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Helisidi As A Model Of Dental And Oral Health Care

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ABSTRACT

Introduction. This study aimed to design a model of oral health care for inpatients that could be implemented by Dental and Oral Therapists in hospitals. The model would be tested and, finally, could be applied and used by the TGM at Raden Mattaher Hospital, Jambi Province.

Methods. This type of research was applied research, using mixed methods (qualitative and quantitative). The study involved dental and oral therapists (TGM) in the inpatient rooms of Raden Mattaher Hospital, Jambi Province.

Results. The results showed that the expert validation score for the inpatient Helisidi model was 91.6%, indicating its high feasibility for use. Meanwhile, the field trial related to the implementation of oral health care yielded a score of 90.74%, signifying its strong suitability for practical application. Additionally, the observations of the implementation of inpatient dental and oral health care revealed a rate of 91.52%, meeting the criteria for highly competent inpatient dental and oral health care implementation.

Conclusion: The HELISIDI model and card, developed as an inpatient oral health care model, demonstrated feasibility and competence for use within the inpatient services of Raden Mattaher Jambi Hospital.

Keywords: Helisidi, Status Card, Health Insurance, Gilut, Hospitalization

Introduction

Caries is a disease that affects dental hard tissues, such as enamel, dentin, and cementum, and is associated with the activity of carbohydrate-reducible microorganisms [1–3]. This condition is characterized by the demineralization of dental hard tissues, followed by organic material destruction [4,5]. Consequently, bacterial invasion and pulp death occur, potentially leading to the spread of infection to the periapical tissues and causing pain. Nevertheless, given the potential for remineralization, the disease progression can be arrested at its initial stages [6,7].

Although very rare, dental diseases can have life-threatening and even fatal consequences. Cavities serve as focal sources of infection and can impact other organs if left untreated. In some cases, evidence of kidney damage and heart failure has been documented [8]. Dental bacteria can contribute to the development of heart disease leading to mortality [9]. The assessment of dental and oral caries status can be achieved by evaluating the severity of dental and oral diseases in the community, for which indicators and assessment standards are necessary, in accordance with WHO guidelines. These may include dental health indicators and periodontal status. The DMF-T index is commonly used as a dental caries status indicator for assessing caries [10,11].

Indonesia's Basic Health Research in 2018 revealed that 57.6% of the population reported experiencing oral issues, with only 10.2% receiving medical treatment. Moreover, within the 35 to 44-year-old demographic, it was discovered that, on average, 7 teeth in adults were affected by issues such as cavities. The research also highlighted that a mere 2.8% of Indonesians maintain proper oral hygiene through regular brushing [12].

The Raden Mattaher Regional General Hospital in Jambi Province is owned by the Jambi Provincial Government and is situated in Jambi city. It was established in 1948 as a Type C hospital, affiliated with the Jambi Army Health Office. On November 19, 1972, it was relocated to Jl. Letjen Suprapto No.31, Telanaipura, Jambi. The hospital is built on a land area of approximately 75,000 square meters, with a building area of approximately 41,590 square meters. Originally known as the Jambi Provincial Regional General Hospital, it was officially renamed Raden Mattaher Regional General Hospital in November 1999, coinciding with the 1999 National Health Day, in honor of one of Jambi's local heroes, Raden Mattaher. In November 2009, the hospital was upgraded to a Class B facility, with a capacity of 321 beds.

Oral and dental health services at Raden Mattaher Hospital in Jambi Province are provided within the inpatient rooms. The services are administered by dental health professionals, including Specialist Dentists, Dentists, and Dental and Oral Therapists (OTs). As a level II referral health facility in Jambi province, the hospital primarily relies on the expertise of Specialist Dentists, while still involving OTs in the process. The dental and oral health services provided by OTs in hospitals are governed by the Minister of Health Regulation No. 37 of 2019. In addition to collaborating with specialist dentists, OTs are responsible for performing dental and oral health care activities for patients in the inpatient rooms [13,14].

Based on interviews with Dental and Oral Therapists (OTs), it has been revealed that Raden Mattaher Hospital, Jambi Province, lacks a specific model or form for providing oral health care services, especially in the inpatient room. Therefore, there is a need to conduct research to develop an oral health care model for inpatient room patients at Raden Mattaher Hospital, Jambi Province. This model is intended for use by the dental and oral therapists working in the inpatient room and is part of the effort to enhance oral health services for the patients.

The aim of this study is to create an effective model for providing oral health care to inpatient room patients at Raden Mattaher Hospital, Jambi Province.

METHODS

Research Design

The design of this research is focused on applied research, aimed at gathering information for problem-solving purposes. Applied research endeavors to apply, test, and evaluate solutions to benefit society. The oral health care model takes the form of (1) oral health care cards for assessment, dental health diagnosis, planning, implementation, and evaluation, (2) promotional and preventive measures, and (3) inpatient to inpatient room referral procedures. [15,16].

Participant

This study involved 30 dental health workers from the inpatient room and dental polyclinic at Raden Mattaher General Hospital, including 27 dental and oral therapists, 1 room manager, and 2 dentists as key informants. The research was conducted between March and November 2022. The selection of ordinary informants was done randomly, and they were required to meet inclusion criteria, such as being functional staff working as dental and oral therapists.

Sample size

A total of 30 students were calculated using the Slovin's formula at $\alpha = 0.05$, and the total population was considered to be 35 people. According to Masturoh and Anggita [17] Sample is calculated using the Taro Yamane formula as follows:

$$n = \frac{N}{1 + Nd^2}$$

Information:

n = Number of samples

N = Number of populations

d = Precision

Data collection and Instrument

The data collection instrument utilized a questionnaire, which was independently prepared by the researcher, validated, and deemed feasible. The questionnaire comprises two main sections. The first section assesses the implementation of oral health care using a Likert scale and includes indicators for the flow of care, covering initial evaluation, care planning, and care implementation. The second section evaluates the care status card, encompassing aspects such as content, appearance, ease of use, and usefulness. This questionnaire employs a Likert scale for responses.

The second measurement instrument is an observation sheet for evaluating the implementation of inpatient oral health care, including three key indicators: initial evaluation and care planning, care implementation, and observation and documentation.

Before implementing the questionnaire, the researchers sought validation from two expert dentists who assessed the inpatient oral health care questionnaire.

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.02.01/6/91/2023.

Statistical Analysis

At the situation analysis stage, data collection techniques were implemented through interviews conducted in focus group discussions (FGDs). Interviews in focus group discussions with main informants and key informants were guided by interview protocols. The focus group discussion for the informant group was conducted separately from the key informant group. Data validity was ensured through triangulation techniques from three sources: 1) key informants (dentists), 2) main informants (head of the room), and 3) observations during examinations.

At the model development stage, researchers collected information through the use of questionnaires and observation sheets. Subsequently, the results from the questionnaires and observation sheets were analyzed manually using the following methods:

$$\text{Score} = \frac{\text{Score obtained x 100 \%}}{\text{Total score (90)}}$$

Table 1. Eligibility Criteria for Status Cards and Hospitalization Helisidi Model

Category	Range	Description
Tidak layak	0-19,99%	Major revision/replace

Kurang layak	20-39,99%	Major revision/replace
Cukup layak	40-59,99%	Minor Revision
Layak	60-79,99%	Minor Revision
Sangat layak	80-99,99%	Without revision

RESULTS

Situation analysis

The research involved 27 oral and dental therapists (OTs) working at the dental clinic of Raden Mattaher Hospital in Jambi as the primary respondents, along with 1 head of the inpatient room and 2 dentists as key informants, making a total of 30 respondents. The research findings, gathered through interviews and focus group discussions, revealed the unimplemented forms of inpatient dental and oral health care services at Raden Mattaher Hospital.

The second issue concerning inpatient oral health care is the absence of Operational Standards for the implementation of oral health care at the Raden Mattaher Hospital dental clinic. All 27 respondents (100%) confirmed the lack of Standard Operating Procedures (SOPs). Operational standards for oral health care are crucial for the effective execution of inpatient care. Interviews with the TGM and Dr. revealed the current absence of SOPs for the implementation of care by dental and oral therapists, as proposed by the hospital management. Despite efforts to establish the SOP, limitations among respondents and the absence of clear guidelines regarding inpatient dental and oral health care have hindered the establishment of the SOP to date.

Moreover, the identified issues were linked to the execution of oral health education and the prevention of oral health problems. Oral health education and prevention constitute integral components of the oral health care implementation by TGM. However, constraints arise in the form of limited educational materials and dental phantoms for TGM's counseling activities. The implementation of preventive measures, such as proper brushing and rinsing, is impeded by the challenges of application among hospitalized patients. Consequently, these factors contribute to the infrequent execution of such activities by TGM, despite the provision of a health education section within the existing patient care medical records.

A comprehensive documentation system is imperative to support inpatient oral health care. The existing documentation structure comprises integrated medical records that encompass patient medical records in dental clinics. However, documentation specifically dedicated to oral health care for TGM remains unavailable (100%). The necessity for comprehensive documentation, such as medical records or dental health status cards, to reflect the implementation of oral health care, stands as a vital aspect of dental patient care. Despite the presence of specialized medical records in the dental clinic, the researcher's observations indicate a lack of documentation regarding oral health care by dental and oral therapists. The current medical record fails to encompass all essential elements of the oral health care stages.

Inpatient Dental and Oral Care Model Design

According to Walsh (2003), oral health care constitutes an endeavor to fulfill fundamental human needs, involving five essential stages that must be undertaken by an OT. Based on these five stages, the HELISIDI Model, a comprehensive Dental and Oral Health Care Model, was developed. The creation of the HELISIDI model was influenced by the Dental Hygiene Process theory, relevant literature, and specific considerations within the Raden Mattaher Hospital dental clinic. This model is divided into two components: guidelines for the implementation of oral health care and dental health status cards designed for the use of OT at the Raden Mattaher Hospital dental clinic.

Table 2. Stages of the HELSIDI model for inpatient

NO	STAGES OF ACTIVITY	FORM OF ACTIVITY	Description

1	Preparation of room and instrument		
2	Using the HELISIDI Model Assessment Form to perform oral health care on patients		
Assessment Stage / Initial evaluation			
3	General patient data entry	Interview	
4	Anamneses Patient complaint Major Complaints History of present illness Past medical history History of allergies Dental and Oral Health Knowledge Data	Interview	Subjective
5	Examination Blood pressure Heart rate Breathing Temperature Pain scale	Examination using tools	Objective
6	Oral examination	Performed by a dental therapist	
DENTAL HEALTH DIAGNOSIS STAGE			
7	Establish oral health diagnoses based on the results of dental assessments and examinations (Dental Apples) OTs checked (√) in boxes 1 to 8 according to the oral health problem (Table 3).	Analyze the results of the initial assessment or evaluation	Analysis
PLANNING STAGE			
8	Write a treatment plan for the patient based on the oral health diagnosis and discuss with the family for approval. Dental and Oral Health Education Consultation (patients or their families ask questions related to the patient's dental disease or problem to the OT) Toothbrush Practice Gargling practice Colaborative Refer to another health worker.		Check List on Form according to the treatment plan that will be given
IMPLEMENTATION STAGE			
9	Oral health education (PROMOTIVE), the materials presented include: Maintenance of Dental and Oral Health, How to Brush Your Teeth, Dental and Oral	Questionnaire results after counseling Observation	Bedside

	Diseases. And treatment of dental and oral diseases Preventive:	
	Take preventive measures such as cleaning the patient's mouth regularly with a wet gauze swab if the patient is unable to perform self-care.	Measured by patient response
	Provide oral care according to the plan, such as brushing the patient's teeth using a soft toothbrush and non-irritating toothpaste.	Referral Form Check
	Assist the patient with additional dental care such as cleaning dentures, braces, or other aids.	
	Perform mouth irrigation if necessary, especially if the patient has difficulty rinsing their mouth by themselves.	
	Instruct the patient on proper oral care and a diet that supports dental health.	
	Consultation (PROMOTIVE)	
	Make regular observations of the patient's oral health.	
	Record the patient's oral and dental condition in a specific observation sheet.	
	Record changes in conditions, problems that arise, and actions that have been taken.	
	Collaborative (assisting in the dental room/oral surgery operating room) and Therapeutic Communication	
	Referral (ensuring the patient makes referrals to other health professionals in the hospital) (CURATIVE)	
EVALUATION STAGE		
10	Patient knowledge (measured from patient questionnaire answers)	Questionnaire results after counseling
	Proficiency in tooth brushing (measured from skilled and unskilled)	Observation
	Collaborative Scaling Patching Extraction Other Measures	Measured by patient response

	Evaluate the oral health care plan regularly. If there is a change in the patient's condition, adjust the care plan as needed. Communicate effectively with the patient, family, and medical team about the changes being made.	Referral Form Check
11	Signature of OT as Dental and Oral Health Care provider	Signature column and date of informed consent

Development

The HELISIDI model underwent expert validation by two teams comprising academic experts and practitioners. The two expert validators were Yanti Rahayu, S.ST and Dr. Bedjo Santoso, S.ST., M.Kes. This validation aimed to collect data serving as the basis for revising the oral health care status cards developed as part of the media products.

Table 3. HELISIDI Inpatient Model Initial Validation Results

Indicator	**Assessment**		**Mean**
	V1	**V2**	
Initial Evaluation and Care Planning	14	14	14
Implementation of care	10	9	9,5
Aspect of content	14	15	14,5
Aspect of display	18	18	18
Aspects of ease of use	13	13	13
Aspects of expediency	14	13	13,5
Total	**83**	**82**	**82,5**

Table 3 demonstrates an average validation score of 82.5 and a total score of 90, resulting in a model feasibility score of 91.6%. This score indicates the high feasibility of the model for use.

Implementation (Initial Field Trial)

Table 4. Respondent Questionnaire for Implementation of Dental and Oral Health Care

Respondents	**Flow of Care**		**Care Status Card (evaluation and documentation)**				
	Initial Evaluation and Care Planning	Implementation of care	Aspect of content	Aspect of display	Aspect of display	Aspect of display	Total
15	207	136	209	275	199	199	1225

According to Table 4, the questionnaire results indicate a total value of 1067 for respondents implementing inpatient dental and oral health care, corresponding to a percentage of 90.74%, signifying the high feasibility of its use.

Table 5. Observation Results of Dental and Oral Health Care Implementation

Respondents	**Initial Evaluation**	**Implementation of care**	**Observation and Documentation**	**Total**

	and Care Planning			
15	340	278	343	961

Table 5 illustrates that the results of observations on the implementation of inpatient dental and oral health care for the respondents are 961, representing 91.52% and meeting the criteria for highly competent implementation of inpatient dental and oral health care.

Evaluation

The results of Phase I, based on the questionnaires filled out by expert validators, indicated that the model and the Dental and Oral Health Care Status Card designed by the researcher were deemed suitable for use, despite requiring revisions in several areas. Subsequently, the researchers incorporated improvements into the model and oral health care status card.

In Phase II, the HELISIDI inpatient oral health care model was directly tested on dental patients in the inpatient department of Raden Mattaher Jambi Hospital. This stage aimed to assess the practicality of implementing the HELISIDI Model by dental therapists for patients in hospital settings.

DISCUSSION

The oral health care service program plays a crucial role in alleviating oral health problems [18,19]. It is widely recognized that the primary objective of oral health care services is to enhance self-care capabilities in the realm of oral health and achieve optimal oral health status [20–22].

Oral health care constitutes the primary responsibility and authority of the Dental and Oral Therapist (OT) as a dental health worker. This role is in line with the professional standards outlined for dental and oral therapists and their functional position [23,24]. The implementation of oral health care is directed towards individuals, groups, and communities to achieve optimal oral health. OTs provide oral health care services within hospital settings, both in the dental clinic and inpatient [20,21,25].

The implementation of oral health care during hospitalization has not yet been undertaken by OTs. The services provided must adhere to the standard of care, encompassing the stages of assessment, diagnosis, planning, implementation, and evaluation. During the implementation phase, it is highly advisable to offer oral health counseling, supported by adequate facilities such as counseling materials. Additionally, preventive measures like tooth brushing and mouth rinsing should be taught.

The process of delivering inpatient oral health care necessitates comprehensive knowledge among OTs, access to learning materials for dental health education, and the availability of care documentation such as status cards and operational standards for oral health care [26–29]. Furthermore, close collaboration with other health professionals, particularly dentists and dental specialists at Raden Mattaher Hospital, is imperative, given the hospital's status as a teaching institution. The establishment of an inpatient oral health care model at Raden Mattaher Hospital is essential to enable OTs to perform their duties in accordance with their expertise and authority.

The HELISIDI model, designed as an inpatient oral health care model, demonstrates its feasibility for use by OTs in the inpatient room. This model enables the provision of comprehensive oral health care to patients receiving treatment at Raden Mattaher Jambi Hospital's inpatient facility. Additionally, the results of the observation on the implementation of inpatient dental and oral health care among respondents revealed an average competence rating of 90.76%.

The HELISIDI model provides clear guidelines for OTs to execute the five stages of oral health care services, tailored to the specific working conditions at the Raden Mattaher Hospital dental clinic. The HELISIDI status card, serving as documentation for inpatient dental health care, serves as evidence of the diligent care provided by TGM, outlining the

various stages of oral health care.

The implementation of the HELISIDI card is expected to enhance the hospital's oral health care documentation quality and ultimately improve the overall oral health care standards for patients.

Limitation

In this study, data were manually analyzed to ascertain the score values obtained from the questionnaires and observations of the oral health care implementation. In the future, this developed model should be tested on a larger sample of patients through experimental research.

CONCLUSION

The tested HELISIDI model, designed as an inpatient oral health care model for dental and oral therapists (OTs), demonstrates its feasibility for use in the inpatient care setting of Raden Mattaher Jambi Hospital.

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Conflict of Interest

The authors report no conflict of interest.

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Authors' Contribution

All authors equally contributed to preparing this article.

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