SIDALUT Prototype Application for Patient Dental and Oral Health Care

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A B S T R A C T

Background Dental and oral therapists are required to carry out dental and oral health care services. The results of the researcher's observations showed that there were still obstacles in the health service to implement a good care process. Problems include not understanding or forgetting how to write a diagnosis statement according to the concept of dental hygienist darby & walsh, not having a dental hygienist darby & walsh textbook as a guideline, and it is impractical to use the textbook because of the thick pages of the book and in a foreign language. Therefore, a more effective and efficient tool is needed as a reference / guideline by students and TGM at the health center, one of which is in the form of a web application prototype. in this study the researcher intends to develop a dental and oral health care application which is the main task of dental and oral therapists. The initial focus of the case is for pediatric patient services at the health center. The purpose of this study is to determine the prototype form of a web-based oral health care application as a guideline for pediatric patient services at the health center. This type of research method is research and development (R & D). Initial research was carried out with descriptive qualitative. The stages of the activity are preparing the material database, making web-based applications with the help of the IT team, then reviewing the material by experts. The results of the research Prototype of oral health care applications can be accessed online based on a website both through laptops, PC, tablets and handphone. The application contains patient data menu features, assessment, diagnosis, planning, implementation, evaluation, and documentation (printing). Expert review shows the majority of answers strongly agree and agree to 9 indicators of material suitability Conclusion A prototype of oral health care application for pediatric cases at the health center has been created under the name SIDALUT (oral health care documentation system).

INTRODUCTION

Oral health is one of the important indicators of body health that must be maintained. The government authorizes oral health care services to dental and oral therapists (TGM) according to Permenkes no 20 of 2016 (Kementerian Kesehatan RI, 2016). Care service is a program or activity carried out in a planned manner that has certain results in a particular group. Care services are provided directly to clients / patients to meet the needs of clients / patients, so that they can overcome the problems they are facing. In nursing / oral health care services, care is carried out in a complete manner, meaning that all oral health problems experienced by clients / patients can be resolved completely (Gultom & Dyah P, 2017).

The task of health workers is not only to carry out the health care process according to the standards set for service activities but also to document patient medical records (Erizal, 2016). Nursing medical record documentation is an integral component of quality nursing care. It is an important communication tool between nurses and other healthcare professionals. Documented evidence allows nurse managers to assess whether the care provided by individual nurses is professional, safe and competent. It also increases the visibility of nursing care activities. In addition, nursing records can be used as legal evidence in the event of a lawsuit. For this reason, nursing documentation should be systematically implemented and maintained (Amalia et al., 2018).

The high level of service to patients means that not all documentation can be done by officers optimally, especially when the documentation/recording is done manually. When assessing a patient, a

nurse analyzes data as a basis for diagnosing a patient's illness, often nurses need time to conduct an assessment and analyze data based on documents / instruction books (Erizal, 2016).

Dental and oral therapists are required to record their health care activities, also called documentation (Kementerian Kesehatan RI, 2016). The government has encouraged the use of electronic medical records (Kementerian Kesehatan RI, 2022). Current conditions show problems with the current method of documenting dental health care services because it still uses manual methods (Harapan et al., 2022).

The results of researchers' observations in the field show obstacles in the process of filling out oral health care documentation experienced by students participating in the PKL Dental Health Department of the Poltekkes Kemenkes Jakarta I at the puskesmas in the depok city area. The problems encountered were that participants did not understand or forgot how to write information statements in accordance with the concept of dental hygienist darby & walsh, students stated that they did not have a dental hygienist darby & walsh textbook as a guide, and it was impractical to use the textbook because of the thick pages of the book and in a foreign language. Therefore, a more effective and efficient tool is needed as a reference / guideline by students and TGM at the health center, one of which is in the form of a web application prototype.

The problem that exists is that there is no specific website application that is directly related to the dental and oral health care process of a dental therapist and mulu. The application for dental clinic services at Sungai Bilu Health Center in East Banjarmasin is related to patient registration management, recording and reporting of medical dentistry (Muharir, 2021) while the personal dental health care application focuses on patient dental health education.

Therefore, in this study, the researcher intends to develop an oral health care application which is the main task of dental and oral therapists. The initial focus of the case is for the service of pediatric patients at the health center.

METHOD

This research is a development research using the approach and type of research and development (R & D). This research is descriptive qualitative. The stages in this study are compiling a database of dental health cases of pediatric patients at the puskesmas obtained from trusted references and discussions with practitioners. The database that has been compiled will be made into an oral health care application with the help of the IT team. The application that has been made is then reviewed by experts who come from dental and oral therapist lecturers and dental and oral therapist practitioners.

RESULT

The web-based oral health care application prototype as a guideline for pediatric patient services at the health center is named SIDALUT which stands for oral health care documentation system. The SIDALUT application can be accessed online based on a website either through a laptop, PC, tablet and cellphone.

This application trial uses google chrome by typing in the following demo link browser URL address: https://www.raai.expert/rekam. Description of the operational display of the application as follows.
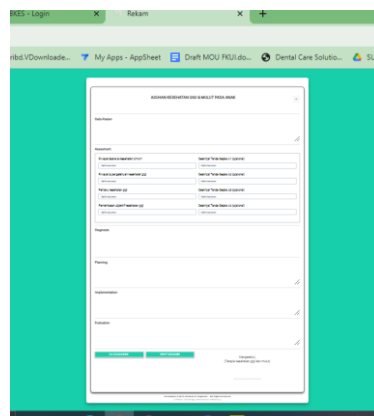

Figure 1. view of the application main page

Figure 1 shows the appearance of the entire main long feature menu of the application which refers to the stages of implementing the oral health care process by dental and oral therapists, namely patient data, assessment, diagnosis, planning, implementation, and evaluation.

Figure 2. display of patient data menu features

Figure 2 shows the display of the patient input menu feature. Users can type in patient data according to the indicators of each health center's health facility questions, the patient data menu column can be widened to facilitate inputting and clarify the display.

Figure 3. display of assessment menu features

Figure 3 shows the display of the assessment menu feature. Users can type in the findings of signs/symptoms of their assessment results in the columns of the types of assessments carried out, namely social & general health history, dental health history & knowledge, dental health behavior and dental health objective examination. Each type of assessment has an additional data input column, namely the description of signs/symptoms which is optional (may be filled in/not filled in as needed).

Figure 4. display of the autodetect feature of the assessment menu

Figure 4 shows the display of the word autodetect feature inputted in the assessment type column. When the user enters several prepositions from the sentence of signs/symptoms in the type of assessment that he wants to input, the system will autodetect and offer relevant keywords with the aim of making typing easier.
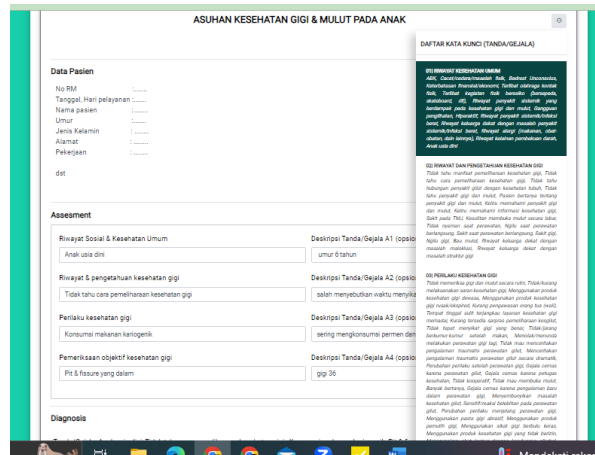
Figure 5. Keyword feature database for assessment menu

Figure 5 shows the keyword database for the assessment menu. Users can view the keyword database set for word input for each type of assessment column by clicking on the wheel logo on the top right of the application page. Keywords are signs/symptoms of assessment cases found in oral health care services for pediatric patients at the health center.
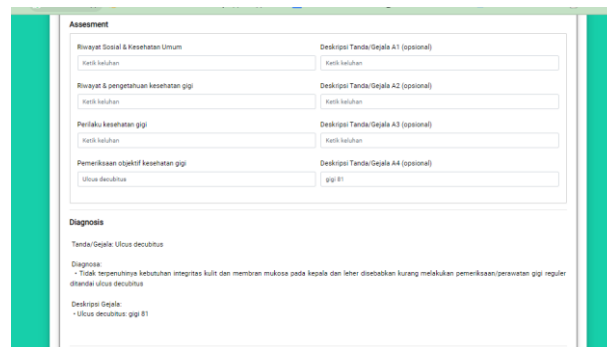

Figure 6. Auto-analysis feature of oral health care mono-diagnosis

Figure 6 shows the auto-analysis feature of mono-diagnosis of oral health care. Based on the keywords entered by the user in the assessment column, then by clicking "click diagnosis" the application will analyze and display a single narrative of oral health care diagnosis with the formulation of unmet needs, causes, signs/symptoms and symptom descriptions (optional).
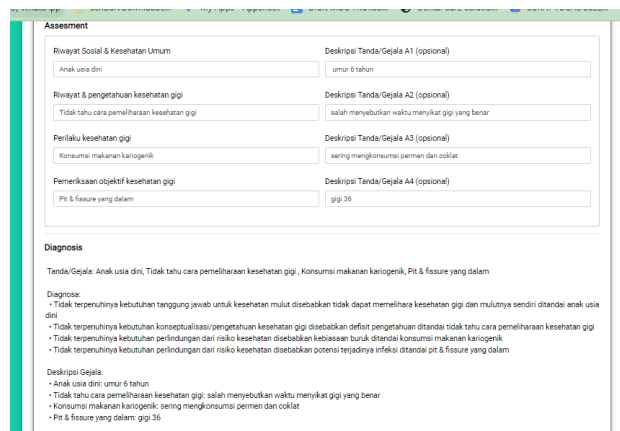

Figure 7. Oral health care auto-analysis multiple-diagnosis feature

Figure 7 shows the auto-analysis feature of mono-diagnosis of oral health care. Based on the keywords entered by the user in all assessment fields, by clicking "click diagnosis" the application will analyze and

display a narrative of multiple diagnoses of oral health care with the formulation of unmet needs, causes, signs/symptoms and symptom descriptions (optional).

Figure 8. Oral health care planning feature

Figure 8 shows the oral health care planning feature. Users can type in the oral health care planning narrative according to the care diagnosis, agreement with the patient and the conditions of each health center. The planning column can be expanded to facilitate inputting and clarify the display.

Figure 9. Oral health care implementation feature

Figure 9 shows the oral health care implementation feature. Users can type in the oral health care implementation narrative according to the care planning and conditions of each health center. The implementation column can be widened to facilitate inputting and clarify the display.

Figure 10. Oral health care evaluation feature

Figure 10 shows the oral health care evaluation feature. Users can type in the oral health care evaluation narrative according to the implementation of care and the conditions of each health center. The evaluation column can be widened to facilitate inputting and clarify the display.
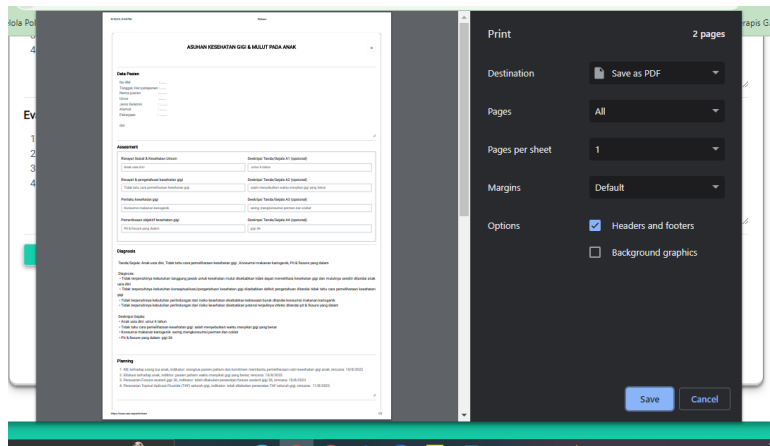
Figure 11. Oral health care documentation feature
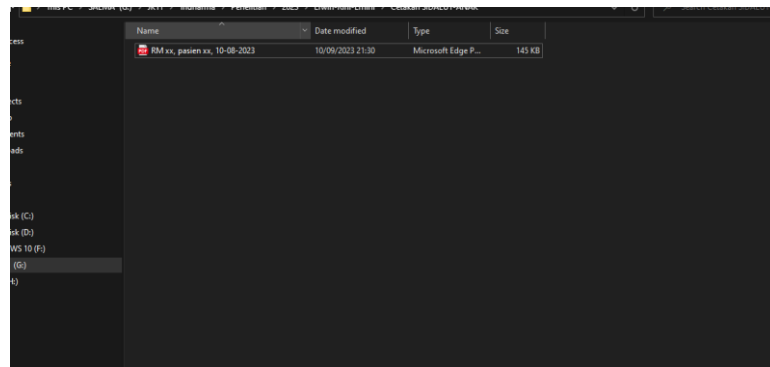
Figure 12. Oral health care documentation feature

Figures 11 & 12 show the oral health care documentation feature. Users can click "print document" on the bottom page of the application then the record of the dental and oral health care process for pediatric patients that has been written will become a softfile *pdf document stored on the local drive of the PC/tablet/handphone. The document can also be printed directly into hardcopy and has been equipped with a column to affix the signature of the dental and oral therapist.

Material expert consultation/review

Consultation was carried out with 2 experts in oral health care by providing applications to review the material and then filling out a questionnaire with an answer scale: strongly agree, agree, neutral, disagree and strongly disagree. The results of the review obtained the following results:

Table 1. The results of the review of the Prototype of the web-based oral health care application as a guideline for pediatric patient services at the health center by material experts.

Indicators of material review	Expert-1 Lecturer in oral health care services & board of DPP PTGMI (Indonesian dental and oral therapist association)	Expert-2 Dental and oral practitioner / therapist & board of DPP PTGMI (dental and oral therapist association of Indonesia)
1. The application will be useful for dental and oral health care for pediatric patients at the health center	Strongly agree	Agree
2. The systematic parts of the application are suitable for dental and oral health care services for pediatric patients at the puskesmas	Strongly agree	Agree

3. The social and general health history assessment materials are appropriate for pediatric dental and oral health care services at the health center	Strongly agree	Agree
4. Dental health history & knowledge assessment materials are appropriate for pediatric dental and oral health care services at the health center	Strongly agree	Agree
5. Dental health behavior assessment materials are appropriate for pediatric dental and oral health care services at puskesmas	Strongly agree	Agree
6. The dental health objective examination assessment materials are suitable for pediatric dental and oral health care services at health centers	Strongly agree	Agree
7. The material on diagnosis of needs is suitable for dental and oral health care services for pediatric patients at health centers	Strongly agree	Agree
8. Cause diagnosis materials are appropriate for pediatric dental and oral health care services at the health center	Strongly agree	Agree
9. Sign/symptom diagnosis materials are appropriate for pediatric dental and oral health care services at the health center	Strongly agree	Agree

Table 1 shows the results of the review of the web-based oral health care application prototype as a guideline for pediatric patient services at the health center by material experts, the results show that expert-1 gave all answers "strongly agree" on 9 material review indicators, while expert-2 gave answers "agree" on 9 material review indicators.

DISCUSSION

The results of the application display review Figure-1 show that the application contains 6 main menu features, namely patient data, assessment, diagnosis, planning, implementation and evaluation. These menus represent the oral health care process which is the main task of dental and oral therapists. According to Darby & Walsh (2014) oral health care can be defined as a process using a systematic approach in dental care services the care process is carried out in stages : assessment, dental health care diagnosis, planning, implementation and evaluation

The results of the application display review in Figure-2 show the patient data feature. Patient data is useful for writing the demographic identity of the patient being served such as medical record number, patient name, date and day of service, gender, age and other data. Data can be typed in by dental and oral therapists according to the demographic data format applied at each health center. The same format is not made because each health center may have different demographic data format standards according to their respective policies. According to Nurrahma et al., (2022) the menu in the electronic medical record system varies with each health worker, while according to Dwijayanthi et al. (2020) there is still medical record data that has different information in the same medical record book.

The results of the application display review in Figure 3,4,5 show the assessment feature. The assessment menu contains a database of cases of dental and pediatric health care services for pediatric patients at the puskesmas. Dental and oral therapists only need to write keywords according to the database so that they can be inputted automatically in the menu. The assessment menu facilitates the findings of

assessment and examination results regarding social and general health history, dental health history and knowledge, dental health behavior and objective examination of dental health. The substance of the assessment is in accordance with the opinion of Mardelita et al., (2018) Assessment in the individual oral and dental care process identifies, recognizes problems, health and nursing needs of clients, both physical mental, social and environmental. Assessment is the first step of the nursing process by collecting accurate data from clients so that various problems will be known. The data you collect consists of objective data and subjective data. Objective data is data obtained through a measurement and examination using recognized (applicable) standards, such as the state of the oral cavity, dental hygiene, vital signs, etc. Subjective data is data obtained through a measurement and examination. While subjective data is data obtained from complaints submitted by patients, for example pain / pain, headaches, which are felt by patients, which make patients have to come to the clinic for treatment (Gultom & Dyah P, 2017)

The results of the application display review in Figures 6 & 7 show the diagnosis feature. The process of analyzing dental health care diangosa is carried out automatically based on the data input entered in the previous assessment menu. The diagnosis narrative formulated consists of 3 series of sentences, namely the narrative of unmet basic dental health needs, the narrative of related causes and the narrative of signs/symptoms that are the results of the assessment. The material is in accordance with the opinion of Darby & Walsh (2014) that dental hygiene diagnosis is the identification of unmet human needs among the eight needs related to dental health care and their causes as evidenced by signs and symptoms.

The review of the application display in Figures 8, 9 & 10 shows the features of planning, implementation and evaluation. The menu is an advanced care stage after establishing a care diagnosis. Menu features provide freedom for dental and oral therapists to write activity contents according to the conditions of each health center, different patient conditions and other relevant considerations because each care situation will differ in the types of planning, action and evaluation that may be encountered. According to Mardelita et al., (2018) planning is the determination of the types of dental nursing interventions that can be implemented (implemented) to address client problems and help clients achieve the fulfillment of their needs related to oral health. Implementation or implementation action applies all the plans that you have specifically designed to meet the needs of patients related to oral and dental health. Evaluation is the process for the success rate of these activities. The purpose of evaluation is to assess whether the treatment is in accordance with the treatment expected by the client and dental therapist. In oral health care, the purpose of evaluation is to determine the patient's health progress, assess the effectiveness, efficiency, and productivity of care measures that have been provided, and assess the implementation of oral health care.

The results of the application display review in Figures 11 and 12 show application features that can be documented. The results of filling in the care process notes that have been inputted can be saved into a softfile pdf document, then the document is also printed into a hardcopy document if needed by the dental and oral therapist. According to Darby & Walsh (2014) documentation is a complete and accurate record of all data collected, treatment planned and provided, recommendations, and other information relevant to client care. Oral therapists are required to document all other components of the dental health care process, namely, examination, dental hygiene diagnosis, planning, implementation, and evaluation. This documentation involves recording that is objective, accurate, concise, and legible.

The results of the material expert review in table-1 show that both material experts gave good review results with the majority of answers strongly agreeing and agreeing with regard to the substance of the material displayed on the application. The substance of the material consists of 9 indicators, namely the benefits of the application for dental and oral health care for pediatric patients at the puskesmas, the suitability of the systematic parts of the application with the dental and oral health care services for pediatric patients at the puskesmas, the suitability of social and general health history assessment material, the suitability of dental health history and knowledge material, the suitability of dental health behavior material, the suitability of dental health objective examination material, the suitability of unmet needs diagnosis material, the suitability of cause diagnosis material, and the suitability of signs and symptoms diagnosis material. The use of applications can be a media tool, namely practical guidelines by dental and oral therapists to facilitate the work of dental and oral health care for cases of pediatric patients at the health center. According to Hariyati (2022) The use of electronic-based nursing care documentation can improve patient safety and quality of care, increase the use of nursing planning according to standards, the way multidisciplinary team members interact according to service quality standards and better decision making. Meanwhile, research Rahmah et al. (2016) on the application of the NCP (nutrition care process) states that the application has benefits, namely, simplifying the care process, accelerating data processing and documenting care and automatically.

CONCLUSION

A prototype of oral health care application for pediatric cases at the health center has been created under the name SIDALUT (oral health care documentation system). The application can be run online and web-based. The application can be accessed using a PC, laptop, tablet and cellphone. The application service features contain the stages of implementing oral health care that must be carried out by dental and oral therapists, a database of signs/symptoms of case assessment findings in pediatric patients visiting the puskesmas, as well as an analysis of the formulation of the diagnosis of dental and oral health care for pediatric patients based on the inputted assessment data. The results of filling out the documentation at each stage of care in the SIDALUT application, if necessary, can be printed so that it can be used as evidence of documentation performance by dental and oral therapists. Expert review shows the majority of answers strongly agree and agree to 9 indicators of the suitability of oral health care material in the application.

It is recommended that the application be carried out further research, namely direct use in the conditions of direct dental health care service practice. The application is expected to be developed so that it can be used for the care process of all age groups of patients.

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