Incomplete Outpatient Medical Record Documentation Is Driven by Individual, Organizational, and Psychological Factors: Evidence from a Primary Healthcare Center

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ABSTRACT
Complete outpatient medical records are essential to ensure service quality, patient safety, and administrative efficiency in primary healthcare settings. However, incomplete documentation remains a persistent issue. This study aimed to analyze the factors contributing to incomplete outpatient medical record documentation at a primary healthcare center based on Gibson's performance theory, encompassing individual, organizational, and psychological factors, and to identify priority problems and improvement strategies. A qualitative study design was employed, with data collected through interviews, observations, documentation review, and brainstorming. Problem prioritization was conducted using the Urgency, Seriousness, Growth (USG) method. The findings revealed that incomplete documentation was influenced by multiple factors. At the individual level, limited work experience and lack of training in medical records were identified. Organizational factors included the absence of control cards, constraints in computer network systems, suboptimal implementation of Standard Operating Procedures (SOPs), and excessive workload beyond core job descriptions. Psychological factors involved the absence of sanctions for incomplete documentation and insufficient attention to detail among staff. Several improvement strategies were proposed, including routine rechecking of record completeness before submission, staff training and supervision, optimization of facility usage, budgeting for electrical system improvements, and regular dissemination and provision of SOPs in each service unit. In conclusion, incomplete outpatient medical record documentation is driven by interconnected individual, organizational, and psychological factors; therefore, comprehensive and targeted interventions are required to improve documentation completeness in primary healthcare settings.
Keywords: incompleteness; primary healthcare; medical records; urgency, seriousness, growth (USG)

INTRODUCTION
Medical records are files containing notes and documents regarding patient identity, examinations, treatments, procedures, and other services provided to patients [1]. Medical records must be completed accurately and clearly, either in paper-based or electronic form [2]. The completeness of medical record files aims to support administrative processes in improving the quality of healthcare services at primary healthcare centers [2]. In addition, complete medical records can serve as legal evidence, a tool for managing healthcare financing, a source for research and scientific development, and documentation for evaluating and improving service quality in healthcare facilities [3]. The completeness of medical records is also crucial for identifying patients' medical histories and previous examinations to support clinical decision-making for subsequent care [4].

However, in practice, incomplete medical record documentation is still frequently encountered, including in outpatient medical records at a primary healthcare center. Based on data collected from June 9–16, 2022, incomplete forms were identified in outpatient medical record files, as shown in Table 1. The overall incompleteness rate of outpatient medical record documentation was 8.2%, with 22 incomplete files out of a total of 267 incoming outpatient medical records. Interviews with medical record staff revealed that incomplete items included patient identity, examination date, examination results, and staff signatures.

Table 1. Data on incompleteness of outpatient medical record files

Date	Number of incoming files	Number of incomplete files	Percentage of incompleteness
June 9, 2022	36	2	5.6
June 10, 2022	37	5	13.5
June 11, 2022	37	2	5.4
June 13, 2022	33	3	9.1
June 14, 2022	53	3	5.7
June 15, 2022	30	4	13.3
June 16, 2022	41	3	7.3

Table 2. Data on incomplete items in outpatient medical record

Description	Frequency	Percentage
Medical record number	0	0
Patient name	0	0
Address	0	0
Occupation	0	0
Index number	0	0
Bpjs/spm number	0	0
Date of birth	0	0
Date and time of examination	0	0
Nursing documentation	3	13.6
Authentication	19	86.4

Based on Table 2, staff signatures (authentication) were the most frequently incomplete component in outpatient medical records, accounting for 86.4% of incompleteness, while incomplete nursing documentation accounted for 13.6%. These findings indicate that the completeness of form entries has not met the Minimum Service Standards (SPM), which require 100% completion of medical records within 24 hours after service delivery [5].

Incomplete outpatient medical record documentation has several implications, including reduced quality of medical records due to missing information [3]. Furthermore, based on interviews with medical record staff, incomplete files can hinder workflow, as records must be returned to the respective units or clinics for completion. Proper authentication and documentation are essential to avoid potential legal issues in the future. A study by Leonard & Saputra reported that authentication limited to signatures or initials without clearly written staff names can negatively affect the quality, completeness, and legal aspects of medical records [6].

Preliminary findings identified several contributing factors based on Gibson's performance theory. These include the lack of training or seminars on medical records among staff. As noted by Susanti (2013) in Nissa', staff participation in training programs, such as seminars, is expected to enhance experience, improve work ability, and ultimately increase performance [7]. In addition, computer facilities at the primary healthcare center frequently experienced technical errors, hindering patient identity searches during registration. Although Standard Operating Procedures (SOPs) for medical record documentation were available, their implementation was not optimal, as incomplete data entry persisted. Mirfat's study highlighted that resources and job design play a significant role in optimizing individual performance to achieve organizational goals

[8]. Another contributing factor was the absence of clear reward and punishment systems related to documentation completeness. Siregar et al. reported that motivation significantly influences individual performance [9].

This study aimed to analyze the factors contributing to incomplete outpatient medical record documentation at a primary healthcare center in Sumenep Regency using Gibson's performance theory, which includes individual factors (social level, experience, and training), organizational factors (resources, leadership, and job design), and psychological factors (motivation and attitudes). Additionally, the study sought to determine problem priorities using the Urgency, Seriousness, Growth (USG) method and to propose improvement strategies through brainstorming.

METHODS

This study employed a qualitative research design to explore the factors contributing to incomplete outpatient medical record documentation. The study was conducted at a primary healthcare center in Sumenep Regency, Indonesia, from June 2021 to July 2022. The research participants consisted of six healthcare personnel working in the outpatient unit, including two physicians, two nurses, and two medical record officers. Participants were recruited using purposive sampling, based on their direct involvement and experience in outpatient medical record documentation processes.

In line with qualitative research principles, this study did not define variables; instead, it focused on key domains derived from Gibson's performance theory as an analytical framework. These domains included individual factors (such as social background, work experience, and training), organizational factors (including resources, leadership, and job design), and psychological factors (such as motivation and attitudes). These domains guided data exploration and thematic interpretation rather than serving as measurable variables.

Data were collected through in-depth interviews to capture participants' perspectives and experiences, direct observations of documentation practices, document review of outpatient medical records to identify incomplete components, and brainstorming sessions to formulate potential solutions. The Urgency, Seriousness, Growth (USG) method was subsequently applied to prioritize identified issues, and the results of brainstorming were used to propose improvement strategies. To ensure trustworthiness, data validity was established through source triangulation and methodological triangulation by comparing information obtained from different participants and data collection techniques. Data analysis followed an iterative process consisting of data reduction, data display, and conclusion drawing.

RESULTS

In this study, the analysis of factors contributing to incomplete outpatient medical record documentation was conducted using Gibson's performance theory, which encompasses individual, organizational, and psychological factors.

Individual factors

Individual factors refer to the background characteristics of staff, which in this study were identified based on social level, work experience, and training among personnel involved in outpatient medical record documentation. Individual performance may be influenced by family background, social level, experience, and training [10].

Social level

Social level in this study refers to the educational attainment of staff working in the outpatient unit. Educational background represents the highest level of formal education completed, which contributes to behavioral change and performance improvement [7]. The findings indicated that the educational qualifications of outpatient staff were aligned with their respective professions: physicians held a bachelor's degree in medicine, nurses held a diploma in nursing, and medical record officers held a diploma in medical records. Interview results further suggested that educational background influences staff performance.

Work experience

Work experience refers to skills acquired through the duration of employment [11]. Previous research indicates that experience is often measured by length of service [12]. In this study, most staff had relatively long work experience; however, one staff member had only five months of experience. Most staff had more than two years of work experience, although a small proportion had limited experience (Table 3).

Training

Training is a process aimed at improving employees' skills and practical knowledge to enhance performance [13]. In this study, training refers to participation in medical record–related training programs. The findings showed that most medical personnel had not attended training on medical records, whereas medical record officers had participated in such training or seminars.

Table 3. Length of service of outpatient unit staff

No.	Name	Position	Length of service
1	Respondent 1	General practitioner	5 months
2	Respondent 2	General practitioner	5 years
3	Respondent 3	Nurse	17 years
4	Respondent 4	Nurse	2 years
5	Respondent 5	Medical record officer	3 years
6	Respondent 6	Medical record officer	3 years

Organizational factors

Organizational factors in this study include resources, leadership, and job design within the outpatient unit, particularly related to medical record documentation.

Resources

Resources include infrastructure, human resources, and financial support that influence performance [14]. Facilities and infrastructure refer to tools and equipment that support healthcare workers in performing their tasks [4]. The available facilities included outpatient medical record forms, computers, and stationery, which were considered adequate. However, control cards for incomplete records were not available. Although computers were in good condition, network connectivity issues were frequently encountered.

Table 4. Human resources at the primary healthcare center

No	Category	Non-civil servants	Civil servants	Total
1	General practitioners	1	1	2
2	Nurses	25	12	37
3	Medical record officers	2	-	2

Human resources refer to personnel involved in medical record activities [15]. The findings indicated that staff capacity in terms of education met regulatory standards, and most staff had sufficient work experience. However, participation in medical record training remained limited, particularly among medical personnel. While the number of staff was generally adequate, some reported being overwhelmed during peak patient visits or when colleagues were absent (Table 4).

Financial resources refer to budget allocation supporting service delivery [16]. The study found that funding for infrastructure was available; however, no specific budget was allocated for staff training on medical record documentation.

Leadership

Leadership refers to non-coercive influence used to motivate individuals to achieve goals [10]. In this study, leadership was reflected through performance evaluation. Regular evaluations of incomplete medical record documentation were conducted during monthly quality meetings and biannual internal audits. Feedback from leadership was consistently provided to staff regarding their performance [7].

Job design

Job design includes task distribution, procedures, and expected outcomes [8]. This study focused on job descriptions and Standard Operating Procedures (SOPs) related to outpatient medical record documentation. Job descriptions were available for all staff, clearly outlining responsibilities related to documentation. Medical record officers routinely recorded incomplete files and returned them to the respective units, allowing 24 hours for completion. However, staff reported having additional responsibilities beyond their primary roles, potentially affecting performance (Table 5). SOPs are structured guidelines developed to ensure consistency in routine processes [16]. SOPs for outpatient medical record documentation were available and had been disseminated during accreditation and updates. However, their implementation remained suboptimal, as incomplete documentation persisted.

Table 5. Job descriptions related to outpatient medical record documentation

No.	Profession	Job description
1	General practitioner	a. Provide outpatient medical services b. Analyze patient examination data to prepare medical records c. Complete medical records accurately, including ICD-10 diagnosis coding
2	Nurse	Document medical records accurately and completely, including diagnosis coding according to ICD-10
3	Medical record officer	Perform medical record services and registration tasks and coordinate with related programs according to procedures

Psychological factors

Motivation

Motivation refers to internal forces that drive individual behavior and performance [10]. The findings indicated that general motivation was provided annually in the form of awards, incentives, and facility support for all service units. However, no specific incentives or sanctions were implemented regarding the completeness of medical record documentation. Incomplete records were typically addressed through verbal reminders from medical record staff, which were perceived as having minimal impact on improving performance.

Attitude

Attitude is a learned predisposition influencing individual responses to situations [10]. In this study, staff generally demonstrated responsiveness by completing incomplete records within 24 hours after being returned. However, some records remained incomplete, indicating insufficient discipline and attention to documentation tasks.

Prioritization of problems using the USG

The Urgency, Seriousness, Growth (USG) method was used to prioritize identified problems by assigning scores on a scale of 1–5 for each criterion. Problems with the highest total scores were considered top priorities. The ranking results are presented in Table 6. The top three priority problems were lack of attention to detail, computer network issues, and suboptimal SOP implementation.

Table 6. USG ranking results

No.	Problem	Score	Ranking
1	Limited work experience among some medical staff	45	VII
2	Lack of training in medical record documentation	48	V
3	Absence of control cards for incomplete records	46	VI
4	Computer network instability	57	II
5	Insufficient staff during peak patient visits	51	IV
6	Lack of budget for training	43	VIII
7	Additional workload beyond primary job descriptions	46	VI
8	Suboptimal implementation of SOPs	52	III
9	Lack of attention to detail in documentation	59	I
10	Absence of punishment for incomplete documentation	46	VI

Development of improvement strategies

Improvement strategies were developed through brainstorming sessions involving participants and researchers. These discussions aimed to generate feasible solutions for the prioritized problems. The proposed improvement plans are presented in Table 7. The brainstorming results indicate that these strategies may serve as practical alternatives to address the underlying causes of incomplete outpatient medical record documentation.

Table 7. Proposed improvement strategies

No.	Problem	Improvement Plan
1	Lack of attention to detail	a. Conduct routine rechecking of records before submission b. Provide guidance, supervision, and training
2	Computer network instability	a. Reduce use of high-power electrical equipment b. Allocate budget for electrical system improvements
3	Suboptimal SOP implementation	a. Conduct regular guidance on roles and SOPs b. Disseminate SOPs routinely c. Provide SOP documents in each service unit

DISCUSSION

Medical record completeness, according to Huffman, refers to the review of medical record content related to documentation, services, and the assessment of record completeness. Medical records must be completed promptly after patient care is provided. Medical records must be documented in written or electronic form in a complete and clear manner [1]. However, in practice, incomplete medical record documentation is still found in healthcare facilities, including a primary healthcare center in Sumenep Regency.

The contributing factors to incomplete outpatient medical record documentation were analyzed using Gibson's performance theory, encompassing individual, organizational, and psychological factors. Following the identification of these factors, problem prioritization was conducted using the USG method, and improvement strategies were developed through brainstorming.

From the individual perspective, educational background (social level) of outpatient staff was appropriate for their respective professions and did not significantly influence documentation performance, although higher education levels are generally associated with improved performance [14]. Work experience among most staff met the minimum standard and was found to positively influence performance [17], although some studies suggest that completeness of documentation is more related to responsibility than tenure [3]. Training participation, however, remained limited, particularly among medical staff, despite evidence that training significantly enhances competence and performance [7,13].

From the organizational perspective, most facilities were available; however, technical issues such as unstable computer networks and the absence of control cards hindered performance. Adequate infrastructure has been shown to improve service quality [8], while resource limitations may negatively affect staff performance [18]. Human resources were generally sufficient in number and capacity, although workload increased during peak service times. Training-related budget constraints further limited staff development opportunities, despite the recognized importance of training in improving workforce competence [20]. Leadership through regular evaluations was implemented effectively, providing feedback to staff and supporting performance improvement [7].

Regarding job design, job descriptions were clearly defined but often accompanied by additional responsibilities beyond core duties, potentially affecting performance outcomes [12]. Standard Operating Procedures (SOPs) were available but not optimally implemented, partly due to limited and infrequent dissemination. Insufficient SOP socialization has been associated with incomplete documentation practices [3].

General motivation was provided through incentives and recognition; however, no specific reward or punishment system related to documentation completeness was implemented. Motivation plays a critical role in influencing performance, and lack of targeted incentives may reduce staff compliance [16,21]. Staff attitudes also contributed to incomplete documentation, particularly during high patient volumes, when reduced attention to detail led to errors. Training and supervision are essential to improve both skills and work attitudes [18].

A total of ten problems were identified across the three domains. Based on USG, the top three issues were lack of attention to detail among staff, computer network instability, and suboptimal SOP implementation. Brainstorming results suggested several improvement strategies, including routine rechecking of records, provision of training and supervision, optimization of infrastructure, and regular SOP dissemination.

In addition to the USG method used in this study, alternative prioritization approaches may be considered to enhance the robustness of problem analysis and decision-making. One such approach is the Difficulty–Usefulness Pyramid (DUP), which was introduced by Nugroho and colleagues as a method for selecting priority elements based on two key attributes: level of difficulty and level of usefulness. In this method, each problem or intervention is assessed using these attributes, and priorities are determined by arranging elements into a pyramid structure, where those with the most favorable combination of usefulness and feasibility are prioritized for action. This approach has been applied in various health-related contexts, including program planning and health promotion, demonstrating its practicality in identifying priority interventions efficiently [22-29]. Furthermore, Nugroho et al. developed an extension of this concept known as the *Quadrant of Difficulty–Usefulness (QoDU)*, which classifies problems or interventions into four quadrants based on their relative levels of difficulty and usefulness. This method enables a more visual and strategic analysis, allowing decision-makers to categorize interventions into priority groups such as high usefulness–low difficulty (quick wins) and high usefulness–high difficulty (strategic priorities). The QoDU method has been empirically applied in health education settings to determine priority improvements, demonstrating its usefulness as a simple yet systematic tool for prioritization [30-33].

Therefore, future research or quality improvement initiatives may benefit from combining multiple prioritization methods, such as USG, DUP, and QoDU, in order to obtain more comprehensive, context-sensitive, and actionable results in addressing incomplete outpatient medical record documentation.

CONCLUSION

Incomplete outpatient medical record documentation is primarily driven by low attention to detail, supported by organizational and system-related constraints; targeted interventions such as routine checking, training, and improved SOP implementation are required to address the issue. It is recommended to enhance staff capacity through regular training on medical records, implement routine SOP socialization, and allocate budget for improving supporting infrastructure to ensure optimal documentation practices.

Ethical consideration, competing interest and source of funding

-Ethical considerations were addressed prior to data collection. Ethical approval was obtained from the Ethics Committee of Politeknik Negeri Jember, as indicated by approval number 714/PL17.4/PG/2022. All participants were informed about the purpose of the study, and confidentiality and anonymity were maintained throughout the research process.
-There is no conflict of interest related to this publication.
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