BEHAVIORAL FACTORS OF DENTISTS IN COMPLETING ELECTRONIC MEDICAL RECORDS: SCOPING REVIEW

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ABSTRACT
Ensuring comprehensive medical records is a crucial aspect of delivering effective healthcare in hospitals, with a particular focus on dental services. This research delves into the dynamics of the relationship between a dentist's behavior and the completeness of odontogram filling. The study focuses on a comprehensive analysis of performance expectations, effort expectations, social influence, and facilitating conditions. Through this examination, the goal is to positively influence dentist behavior, leading to improvements in the quality of odontography documentation. The findings aim to contribute valuable insights for enhancing dental practices. Adopting a qualitative research methodology with a scoping review approach, the investigation identifies various categories of dentist behavior in filling out electronic medical records. These categories are delineated based on the multifaceted aspects of performance expectations, effort expectations, social influence, and facilitating conditions. To augment the completeness of odontography filling, the research underscores the importance of considering the factors identified within these aspects. By addressing the nuanced interplay between these elements, interventions can be strategically designed to positively impact dentist behavior and, consequently, elevate the standard of odontography documentation. This research contributes valuable insights to the ongoing efforts aimed at refining the implementation of health services and ensuring meticulous medical record-keeping, particularly in the dental domain.

Keywords: performance expectations, effort, social influence, facilitating conditions, electronic medical records

INTRODUCTION
One important part of the implementation of providing health services to patients in hospitals is medical records. Every hospital agency is required to record all services provided to patients in a structured manner related to medical services (Alotaibi & Federico, 2017). Medical records are divided into 2, namely manual and electronic. Electronic medical records (RME) are a version of manual medical records that have become electronic, and move notes or forms written on paper into electronic form (Honavar, 2020). One part of RME is an odontogram sheet. Problems that often arise in filling out electronic medical records are that the filling process is often incomplete, and writing diagnoses by general practitioners and dentists is less specific. This problem often occurs when filling out an odontogram, resulting in the dentist not being able to write a complete diagnosis (Abdalmawla A. Ali, 2017).

An odontogram is data attached to a dental medical record which contains data about the number, shape, arrangement, restorations, dental prostheses, and so on. Odontogram data can also be a benchmark for whether an area has been successful in promoting dental and oral health in the surrounding community. The benefit of implementing this is that it can help other colleagues in taking action, can help in resolving legal, disciplinary, and ethical problems as well as for identification purposes if a patient experiences a disaster (Wardhana et al., 2022).

The use of RME is by government regulations Permenkes number 269/MENKES/PER/III/2008 in article 2 which contains "(1) Medical records must be made in
writing, complete and clear or electronically (2) The administration of medical records using electronic information technology is regulated further with its own rules. In the strategic plan contained in Minister of Health Regulation No. 21 of 2020 concerning the Strategic Plan of the Ministry of Health for 2020-2024 regarding medical records, it is stated regarding the use of RME.

Seeing the importance of complete odontogram data in electronic medical records for dentists, in the initial practice survey many dentists did not complete odontogram data in electronic medical records. This is of course related to the dentist's behavior as a user of a system in completing patient odontogram data. System usage behavior is influenced by the beliefs of someone who believes that using a system will help him gain performance benefits in his work. If odontogram filling in electronic medical records can be utilized properly, it is hoped that it can facilitate more efficient health services (Hidayat & Rifai, 2020).

Several experts have created many theories and studies regarding the acceptance of information technology in an organization. This research uses the Unified Theory of Acceptance and Use of Technology (UTAUT) model developed by (Venkatesh et al., 2012). It was found that this variable is one of the important variables related to the performance of the RME system, next, there are effort expectations (effort expectancy), the influence of people around or social (social influence), and conditions that provide facilities (facilitating conditions) including training, socialization, etc. The UTAUT model emphasizes that technological aspects, namely performance expectancy and effort expectancy, and management aspects, namely social influence and facilitating conditions, theoretically and empirically influence behavioral intention to use a system/technology (Venkatesh et al., 2012). So this research aims to analyze the behavior of dentists in filling out electronic medical records.

METHOD

The type of research used is literature review research where the author reviews journals and research that has been previously published. Literature review research is a type of research that focuses on the analysis and synthesis of research that has been previously published in the form of journals, articles, books, or other sources. The main purpose of literature review research is to understand the development of existing knowledge in a particular field, identify research trends, evaluate the research methods used, and look for weaknesses or gaps in previous research.

Keywords are one of the factors that play an important role in literature searches. Reitz (2012) states that a keyword is a prominent word or phrase that can be used as a search term to find listings that contain that keyword. in searching for literature are "Dentist Behavior", "Electronic Medical Record Completeness", "Outpatient Clinic", and others. Search database Apart from keywords, a very important thing in literature searches is the search database. After determining the keywords to be used, the next step is the place or database for searching research articles, which we can find in online journals contained in database journals. In searching for literature, the databases used by the author are Google Scholar, Sinta, Research Gate, Elsevier, PubMed, and others.

Inclusion criteria are the conditions that must be fulfilled by the article so that it can be used as data in the literature review, while exclusion criteria are indicators that when it is found
in the article, the article cannot be taken into the literature review process. The inclusion criteria in this study were: analysis of dentist behavior in filling out odontograms in outpatient clinics. Meanwhile, the exclusion criteria for this study were studies that did not discuss the analysis of dentist behavior in filling out odontograms in outpatient clinics. Synthesis is emphasized to obtain quality literature, in the literature selection process it is described step by step from the search results in the database. The following is a flow diagram for the synthesis of literature results.

![Figure 1. Synthesis Flow Diagram of Literature Results](image)

RESULTS AND DISCUSSION

From the systematic review that has been carried out, the following are the research results:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Researcher</th>
<th>Research Title</th>
<th>Research Method</th>
<th>Variable</th>
<th>Population</th>
<th>Research Results</th>
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<tbody>
<tr>
<td>1</td>
<td>(Al-Rayes et al., 2019)</td>
<td>The Adoption of the Electronic Health Record by Physicians</td>
<td>The research method uses quantitative cross-sectional</td>
<td>Independent variables: factors that influence system adoption and resistance to system change among doctors in Saudi Arabia's military medical complex</td>
<td>The main findings show that RME users differ significantly in several factors such as perceived usefulness, perceived convenience, social influence, and resistance to system change. In addition, age, work experience, and medical specialty are significantly related to the use of the RME system by doctors.</td>
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<td>2</td>
<td>Limna, Pongkasorn, Supaprawat</td>
<td>The UTAUT Model Explaining Intentions to Qualitative research methods</td>
<td>Intention to use telemedicine from the aspects of in-depth interviews were conducted</td>
<td></td>
<td></td>
<td>The four main dimensions of the UTAUT model (performance expectancy, effort expectancy, social influence,</td>
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<td>1</td>
<td>Pichakoon (2023)</td>
<td>Use Telemedicine Among Thai People During the Covid-19 Pandemic: A Qualitative Study</td>
<td></td>
<td>performance expectations, business expectations, social influence, and facilitating conditions</td>
<td>with six key informants to determine intentions to use telemedicine during the COVID-19 pandemic</td>
<td>and facilitating conditions) influence individuals’ intention to use telemedicine during the COVID-19 pandemic in Krabi, Thailand.</td>
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<td>3</td>
<td>(Vinta Aryanti Bintoro et al., 2022)</td>
<td>Evaluation Of Electronic Medical Record Format And Security System In Dental Clinic Of The General Hospital In Batam City</td>
<td>The research method uses cross-sectional observational descriptive techniques</td>
<td>Independent variable: Medical data</td>
<td>Medical record format and electronic medical record security system for the dental polyclinic at Batam City General Hospital</td>
<td>The research results show that the completeness of the electronic medical record format at Hospitals A and B is incomplete, namely patient identity, required medical data, odontogram, intra-oral examination, and treatment chart. Meanwhile, aspects of the security system that have not been met are the integrity aspect and the non-repudiation aspect.</td>
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<td>4</td>
<td>(Kencana et al., 2019)</td>
<td>Analysis of Medical Record Filling Completeness at InPatient Care Facility of X Hospital</td>
<td>Quantitative research methods</td>
<td>Independent variables: Knowledge, responsibility, coworker support</td>
<td>Director regarding hospital policy regarding medical records, PPA Officer, Medical Records Officer, and Case manager.</td>
<td>The results of this study stated that 100% of respondents understood the responsibility of filling out medical records, and knowledge and support had a positive influence on the completeness of medical records.</td>
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<td>5</td>
<td>(Yusuf et al., 2019)</td>
<td>The Completeness of Odontogram Filling Out by The Dentist in Semarang</td>
<td>Quantitative research methods</td>
<td>Independent variable: dentist</td>
<td>The research subjects were dentist graduates from 2015 to 2017. Subjects were selected based on information from PDGI.</td>
<td>The results of this study stated that 89% of respondents in the group who started practicing in 2016 and 2017 wrote incomplete odontograms. More female respondents did not fill out an odontogram than male respondents.</td>
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<td>6</td>
<td>(Rahmatiqa et al., 2020)</td>
<td>Kelengkapan Berkas Rekam Medis dan Klaim BPJS di RSUD M. Zein Painan</td>
<td>This research is research using analytical observation methods with a cross-sectional approach</td>
<td>Completeness of medical record files, BPJS claim</td>
<td>The population in this study were all medical record files using JKNKIS with a sample of 125 people</td>
<td>Medical record files were 66.4% complete and 33.6% incomplete, while BPJS claim approval was 60.8% and 39.2% disagreed. The conclusion is that there is a relationship between the completeness of medical records and BPJS claim approval</td>
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<td>7</td>
<td>Hasibuan (2020)</td>
<td>Faktor-Faktor Yang Mempengaruhi Keterlambatan Pengembalian Berkas Rekam Medis Rawat Jalan Di UPT Rumah Sakit Khusus Paru Tahun 2019</td>
<td>This research uses quantitative descriptive research methods</td>
<td>Factors, delays in returning medical record files</td>
<td>The population in this study were 15 officers involved in filling in medical records at a special lung hospital</td>
<td>The factors that most influence delays in returning medical record files and carrying out procedures that have been established at the hospital are returning medical record files no later than 1x24 hours. If the return of medical record files is delayed it will greatly affect the assembling, analysis, coding, indexing, filling, and reports</td>
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<td>8</td>
<td>(Erlindai, 2019)</td>
<td>Faktor Penyebab Keterlambatan Waktu Pengembalian Berkas Rekam Medis Rawat Inap Di RS Estomihi Medan Tahun 2019</td>
<td>This type of research uses descriptive research</td>
<td>Factors, causes of delays, medical record files</td>
<td>The subjects in this study consisted of a doctor, a nurse, and a medical records officer</td>
<td>Factors causing delays in returning inpatient medical records are caused by doctors who are late in filling out the complete medical record files, there is no special officer for returning inpatient medical records, and the distance from the inpatient installation to the medical record installation is quite far, resulting in delays in returning medical record files, inpatient to the medical records installation.</td>
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<td>9</td>
<td>(Lieskyantika, 2018)</td>
<td>Faktor Penyebab Keterlambatan Pengembalian Berkas Rekam Medis Rawat Inap Di RS Tk. II. dr. Soedjono Magelang</td>
<td>This research uses a descriptive method with a qualitative approach</td>
<td>Factors, causes of delays, medical record files</td>
<td>The sample in this study was 92 inpatient medical record files</td>
<td>Of the 92 inpatient medical record files that were incorrect, 63.04% of the inpatient medical record files were incorrect and 36.96% of the inpatient medical record files were medical record files that were returned on time. Factors causing delays in returning inpatient medical record files are the lack of accuracy and compliance of medical personnel in filling out inpatient medical record files and the absence of special officers to monitor the return of inpatient medical records.</td>
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<td>10</td>
<td>(Ulfa &amp; Widjaya, 2017)</td>
<td>Faktor-Faktor Yang Mempengaruhi Kelengkapan Rekam Medis Rawat Inap Dengan Menggunakan Diagram Fishbone Di Rumah Sakit Pertamina Jaya Tahun 2017.</td>
<td>This research uses a descriptive case study design</td>
<td>Factors, completeness of inpatient medical records, fishbone</td>
<td>The sample used was 56 inpatient medical records</td>
<td>The results of this study showed that completeness was found to be 74%. Factors that influence the completeness of medical records can be found by conducting observations and interviews, namely, insufficient/busy time to complete medical records, no sanctions applied, lack of socialization, implementation of filling out medical records not by standard operational procedures, quantitative analysis forms does not yet cover all components and funding for complete medical records is limited.</td>
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<td>11</td>
<td>(Nurliani &amp; Masturoh, 2017)</td>
<td>Analisis Kuantitatif Kelengkapan Dokumen Rekam Medis Rawat Inap Formulir Ringkasan Masuk Dan Keluar Periode Triwulan IV Tahun 2015</td>
<td>Quantitative Analysis</td>
<td>Completeness of Inpatient Medical Record Documents Entry and Exit Summary Forms for the Fourth Quarter of 2015 Quantitative using descriptive methods (123 entry and discharge summary forms)</td>
<td>A summary form of entry and exit at Ciamis District Hospital for the fourth quarter of 2015.</td>
<td>1. Patient identity 91.5%, 2. 84.5% authentication, 3. Important reports 50.2%, 4. Good record keeping 76.4%</td>
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## Behavioral Factors of Dentists in Completing Electronic Medical Records: Scoping Review

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<tr>
<td>13</td>
<td>(Nurhaidah et al., 2016)</td>
<td>Faktor-Faktor Penyebab Ketidaklengkaan Pengisian Berkas Rekam Medis Rawat Inap di Rumah Sakit Universitas Muhammadiyah Malang</td>
<td>This research uses a descriptive case study design</td>
<td>Factors, causes of incomplete medical record files</td>
<td>The samples used were 40 medical record documents</td>
<td>The results of interviews and observations found that there were no policies or SOP guidelines for filling out medical records, doctors' awareness of filling out medical records was lacking, there was no data on incomplete medical records, the monitoring and evaluation system for medical records was ineffective and the flow of inpatient medical record files was not by standards. As a solution to increase incompleteness in filling out medical records, namely by creating policies, guidelines, and SOPs regarding filling out medical records.</td>
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<td>14</td>
<td>(Abarca, 2021)</td>
<td>Analisa Faktor-Faktor Penyebab Keterlambatan Pengembalian Berkas Rekam Medis Pasienn Rawat Inap Ke Unit Kerja Rekam Medis Di Rumah Sakit Umum Muhammadiyah Ponorogo</td>
<td>This research uses descriptive qualitative methods</td>
<td>Factors causing delays in returning medical record files</td>
<td>The samples in this study were all medical record files for inpatients, 16 inpatient officers, and 1 medical records officer in the assembling department.</td>
<td>The results of this study determine the number of delays in returning medical record files from each inpatient room. Mas Mansyur room has a percentage of late returns of medical record files of 48%, Ahmad Dahlan room has a percentage of late returns of 64%, Siti Walidah room has a percentage of late returns of medical record files of 52%, Fahrudin room has a percentage of late returns of medical record files of 25%. Based on the percentage above, the Ahmad Dahlan room is most often late in returning medical record files.</td>
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<td>15</td>
<td>(Ahluwalia, 2016)</td>
<td>Faktor-Faktor Penyebab Keterlambatan Dokumen Rekam Medis Rawat Inap</td>
<td>This research uses a qualitative approach</td>
<td>Factors, delays in returning medical record documents</td>
<td>The subjects of this research were 2 assembly officers, 2 ward nurses, head of the medical records section. The object of this research is the process of returning</td>
<td>The results of this research were that 1.5% of documents were complete and on time, 80.45% of documents were complete and not on time, and 18.5% were corrected and not on time. The causes are human resources, lack of socialization of SPO, lack of completeness in filling out inpatient medical record forms.</td>
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Table 1. shows several studies that focus on various aspects related to medical records in the context of health services. The first study by Al-Rayes et al. (2019) regarding the adoption of Electronic Health Records (EHR) by doctors in Saudi Arabia used cross-sectional quantitative methods. Key findings suggest that EHR adoption is influenced by factors such as perceived usefulness, perceived convenience, social influence, and resistance to system change, as well as individual characteristics such as age, work experience, and medical specialty.

The second research by Limna, Pongkasorn, Supaprawat, and Pichakoon (2023) is a qualitative study regarding intentions to use telemedicine during the COVID-19 pandemic in Thailand. This research uses the UTAUT (Unified Theory of Acceptance and Use of Technology) Model to examine the factors that influence individuals' intentions to use telemedicine. The research results show that performance expectations, effort expectations, social influence, and facilitating conditions influence the intention to use telemedicine.

Furthermore, the third study by Vinta Aryanti Bintoro et al. (2022) evaluated the format and security system of the Electronic Medical Record (EMR) in the dental polyclinic at Batam City General Hospital. The results of this research indicate that there are deficiencies in the completeness of the EMR format and security aspects, such as integrity and non-repudiation.

The fourth study by Kencana et al. (2019) analyzed the completeness of filling out medical record sheets at the inpatient care facility at the Hospital. In the fifth study by Yusuf M, Setiawan S, and Kusuma ARP, it was found that the majority of dentists did not fill out odontograms completely, and there were differences between male and female dentists in this regard.

Furthermore, the sixth study by Rahmatiqa et al. (2020) studied the completeness of medical record files and BPJS claims at M. Zein Painan Regional Hospital. The results show that there is a relationship between the completeness of medical record files and BPJS claim approval. The seventh study by Hasibuan (2020) discusses the factors that influence delays in returning outpatient medical record files at a special lung hospital. The most important factor found was the return of medical record files that exceeded the specified time limit.

The eighth study (Erlindai, 2019) identified factors causing delays in returning inpatient medical record files at Estomihi Hospital in Medan, including delays in filling out complete medical record files by doctors and the distance between the inpatient installation and the medical record installation. The ninth study by Lieskyantika (2018) examined the factors that influence the completeness of inpatient medical records at Tk Hospital II. Dr. Soedjono Magelang. The results show that the lack of accuracy and compliance of medical personnel in filling out medical records is one of the main causes of incomplete completion on time.

The tenth research by Ulfa & Widjaya (2017) identified factors that influence the completeness of inpatient medical records at Pertamina Jaya Hospital. The results show that factors such as insufficient time, lack of sanctions, and lack of socialization influence the
completeness of medical records. In the eleventh study (Nurliani & Masturoh, 2017), a quantitative analysis of the completeness of inpatient medical record documents on the Entry and Exit Summary Form was carried out. The results show variations in the completeness of the documents.

The twelfth study by Desi Kurniawati and Astri Sri Wariyanti (2016) also examined the completeness of inpatient medical record documents, especially for patients diagnosed with Renal Colic. The results showed a high level of completeness in medical record documentation. The thirteenth study by Nurhaidah et al. (2016) examined the factors causing the incomplete filling in of inpatient medical record files at the Muhammadiyah University Hospital, Malang. The research results showed several factors, including the absence of policies, SOPs, doctor awareness, and an ineffective monitoring system.

The fourteenth study by Abarca (2021) tried to identify the causes of delays in returning medical record documents for inpatients at the Muhammadiyah Ponorogo General Hospital. The results show variations in the level of delay in returning medical record files from various inpatient rooms. Finally, the fifteenth study by Ahluwalia (2016) identified factors that cause delays in returning inpatient medical record documents. The results show that human resource factors, lack of socialization of SOPs, and filling out medical record forms that do not comply with standards are the main causes of these delays. In all these studies, it can be concluded that completeness and timeliness in managing medical records is a complex problem and can be influenced by several factors, including individual, social, and organizational factors.

Analysis of dentist behavior in filling out electronic medical record odontograms can be categorized based on aspects of performance expectations, effort expectations, social influence, and facilitating conditions. The research results show that the majority of dentists have a good understanding of the importance of complete odontogram filling in RME. They realized that odontograms were an important tool in planning patient care. With the odontogram filling system in RME, dentists expect that this will increase efficiency in making clinical decisions and provide better service to patients. Dentists in this study have recognized positive changes in aspects of clinical care since the implementation of the odontogram filling system in RME. They believe that filling in an odontogram can reduce the time needed to provide services. However, some dentists also highlighted the complexity of using the odontography system and stated that the system's appearance needed to be improved. Therefore, improvements in the appearance and ease of use of the system can increase the expectations of dentists' efforts in filling out odontograms in electronic medical records (Forrest, 2019).

Collaboration between dentists and support from top management is considered important in ensuring the complete completion of electronic medical record odontograms. Good relationships between colleagues in filling out electronic medical records also have a positive impact. Top management is involved in supervision and provides the necessary support. Praise and warnings from leadership also motivate dentists to complete electronic medical records. Therefore, social influence factors have an important role in encouraging the completeness of filling in electronic medical records (Kishore et al., 2014).

In the Facilitating Conditions aspect, dentists expect further training on RME filling. Although most feel that the equipment in the work unit is sufficient to support it, routine maintenance of the system and repairs if necessary are still needed (Nassar et al., 2020). The monitoring process carried out by management and routine evaluations are also factors that
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support the completeness of filling in electronic medical records. To improve dentists' behavior regarding the completeness of filling out electronic medical records, hospital management needs to consider the various factors that have been identified in this research. These include improvements to the appearance and ease of use of the odontography system, continued training for dentists, ongoing management support, and adequate equipment maintenance. Apart from that, recognition and incentives in the form of praise and warnings can also be additional motivation for dentists to increase the completeness of filling out electronic medical records (Pahlevi et al., 2021).

CONCLUSION
Analysis of dentist behavior in filling out odontograms can be categorized based on aspects of performance expectations, effort expectations, social influence, and facilitating conditions. So to increase the completeness of odontogram filling, various factors need to be considered. This includes improvements to the appearance and ease of use of the odontogram system, continued training for dentists, ongoing management support, and adequate equipment maintenance. Apart from that, recognition and incentives in the form of praise and warnings can also be additional motivation for dentists to increase the completeness of odontogram filling. In conclusion, understanding the factors that influence dentists' behavior in completing odontograms can help in designing appropriate strategies to improve clinical services to patients.

REFERENCES


