduct research on developing a dental and oral health care model for patients at the dental clinic at Raden Matta Her General Hospital, Jambi Province. The author expects that DOT can use this model in the dental polyclinic to improve dental and oral health services for patients.

The absence of a dental oral health care model will compromise the provision of oral health care for patients, especially mental patients. This study aims to develop a dental and oral health care model for patients in the dental polyclinic of Raden Matta Her Hospital, Jambi Province.

## 2. Materials and Methods

### 2.1. Study design

This quantitative study uses an applied research design to develop a model of oral health care.

### 2.2. Population

The sample of this study was 11 dental nurses at the dental polyclinic of the Jambi Provincial Hospital in March and November 2022 as regular informants, while the key informants consisted of 3 dentists.

### 2.3. Variable

The variables in this study were the dental and oral health care model in the form of (1) dental and oral health care cards (assessment, dental health diagnosis, planning, implementation, and evaluation), (2) promotive and preventive efforts, and (3) referral form from

hospitalization at the dental clinic.

### 2.4. Data collection

Data were collected through interviews, focus group discussions (FGD), observations, and draft dental health examination model trials. The focus group discussion for the informant group is separated from the key informant group. The validity of the data was measured using a triangulation technique of three components, including 1) key informants (dentists), 2) key informants (dental and oral therapists), and the results of observations during the examination. The first stage is data collection, including preparations such as requesting a research application letter from the Director of the Health Polytechnic of the Jambi Ministry of Health. The second stage is implementation; (1) building a model, FGD guidelines, and observations, (2) holding a meeting with the main informant to conduct focus group interviews and discussion on the model that the researcher has prepared (the dental and oral health care model for patients), (3) the key informant will test the model on schizophrenic patients; the researchers will observe the reactions of schizophrenic patients. (4) Evaluate by an interview with focus group discussion to key informants and key informants.

### 2.5. Statistical analysis

The initial stage of data analysis was to validate the dental and oral health care model by 2 experts, and then the model was tested on health workers (ordinary informants) and mental patients.

The formula for the results of expert validation is as follows:

$$\text{Score} = \frac{\text{Total score} \times 100\%}{\text{Summation of the all score Information}}$$

Total skor = the average total value of the assessment results of validators 1 and 2

$$\text{Summation of the all score} = 50.$$

The formula for the results of trials on Dental and Oral Therapists and mental patients is as follows:

$$\text{Score} = \frac{\text{Total score} \times 100\%}{\text{Summation of the all score Information}}$$

$$\text{Total skor} = \text{Total value}$$

$$\text{Summation of the all score} = 715.$$

## 3. Ethical Consideration

No economic incentives were offered or provided for participation in this study. The study protocol matched the Declaration of Helsinki ethical guidelines for clinical studies. This research has been approved by the Health Research Ethics Commission of the Health Polytechnic of the Jambi Ministry of Health with the number LB.02.06/2/18/2022.

#### 4. Findings

Distribution of the characteristics of the informants in the study consisted of gender, years of service, education and functional positions.

**Table 1:** Informan Characteristics

Characteristics	N	%
<b>Gender</b>		
Male	0	0.0
Female	14	100
<b>Work length</b>		
≤1 year	0	0.0
2-10 year	0	0.0
> 10 year	14	100
<b>Education</b>		
Associate Dental Health	11	78.6
General Dentist	3	21.4
Specialist Dentist	0	0.0
<b>Functional Position</b>		
Proficient	8	57.1
Supervisor	4	28.6
Associate	2	14.3

Table 1 shows that all of the informants are female, with a length of work >10 years, dominantly with associate education, and proficient functional positions.

The next step is to identify the problems and needs of the dental and oral health care model. Only 11 dental nurses were included in the respondents.

**Table 2:** Problems and needs of oral dental health care model

Variable	N	%
<b>Knowledge of oral health services</b>		
Good	8	72.7
Poor	3	27.3
<b>Availability of Standard Operational (SOP) Procedure for oral health services</b>		
Yes	0	0.0
No	11	100
<b>Implementation of oral health education</b>		
Yes	4	36.4
No	7	63.6
<b>Documentation of oral health care</b>		
Yes	0	0.0
No	11	100

Table 2 shows that most dental nurses have good knowledge about the duties and functions of dental nurses, but there are still few dental nurses who understand the stages of dental nursing care, SOPs for oral health services are not available, the implementation of oral health service education is still very rare, and documentation has not been maximally implemented.

The name HELISIDI comes from pieces of the names of the research team, including HEndry boy, Linda marlia, SukarsIh, and MuliaDi. The HELISIDI model was validated by two expert teams of academics and practitioners. Two expert validators are Yanti Rahayu, S.ST, and Dr. Bedjo Santoso, S.ST., M.Kes. This validation was carried out to obtain data that was used as a basis for revising the developed media product in the form of a dental and oral health care status card. The recapitulation of the expert's assessment can be seen in Table 3 below.

**Table 3:** Results of initial and final validation of the HELISIDI model

Indicators	Mean score of Validator 1,2	
	Initial	Final
Content	10	27
Display	14,5	16,5
Convenience	7	8,5
Expedience	3	5
Total	34,5	43,5
Final Score	69%	87%

Table 3 shows that the HELISIDI model is feasible but with revisions. Next, the team made revisions according to the validator's inputs and reassessed it. The results of the final validation of the Helisidi model showed that it was feasible without revision.

**Table 4:** HELISIDI status card initial validation results

Indicators	Mean score of Validator 1,2	
	Initial	Final
Content	13,5	16
Display	15,5	16
Convenience	6,5	7,5
Expedience	2,5	3
Total	38	42,5
Final Score	67%	77%

Table 4 shows that the HELISIDI status card is feasible but with revisions. Furthermore, the researcher revised, according to the advice of the validator, then retested. The results of the final validation of the Helisidi status card showed that it was feasible with the revision.

The HELISIDI model was tested on Dental and Oral Therapists and people with a mental health conditions. The first stage of the trial was on ordinary informants, as many as 13 people and the second stage conducted trials on people with a mental health condition, as many as 13.

Table 5 shows that the total score of the informants related to the HELISIDI dental and oral health care model is 546, with a presentation of 76% based on the eligibility criteria; this means the HELISIDI Status Card Model is eligible without revision. The questionnaire results were filled out by respondents related to the HELISIDI dental and oral health care status card. The total score was 546,

**Table 5:** Results of the informant questionnaire model and HELISIDI status card

Indicators	Total Score	
	Model	Status Card
Content	151	208
Display	204	217
Convenience	126	130
Expedience	65	65
Total	546	620
Final Score	76%	87%

representing 87% based on the eligibility criteria. According to the respondent, the HELISIDI Status Card Model was feasible without revision.

**Table 6:** Results of the mental patient questionnaire model and HELISIDI status card

Indicators	Total Score	
	Model	Status Card
Content	115	208
Display	146	217
Convenience	76	144
Expedience	38	83
Total	467	620
Final Score	89%	87%

Table 6 shows that the total score of the respondents is 467 with a presentation of 89% which includes the very feasible criteria without revision.

The results of the respondent's questionnaire were 620 with a presentation of 87% with very decent criteria without revision.

In the HELISIDI model trial, the researchers also made observation sheets when respondents performed dental and oral health care stages according to the HELISIDI model. The results of the observations show that for the assessment stage, the respondents can carry out according to the stages, even though determining the diagnosis of dental health depends on the manual. The planning stage is to provide a checklist on the status card, which is not a problem for the respondents. The implementation stages are collaborative with dentists, then dental health education and the practice of brushing teeth are carried out to patients in dental chairs. The evaluation results during observation (promotive) counseling to patients can be given while the patient is waiting in the waiting room but has been assessed until the examination of vital signs. The respondent can do Stages Evaluation as part of the final stage by asking questions to the respondent.

## 5. Discussion

Dental and oral health care is the main task and authority of the Dental and Oral Therapist (DOT) as a dental health worker, under the professional standards of the dental and

oral therapist<sup>12</sup> and the functional position of Dental and Oral Therapist.<sup>13</sup> The implementation of dental and oral health care is aimed at individuals, groups, and communities so that the degree of dental and oral health is optimal. Dental and oral health care services are provided by DOT, which provides health services both at the Public Health Center (PHC) and at the Hospital.<sup>14</sup>

The dental and oral health care implementation at the dental clinic of Raden Mattaher Hospital has not been under the professional standards of the dental and oral therapist (DOT). The services provided are seen from the stages of care services. There are only the assessment and implementation stages in the form of dental health counseling. DOT has not carried out the stages of dental and oral health care in planning and evaluation. The implementation stage is only in the form of dental and oral health counseling, which is also not supported by adequate facilities such as learning media.

Providing dental and oral health care needs to be supported by adequate DOT knowledge, learning media facilities for dental health education, and documentation of care, including status cards and operational standards of dental and oral health care.<sup>15,16</sup> Cooperation with other health workers, especially general dentists and specialists at Raden Mattaher Hospital, is also necessary. In addition, this hospital has become a teaching hospital. The need for a model of dental and oral health care at Raden Mattaher Hospital is mandatory for DOT to be able to work under their authority and competence.

According to Dengler et al.<sup>17</sup> Action research may facilitate continuous development involving related parties. This study involved DOT and dentists working at the dental clinic of Raden Mattaher Jambi Hospital in developing dental and oral health care that could be applied in the dental clinic. The HELISIDI model of dental and oral health care designed by the researcher was submitted to DOT and dentists and then tested.

The HELISIDI model was developed based on the theory of The Dental Hygiene Process of Care by Darby and Walsh,<sup>18</sup> including the diagnosis of dental and oral health based on the diagnosis of basic human needs for dental and oral health. The HELISIDI model describes the stages of assessment, diagnosis, planning, implementation, and evaluation and is equipped with a dental health status card as a medical record filled out by the DOT and the patient's or patient's family signature as informed consent or approval of care actions. Models and Status Cards of HELISIDI dental and oral health care after being designed by researchers, then expert validation tests and trials were carried out by respondents with criteria based on the criteria of a model by Pahrur Razi et al.<sup>14</sup>

The results of expert validation regarding the feasibility of the HELISIDI model of dental and oral health care were initially 69%, with criteria eligible for revision. Then

revisions were made and re-validated by experts to 87% with criteria eligible for models to be used without revision. The HELISIDI status card by expert validation was initially 69% with criteria eligible for revision, then revised and re-validated by experts to 77% being eligible criteria for revision. The dental and oral health care status card was revised to make it easier for DOT to write.

Models and Status Cards of HELISIDI dental and oral health care were assessed at the initial introduction to respondents (DOT and Dentist). The results of the respondent's questionnaire for the HELISIDI Model are 79% with criteria eligible for revision, while for the HELISIDI status card, it is 76% with criteria eligible for revision. After DOT carried out revisions and trials, there were changes in the feasibility results of the HELISIDI Model and Status Card; for the HELISIDI model, it became 89% with eligible criteria without revision. For the HELISIDI Status Card, it became 87% with eligible criteria without revision. All respondents conducted this test.

HELISIDI, a dental and oral health care model, has shown the feasibility of being used by DOT in the dental clinic. Using the HELISIDI model can provide better dental and oral health care for patients seeking treatment at the dental clinic at Raden Mattaheer Jambi Hospital. The HELISIDI model provides instructions on how dental and oral therapists carry out 5 (five) stages in dental and oral health care services<sup>19</sup> under working conditions in the dental clinic of Raden Mattaheer Hospital. The HELISIDI status card as documentation of dental health care is evidence of the implementation of care by DOT. The stages in dental and oral health care are listed in the HELISIDI status card.

## 6. Conclusion

The HELISIDI model and status card, developed as a dental and oral health care model and tested on dental and oral therapists (DOT), shows its feasibility for use in the dental clinic of Raden Mattaheer Jambi Hospital.

## 7. Authors' Contribution

All authors equally contributed to preparing this article.

## 8. Source of Funding

This study has no financial support from any party.

## 9. Conflict of Interest

None.

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## Author biography

**Hendry Boy**, - <https://orcid.org/0000-0002-8070-0749>

**Linda Marlia**, - <https://orcid.org/0000-0003-0683-2716>

**Sukarsih**, - <https://orcid.org/0000-0002-5609-8612>

**Muliadi**, - <https://orcid.org/0000-0002-6152-7258>

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