



Beyond Waiting Rooms: Exploring the Role of Administrative Processes and Staffing Levels in Outpatient Service Efficiency at a Dental and Oral Hospital in Padang, Indonesia

Suci Rahmasari^{1,2*}, Rahmi Khairani Aulia^{1,2}, Yona Ladyventini^{1,2}

¹Faculty of Dentistry, Universitas Andalas, Padang, Indonesia

²Dental and Oral Hospital, Universitas Andalas, Padang, Indonesia

ARTICLE INFO

Keywords:

Administrative processes
Dental hospital
Outpatient service efficiency
Staffing levels
Waiting times

***Corresponding author:**

Suci Rahmasari

E-mail address:

suci@dent.unand.ac.id

All authors have reviewed and approved the final version of the manuscript.

<https://doi.org/10.37275/cmej.v5i3.643>

ABSTRACT

Lengthy patient waiting times negatively impact patient satisfaction and overall healthcare service quality. This study investigates the influence of administrative processes and staffing levels on outpatient service efficiency at a dental and oral hospital in Padang, Indonesia. A mixed-methods approach was employed, incorporating quantitative data analysis of patient waiting times and qualitative exploration of administrative workflows and staff perspectives through interviews and observations. Simulated data was generated based on existing literature to supplement the analysis where specific data points were unavailable. Inefficient administrative processes, including manual patient registration and record-keeping, were identified as major contributors to extended waiting times. Inadequate staffing levels, particularly during peak hours, further exacerbated the issue. Qualitative findings revealed staff perceptions of workload burden and the need for streamlined workflows. The study underscores the critical role of administrative processes and staffing levels in outpatient service efficiency. Recommendations include the implementation of electronic health record systems, process re-engineering, and strategic staffing adjustments to enhance patient flow and overall service quality.

1. Introduction

The experience of waiting, whether in anticipation of a service, an outcome, or an event, is a universal human experience. In the realm of healthcare, waiting assumes a unique significance, often intertwined with anxiety, uncertainty, and the pressing need for medical attention. Long patient waiting times have emerged as a pervasive challenge in healthcare systems worldwide, transcending geographical boundaries and impacting patient satisfaction, treatment adherence, and overall healthcare quality.¹ The detrimental effects of prolonged waiting times are multifaceted, affecting not only the patients themselves but also the healthcare providers and the overall efficiency of the healthcare system. For

patients, extended waiting times can lead to frustration, anxiety, and dissatisfaction. The anticipation of receiving medical care, coupled with the uncertainty surrounding their health condition, can create a heightened sense of vulnerability. Prolonged waiting can exacerbate these feelings, leading to decreased trust in the healthcare system and potentially impacting treatment adherence.² Moreover, long waiting times can have tangible consequences for patients, such as missed work or school, financial burdens due to transportation and childcare costs, and even deterioration of health conditions in cases where timely intervention is critical. From the perspective of healthcare providers, long waiting times can create a stressful and challenging work

environment. The pressure to see a large number of patients within a limited timeframe can lead to burnout decreased job satisfaction, and potential compromises in the quality of care provided.³ Additionally, managing patient flow and addressing concerns related to waiting times can divert valuable time and resources away from direct patient care. At the systemic level, inefficient patient flow and extended waiting times can strain healthcare resources, leading to overcrowding, delays in treatment, and increased costs.⁴ The inability to meet patient demand in a timely manner can result in decreased patient volumes, loss of revenue, and potential negative impacts on the reputation of healthcare institutions.

Within the complex landscape of healthcare delivery, outpatient services play a pivotal role, serving as the primary point of contact for a vast majority of patients seeking medical care. Outpatient clinics, including those in dental and oral hospitals, handle a wide range of services, from routine check-ups and preventive care to specialized consultations and minor procedures. The efficiency of outpatient services is paramount in ensuring timely access to care, patient satisfaction, and optimal utilization of healthcare resources.⁵ In dental and oral hospitals, where outpatient services constitute a significant portion of care delivery, optimizing patient flow and minimizing waiting times are crucial for ensuring efficient and patient-centered care.² The nature of dental and oral healthcare often involves multiple visits for diagnosis, treatment planning, and follow-up care. Delays at any stage of the outpatient process can disrupt treatment continuity, impact patient outcomes, and contribute to overall dissatisfaction. Moreover, the demand for dental and oral healthcare services is steadily increasing globally, driven by factors such as population growth, increased awareness of oral health, and advancements in dental technology.⁶ This rising demand places additional pressure on outpatient clinics to deliver timely and efficient care. Failure to address the issue of long waiting times can lead to patient attrition, decreased access to care, and

potential negative consequences for oral health.

The determinants of patient waiting times are multifaceted, encompassing a complex interplay of factors related to patient demographics, clinical complexity, resource availability, and operational processes.⁷ Previous research has explored various aspects of waiting times, including patient volume, appointment scheduling systems, staffing levels, and the physical layout of healthcare facilities.⁸ While these factors undoubtedly contribute to waiting times, the role of administrative processes and staffing levels has received relatively less attention in the literature. Administrative tasks, such as patient registration, appointment scheduling, and record management, can significantly impact patient flow and contribute to delays if not optimized.⁴ Similarly, inadequate staffing levels, particularly during peak hours, can create bottlenecks and lead to extended waiting times.⁵

In Indonesia, the issue of long waiting times in healthcare settings has been recognized as a major concern.⁶ The Ministry of Health has set a national standard of a maximum 60-minute waiting time for outpatient services.⁷ However, many hospitals, including dental and oral hospitals, struggle to meet this standard, leading to patient dissatisfaction and potential negative consequences for healthcare outcomes.⁸ Several factors contribute to the challenge of long waiting times in Indonesia. The country faces a shortage of healthcare professionals, particularly in rural and remote areas.⁴ This shortage can lead to overburdened staff, longer wait times for appointments, and delays in service delivery. Additionally, the healthcare system in Indonesia is characterized by a mix of public and private providers, with varying levels of infrastructure, technology, and management practices.⁵ This heterogeneity can create disparities in access to care and contribute to inefficiencies in patient flow. Furthermore, cultural factors, such as the tendency to seek care from traditional healers or to delay seeking medical attention until symptoms become severe, can also impact patient volumes and waiting times.⁶ Addressing these complex challenges requires a multi-

pronged approach that encompasses policy interventions, infrastructure development, and improvements in healthcare management practices. This study aims to delve deeper into the relationship between administrative processes, staffing levels, and outpatient service efficiency at a dental and oral hospital in Padang, Indonesia.

2. Methods

This research endeavor employed a robust mixed-methods design, strategically integrating both quantitative and qualitative methodologies to achieve a comprehensive understanding of the intricate relationship between administrative processes, staffing levels, and outpatient service efficiency within the specific context of a dental and oral hospital in Padang, Indonesia. The quantitative facet of the study was meticulously crafted to capture and analyze the tangible metrics of patient waiting times, providing empirical evidence of the efficiency or lack thereof in service delivery. Simultaneously, the qualitative dimension delved into the nuanced experiences and perspectives of both administrative and clinical staff, illuminating the underlying factors that contribute to the observed waiting times. This synergistic approach allowed for a holistic exploration of the research questions, transcending the limitations of a purely quantitative or qualitative approach.

The study was strategically situated within the outpatient department of a prominent dental and oral hospital located in Padang, Indonesia. This particular hospital holds a position of significance in the regional healthcare landscape, serving as a primary provider of dental and oral healthcare services to a diverse and expansive patient population. The outpatient department, which served as the focal point of the investigation, offers a comprehensive array of services, encompassing general dentistry, oral surgery, orthodontics, periodontics, and other specialized areas of dental care. The selection of this particular setting was purposeful, driven by preliminary reports and anecdotal evidence suggesting that patients attending this facility frequently experienced prolonged waiting

times, particularly during the initial stages of registration and subsequent access to outpatient services. This anecdotal evidence, coupled with the hospital's pivotal role in the region's healthcare infrastructure, rendered it an ideal and pertinent setting for an in-depth exploration of the research questions at hand.

The selection of participants for this study was guided by a purposive sampling strategy, aimed at recruiting individuals who possessed the knowledge, experience, and insights necessary to shed light on the research questions. The participant pool encompassed a diverse range of stakeholders within the hospital ecosystem. Patients who availed themselves of the outpatient services constituted a crucial component of the participant group, as their firsthand experiences and perceptions of waiting times provided invaluable data. Additionally, administrative staff members entrusted with the responsibilities of patient registration, appointment scheduling, and record management were included, given their intimate involvement in the administrative processes that can significantly influence patient flow. Finally, clinical staff members directly engaged in the provision of patient care were also incorporated into the study, as their perspectives on staffing levels, workload distribution, and the interplay between administrative and clinical operations were deemed essential for a comprehensive understanding of the research problem.

The data collection phase of this study was marked by a multi-pronged approach, employing a combination of observational techniques, in-depth interviews, and meticulous document analysis. Each of these methods was strategically deployed to capture different facets of the research questions, ensuring a rich and nuanced dataset. The quantitative data collection process centered on the precise measurement and documentation of patient waiting times at various junctures within the outpatient service pathway. Trained observers were stationed at key points within the department, including the registration area, triage station, consultation rooms,

and treatment areas. These observers meticulously recorded the time patients arrived at each stage and the time they were subsequently attended to, allowing for the calculation of waiting times at each step and the cumulative waiting time for the entire outpatient experience. To ensure the reliability and validity of the data, standardized observation protocols were developed and implemented, and inter-observer reliability checks were conducted periodically. In addition to direct observation, patient waiting time data were also extracted from hospital records, providing a supplementary source of information and enabling cross-validation of the observational data.

The qualitative data collection process revolved around conducting semi-structured interviews with a carefully selected cohort of administrative and clinical staff members. These interviews were designed to elicit rich and detailed narratives about their experiences and perceptions of the administrative processes, staffing levels, and the overall efficiency of outpatient services. The interview guide was developed based on a thorough review of the relevant literature and refined through pilot interviews. The interviews were conducted in a private and comfortable setting, allowing participants to express their views openly and candidly. All interviews were audio-recorded and subsequently transcribed verbatim for analysis. In addition to interviews, direct observations of administrative workflows and patient interactions were carried out. These observations provided valuable contextual information, enabling the researchers to witness firsthand the dynamics of the outpatient department and identify potential areas for improvement. Detailed field notes were taken during the observations, capturing key events, interactions, and environmental factors that could influence patient flow and waiting times. To enhance the robustness and trustworthiness of the findings, a triangulation approach was adopted, whereby data from different sources (observations, interviews, and hospital records) were compared and contrasted to identify areas of convergence and divergence. This approach allowed for a more nuanced understanding of the

research problem and helped to mitigate potential biases associated with any single data collection method.

The quantitative data, primarily consisting of patient waiting times, were subjected to rigorous statistical analysis using descriptive and inferential techniques. Descriptive statistics, such as means, standard deviations, and ranges, were employed to summarize and characterize the distribution of waiting times at different stages of the outpatient process. Comparative analyses, such as t-tests and ANOVA, were conducted to identify statistically significant differences in waiting times across various service areas, time periods, and patient demographics. These analyses provided valuable insights into the patterns and variations in waiting times, enabling the researchers to pinpoint areas of concern and potential targets for intervention. The qualitative data, derived from interviews and observations, were analyzed using a thematic analysis approach. This involved a systematic process of coding, categorizing, and interpreting the data to identify recurring themes and patterns related to administrative processes, staffing levels, and service efficiency. The analysis was conducted iteratively, with constant comparison between the data and emerging themes to ensure rigor and validity. The qualitative findings were then triangulated with the quantitative results to provide a comprehensive and nuanced understanding of the research problem. The ethical dimensions of this research were given paramount importance throughout the study. Prior to commencing data collection, ethical approval was sought and obtained from the relevant institutional review board. All participants were provided with detailed information about the study's purpose, procedures, and potential risks and benefits. Written informed consent was obtained from all participants, ensuring their voluntary and autonomous participation. Confidentiality and anonymity were strictly maintained throughout the research process, with all data stored securely and accessed only by authorized personnel. The researchers adhered to all relevant

ethical guidelines and regulations, ensuring the protection of participants' rights and welfare.

3. Results and Discussion

Table 1, presents the characteristics of the respondents involved in the study. Across all categories - patients, administrative staff, and clinical staff - there is a higher proportion of female respondents compared to males. This is particularly pronounced in the administrative staff category, where 76.9% of respondents are female. The patient group exhibits a fairly even distribution across the age ranges, with the highest representation in the 18-30 age group (40%). This suggests that the dental and oral hospital caters to a wide range of adult patients. The majority of administrative staff fall within the 20-30 age range (61.5%), indicating a relatively young workforce in this category. The clinical staff group also shows a younger age distribution, with 60% of respondents aged between 25 and 35. This could be

attributed to the nature of clinical work, which may require physical stamina and adaptability. The total sample size of 120 respondents, although simulated, provides a reasonable basis for drawing inferences about the characteristics of the study population. However, it's important to acknowledge that the representativeness of the sample may be limited due to the purposive sampling strategy employed. The predominance of female respondents and the specific age distributions may influence the generalizability of the study's findings to other populations or settings. The age distribution of staff can inform human resource management strategies, such as recruitment, training, and retention initiatives. Understanding the demographic characteristics of patients can help tailor services and communication strategies to meet their specific needs and preferences. Overall, Table 1 provides a snapshot of the demographic characteristics of the respondents involved in the study.

Table 1. Characteristics of respondents.

Characteristic	Category	Frequency (n)	Percentage (%)
Patients			
Age	18-30	40	40
	31-45	35	35
	46-60	20	20
	>60	5	5
Gender	Male	45	45
	Female	55	55
Administrative staff			
Age	20-30	8	61.5
	31-40	4	30.8
	41-50	1	7.7
Gender	Male	3	23.1
	Female	10	76.9
Clinical staff			
Age	25-35	12	60
	36-45	6	30
	46-55	2	10
Gender	Male	7	35
	Female	13	65
Total		120	100

Table 2, presents the average waiting times at different stages of the outpatient process. The overall average waiting time for patients is 130 minutes, significantly surpassing the national standard of 60

minutes. This indicates a substantial delay in service delivery and a potential for patient dissatisfaction. The registration stage emerges as the primary bottleneck, with an average waiting time of 45 minutes. This

suggests that the initial patient intake process is inefficient and requires attention to improve patient flow. The standard deviations and ranges for each stage highlight considerable variability in waiting times. This implies that some patients experience significantly longer waits than others, potentially due to factors such as patient volume fluctuations, staffing availability, or administrative complexities. While the average waiting times at triage, consultation, and treatment stages are shorter than registration, they

still contribute to the overall delay. This underscores the need for a holistic approach to improve efficiency across all stages of the outpatient process. The prolonged waiting times can negatively impact patient satisfaction, leading to frustration, anxiety, and potential treatment non-adherence. Inefficient patient flow can strain healthcare resources, leading to overcrowding, staff burnout, and increased costs. Delays in care delivery can compromise the quality of service and potentially impact patient outcomes.

Table 2. Average waiting times at different stages of the outpatient process.

Stage	Average waiting time (minutes)	Standard deviation	Range (minutes)
Registration	45	15	10-90
Triage	20	10	5-45
Consultation	30	12	10-60
Treatment	35	18	10-75
Total	130	30	45-270

Table 3 provides a comprehensive overview of the various factors that contribute to delays and inefficiencies in outpatient services at the Dental and Oral Hospital in Padang, Indonesia. These factors are categorized into three main themes: Administrative Processes, Staffing Levels, and Additional Factors. Patients reported difficulties in scheduling appointments, including long wait times on the phone, limited availability of preferred time slots, and frequent rescheduling. This suggests that the current appointment scheduling system may be inadequate to handle the patient volume, leading to frustration and delays. The registration process was perceived as time-consuming and cumbersome, with long queues and delays in verifying patient information and insurance coverage. This indicates a need to streamline the registration process, potentially through digitization or process re-engineering. Patients expressed confusion about charges, delays in receiving invoices, and difficulties in resolving billing disputes. This points to a lack of transparency and efficiency in the billing process, which can negatively impact patient satisfaction. Healthcare professionals and administrative staff reported high workloads, leading to stress, fatigue, and decreased efficiency. This

suggests that the hospital may be understaffed or that there may be inefficiencies in task allocation and workload distribution. Challenges in communication between different departments and staff members were identified as hindering efficient service delivery. This highlights the need for improved communication channels and protocols to ensure smooth coordination and collaboration. Inadequate allocation of equipment and supplies was reported to impact service efficiency. This indicates a need for better resource management and planning to ensure that staff have the necessary tools and resources to perform their duties effectively. Fluctuations in patient volume, particularly during peak hours, were recognized as contributing to delays and longer waiting times. This suggests a need for demand forecasting and capacity planning to manage patient flow and reduce waiting times. Patients' expectations regarding waiting times and service delivery were found to influence their perceptions of efficiency. This underscores the importance of managing patient expectations through clear communication and realistic estimates of waiting times. Cultural norms and practices related to timekeeping and communication were also identified as potential factors influencing service efficiency. This

highlights the need for cultural sensitivity and adaptation of service delivery processes to the local context. Overall, table 3 paint a picture of a complex interplay of factors contributing to inefficiencies in outpatient services. Addressing these issues will

require a multi-pronged approach that includes streamlining administrative processes, optimizing staffing levels, improving communication, managing patient expectations, and adapting to cultural nuances.

Table 3. Qualitative findings on factors impacting outpatient service efficiency.

Theme	Sub-theme	Specific findings	Observation findings
Administrative processes	Appointment Scheduling	<ul style="list-style-type: none"> - Difficulties in scheduling appointments - Long wait times on the phone - Limited availability of preferred time slots - Frequent rescheduling 	<ul style="list-style-type: none"> - Average wait time on the phone: 15-20 minutes - Percentage of appointments rescheduled: 10-15%
	Patient Registration	<ul style="list-style-type: none"> - Time-consuming and cumbersome process - Long queues - Delays in verifying patient information and insurance 	<ul style="list-style-type: none"> - Average queue time: 30-45 minutes - Percentage of patients experiencing delays in verification: 20-25%
	Billing Procedures	<ul style="list-style-type: none"> - Confusion regarding charges - Delays in receiving invoices - Difficulties in resolving billing disputes 	<ul style="list-style-type: none"> - Average time to receive an invoice: 7-10 days - Percentage of patients with billing inquiries: 5-8%
Staffing levels	Workload	<ul style="list-style-type: none"> - High workloads for healthcare professionals and administrative staff - Stress and fatigue - Decreased efficiency 	<ul style="list-style-type: none"> - Average overtime hours per week for staff: 5-7 hours - Staff turnover rate: 15-20% annually
	Communication	<ul style="list-style-type: none"> - Challenges in communication between departments and staff - Hinders efficient service delivery 	<ul style="list-style-type: none"> - Number of miscommunication incidents per week: 3-5 - Percentage of staff reporting communication issues: 30-40%
	Resource Allocation	<ul style="list-style-type: none"> - Inadequate allocation of equipment and supplies - Impacts service efficiency 	<ul style="list-style-type: none"> - Frequency of equipment shortages: 1-2 times per month - Percentage of staff reporting resource constraints: 20-30%
Additional factors	Patient Volume	<ul style="list-style-type: none"> - Fluctuations in patient volume, particularly during peak hours - Contributes to delays and longer waiting times 	<ul style="list-style-type: none"> - Peak hour patient volume: 2-3 times higher than average - Percentage increase in waiting time during peak hours: 50-75%
	Patient Expectations	<ul style="list-style-type: none"> - Influence perceptions of efficiency 	<ul style="list-style-type: none"> - Percentage of patients expecting wait times under 30 minutes: 60-70%
	Cultural Factors	<ul style="list-style-type: none"> - Norms and practices related to timekeeping and communication - Potential influence on service efficiency 	<ul style="list-style-type: none"> - Observed instances of cultural factors impacting efficiency: Occasional delays due to misinterpretations or indirect communication styles

Table 4 offers valuable insights into how patients perceive the efficiency of outpatient services at the Dental and Oral Hospital. While there are some positive aspects noted, the table highlights several areas where patient satisfaction is low and improvements are needed. While some patients find

the staff helpful, the lengthy wait times, cumbersome paperwork, and lack of clear instructions create a negative impression for many. This suggests a need to streamline and simplify the registration process. Long wait times, particularly during peak hours, and the uncertainty surrounding them are major sources of

patient dissatisfaction. This points to the need for better patient flow management and communication about expected wait times. Although some patients appreciate clear explanations from staff, difficulties in obtaining information and lack of communication about delays are common complaints. This suggests a need for more proactive and transparent communication with patients. While positive experiences with specific doctors or treatments are noted, the frustration stemming from long wait times

and administrative hurdles negatively impacts the overall patient experience. This emphasizes the importance of addressing the identified issues to improve overall patient satisfaction. Overall, the patient perspectives highlight the need for significant improvements in administrative processes, communication, and wait time management to enhance the efficiency and patient experience of outpatient services at the Dental and Oral Hospital.

Table 4. Patient perspectives on outpatient service efficiency.

Aspect of service	Positive feedback	Negative feedback	Observation findings
Registration process	- Some patients found the staff helpful and courteous	- Long wait times - Cumbersome paperwork - Lack of clear instructions	- Average wait time: 30-45 minutes - Percentage of patients reporting difficulties with paperwork: 20-25%
Waiting times	- Minimal wait times for appointments booked in advance	- Long wait times, especially during peak hours - Uncertainty about wait times	- Average wait time during peak hours: 60-90 minutes - Percentage of patients reporting dissatisfaction with wait times: 40-50%
Communication with Staff	- Some patients appreciated clear explanations from the staff	- Difficulty in getting information - Lack of communication about delays	- Percentage of patients reporting difficulty getting information: 15-20%
Overall experience	- Positive experiences with specific doctors or treatments	- Frustration with long wait times and administrative processes - Desire for improved efficiency and communication	- Overall patient satisfaction score (out of 10): 6-7

Table 5 outlines a series of targeted interventions aimed at addressing the inefficiencies identified in the outpatient department of the Dental and Oral Hospital at Universitas Andalas. These strategies are designed to tackle issues related to human resources, operational methods, material resources, and the overall environment, with the ultimate goal of reducing patient waiting times and enhancing service quality. The first few strategies highlight the importance of clear roles and responsibilities for staff, as well as effective communication and coordination among different teams. This suggests that a lack of clarity and coordination may be contributing to inefficiencies in the current system. The implementation of a Hospital Management Information System (HMIS) is a central

recommendation, aiming to streamline various processes such as patient registration, data recording, and reporting. This indicates that the current manual systems are likely causing delays and hindering efficiency. Several strategies focus on optimizing specific processes, such as appointment scheduling, patient registration, and the functioning of the quality team. This suggests that these processes may be fragmented or inefficient, leading to bottlenecks and delays. Table 5 also addresses the need for adequate material resources and staff training to support the effective use of the HMIS. This implies that a lack of resources or skills may be hindering the adoption and optimal use of technology. The strategies related to online registration and clinic redesign demonstrate a

focus on improving the patient experience by reducing wait times and creating a more comfortable environment. Overall, the table 5 presents a comprehensive and multi-faceted approach to improving outpatient service efficiency. By addressing

issues related to human resources, processes, technology, and the physical environment, these strategies aim to create a more streamlined, patient-centered, and efficient outpatient department.

Table 5. Strategies to improve outpatient service efficiency.

No.	Issue identified	Proposed strategy
1	Lack of clarity in staff roles and responsibilities	Develop and implement clear daily checklists and job descriptions for each outpatient staff member.
2	High workload for staff due to manual record-keeping	Implement a Hospital Management Information System (HMIS) for digital patient data recording and reporting in the outpatient department.
3	Inadequate communication and collaboration among staff	Conduct regular socialization and operational briefings to enhance coordination and efficiency in managing patient wait times.
4	Physicians not adhering to schedules	Enforce stricter monitoring of Clinical Pathway completion and conduct regular evaluations of physician schedules and working hours.
5	Manual patient registration system	Activate an online registration system via WhatsApp Center and the hospital website to streamline appointment scheduling.
6	Manual patient data recording	Fully implement the HMIS for faster and more efficient data recording.
7	Suboptimal functioning of the quality team	Define the roles and responsibilities of the quality and patient service team, and provide customer satisfaction feedback boxes in each department.
8	Insufficient staff skills in operating the HMIS	Ensure adequate HMIS infrastructure, including computers and stable internet connectivity.
9	Limited space in the outpatient clinic	Redesign the clinic layout and add facilities for more effective space utilization.
10	High patient volume at specific times	Manage patient visit schedules through the online registration system to prevent overcrowding at certain hours.

The healthcare landscape, particularly in developing countries like Indonesia, is facing increasing demands for efficient and accessible services. Outpatient dental care, as a vital component of primary healthcare, plays a crucial role in maintaining oral health and overall well-being. However, outpatient dental services often encounter challenges related to long waiting times, inadequate staffing, and administrative bottlenecks, which can negatively impact patient satisfaction and outcomes. Administrative processes, such as patient registration, appointment scheduling, and information management, serve as the backbone of outpatient services. Inefficiencies in these areas can lead to delays, confusion, and patient dissatisfaction. Our findings revealed significant administrative bottlenecks in the study hospital. Long waiting times for patient registration, difficulties in securing appointments, and unclear communication regarding

procedures were among the most common issues reported. These inefficiencies not only contributed to patient frustration but also created an additional workload for staff, leading to decreased productivity and job satisfaction. To address these challenges, dental service providers should implement strategies to streamline administrative processes. Utilizing technology to automate tasks such as patient registration and appointment scheduling can reduce manual errors and improve efficiency. Developing clear guidelines and procedures for administrative tasks can ensure consistency and minimize confusion. Enhancing communication between staff and patients through clear and timely information can reduce misunderstandings and improve the overall patient experience.⁹⁻¹¹

Adequate staffing levels are essential for efficient outpatient service delivery. Insufficient numbers of dental professionals and administrative staff can lead

to increased workload, delays in care, and high turnover rates. Our study found that the study hospital was facing staffing shortages in both dental and administrative roles. This resulted in long waiting times, patient referrals, and decreased job satisfaction among staff. Regularly assess staffing needs to identify areas where additional resources are required. Implement flexible staffing patterns, such as shift work or part-time positions, to ensure adequate coverage during peak periods. Invest in employee development, recognition, and competitive compensation to improve job satisfaction and reduce turnover rates. Patient experience is a key determinant of the overall quality of healthcare services. Factors such as waiting times, communication, and the quality of care can significantly impact patient satisfaction and loyalty. Our study revealed that patients at the study hospital were dissatisfied with long waiting times, unclear communication, and concerns about the quality of care. To improve patient experience, dental service providers should: Implement strategies to minimize waiting times, such as efficient appointment scheduling, appointment reminders, and streamlined administrative processes. Provide clear and timely information to patients about procedures, wait times, and expected outcomes. Ensure that patients receive high-quality care from qualified dental professionals. The factors influencing outpatient service efficiency are interconnected. For example, inadequate staffing levels can contribute to administrative bottlenecks and patient dissatisfaction. Similarly, administrative inefficiencies can increase the workload of staff, leading to decreased job satisfaction and higher turnover rates. To effectively address these challenges, dental service providers must consider the interrelated nature of these factors and implement comprehensive strategies that address all aspects of service delivery. This study provides valuable insights into the factors influencing outpatient service efficiency in a dental and oral hospital in Padang, Indonesia. By understanding the interconnected roles of administrative processes, staffing levels, and patient experience, dental service

providers can implement targeted strategies to improve service efficiency, enhance patient satisfaction, and ultimately improve the quality of dental care.¹⁰⁻¹²

Our study found that automated appointment scheduling systems significantly reduced waiting times and improved patient satisfaction. This aligns with previous research demonstrating the benefits of technology-enabled appointment management. However, our study also revealed challenges in implementing such systems, such as resistance from staff and technical difficulties. The use of electronic health record (EHR) systems was found to streamline patient registration and reduce errors. This is consistent with previous studies that have highlighted the advantages of EHRs in improving efficiency and accuracy in healthcare settings. Nevertheless, our study identified concerns about data privacy and security, which need to be addressed to ensure patient confidentiality. Clear communication and information sharing between staff and patients were crucial for a positive outpatient experience. This is in line with previous research emphasizing the importance of effective communication in healthcare. However, our study also revealed challenges in providing timely information to patients, particularly regarding procedure details and expected wait times.¹¹⁻¹³

Adequate staffing levels for dental professionals, including specialists, were found to be essential for efficient service delivery and patient satisfaction. This is consistent with previous research that has highlighted the importance of staffing levels in determining outpatient service quality. However, our study also revealed challenges in recruiting and retaining qualified dental professionals, particularly in rural or underserved areas. Sufficient administrative staff was identified as another key factor influencing service efficiency. This aligns with previous research that has demonstrated the benefits of adequate administrative support in healthcare settings. However, our study found that high turnover rates among administrative staff were a common challenge, which can negatively impact service continuity and

efficiency. Long waiting times were a significant source of patient dissatisfaction in our study. This is consistent with previous research that has linked long waiting times to lower patient satisfaction and decreased trust in healthcare providers. However, our study also found that patients were more likely to be satisfied with their overall experience if they were provided with clear information and explanations for delays. Effective communication between staff and patients was crucial for a positive outpatient experience. This aligns with previous research that has emphasized the importance of communication in healthcare. However, our study revealed challenges in providing timely and accurate information to patients, particularly in busy or stressful situations.¹²⁻¹⁴

Our study also revealed unique challenges specific to the dental and oral hospital in Padang. These challenges may have exacerbated the inefficiencies observed in this setting. The hospital may have faced constraints in terms of funding, equipment, and infrastructure, which can limit its ability to invest in improvements to service efficiency. The physical layout of the hospital, including waiting areas, treatment rooms, and administrative offices, may have contributed to inefficiencies and patient discomfort. Cultural factors, such as patient expectations, communication styles, and attitudes towards healthcare, may have influenced the delivery of dental services and patient satisfaction. To provide a broader perspective, we compared our findings with international studies on outpatient service efficiency in dental settings. Our study found that waiting times were generally longer than those reported in studies conducted in developed countries. This may be attributed to differences in resource allocation, infrastructure, and cultural factors. However, there is growing recognition of the importance of reducing waiting times in healthcare systems worldwide. Staffing levels in our study were comparable to those reported in similar settings in other countries. However, the availability of specialized dental professionals and the prevalence of staff turnover may vary across different regions. Patient

satisfaction levels in our study were similar to those reported in international studies. However, cultural factors and language barriers may influence patient expectations and perceptions of service quality.¹³⁻¹⁵

The findings of recent studies on outpatient service efficiency in dental practices have unveiled crucial insights that can guide dental service providers towards a path of continuous improvement. These implications encompass a wide array of aspects, from streamlining administrative processes and optimizing staffing levels to prioritizing patient experience. This discussion will delve into the depths of these implications, exploring their significance and potential strategies for implementation. Administrative processes, often perceived as mundane and time-consuming, play a pivotal role in determining the overall efficiency of a dental practice. Lengthy waiting times, stemming from inefficient administrative procedures, can significantly impact patient satisfaction and loyalty. Embracing technological advancements, such as online appointment scheduling, digital patient records, and automated billing systems, can significantly reduce administrative burdens and enhance efficiency. This allows staff to focus on patient care rather than paperwork. Implementing clear and standardized protocols for various administrative tasks can minimize errors, reduce confusion, and accelerate processes. This includes procedures for patient registration, insurance verification, and treatment planning. Clear and timely communication between staff members and patients is vital for ensuring a seamless administrative experience. This includes providing patients with clear instructions, appointment reminders, and updates on treatment plans.¹⁴⁻¹⁶

The efficiency of a dental practice is inextricably linked to the availability of qualified and well-trained staff. Inadequate staffing levels can lead to long waiting times, delays in treatment, and compromised patient care. Conducting periodic assessments of staffing needs, considering factors such as patient volume, complexity of procedures, and staff turnover,

can ensure that the practice is adequately staffed to meet patient demands. Implementing effective strategies for attracting and retaining qualified dental professionals is crucial for maintaining optimal staffing levels. This includes offering competitive compensation packages, opportunities for professional development, and a positive work environment. Delegating tasks effectively, based on staff members' skills and expertise, can optimize resource utilization and enhance efficiency. This allows dentists to focus on complex procedures while delegating routine tasks to dental hygienists or assistants.¹⁵⁻¹⁷

In today's competitive healthcare landscape, patient experience has emerged as a key differentiator for dental practices. A positive patient experience fosters loyalty, attracts new patients, and enhances the practice's reputation. Implementing efficient scheduling systems, optimizing staffing levels, and streamlining administrative processes can significantly reduce patient waiting times, leading to improved satisfaction. Open and transparent communication with patients, addressing their concerns, and providing clear explanations about treatment options and procedures, can foster trust and enhance the overall patient experience. Providing high-quality dental care, utilizing the latest technologies and techniques, and adhering to stringent infection control protocols, can instill confidence in patients and contribute to a positive experience. Tailoring treatment plans to individual patient needs and preferences, and providing compassionate care, can create a sense of value and enhance patient satisfaction. Actively seeking patient feedback and conducting follow-up calls after procedures can demonstrate a commitment to patient well-being and provide opportunities for addressing any concerns or issues. The findings of recent studies on outpatient service efficiency in dental practices have profound implications for dental service providers striving to enhance their operations. By streamlining administrative processes, optimizing staffing levels, and prioritizing patient experience, dental practices can achieve greater efficiency,

improve patient satisfaction, and thrive in today's competitive healthcare landscape. This discussion has provided a comprehensive overview of the implications for dental service providers, but the journey towards continuous improvement is ongoing. Dental practices must remain adaptable, embrace technological advancements, and prioritize patient-centered care to ensure sustained success in the years to come. Embracing innovative technologies, such as teledentistry, artificial intelligence, and 3D printing, can streamline processes, enhance diagnostic capabilities, and improve treatment outcomes. Investing in ongoing professional development for staff members can ensure that they remain abreast of the latest advancements in dentistry, enabling them to provide the highest quality care to patients. Building strong relationships with the local community through outreach programs and educational initiatives can enhance the practice's visibility and attract new patients. Implementing environmentally sustainable practices, such as reducing waste, conserving energy, and utilizing eco-friendly materials, can contribute to a positive image and attract environmentally conscious patients. By embracing these additional considerations, dental service providers can further enhance their efficiency, expand their patient base, and solidify their position as leaders in the dental healthcare industry. The pursuit of efficiency in dental service provision is a continuous journey. Dental practices must remain vigilant, adaptable, and committed to innovation to meet the evolving needs of patients and thrive in an increasingly competitive landscape. By implementing the strategies and considerations outlined in this discussion, dental service providers can create a practice that is not only efficient but also patient-centered, technologically advanced, and environmentally responsible. This will not only lead to improved patient outcomes and satisfaction but also contribute to the long-term success and sustainability of the practice. The future of dental service provision is bright, and those practices that embrace change, prioritize patient experience, and invest in continuous improvement will

undoubtedly lead the way.¹⁸⁻²⁰

While this study provides valuable insights into the factors influencing outpatient service efficiency in a dental and oral hospital, it is important to acknowledge certain limitations. First, the study was conducted at a single institution, limiting the generalizability of the findings. Future research should explore these factors in a wider range of dental settings. Second, the study focused on a limited set of variables. Future studies could examine additional factors, such as patient demographics, severity of dental conditions, and cultural influences. Despite these limitations, this study contributes to the growing body of literature on outpatient service efficiency in dental care. The findings offer valuable insights for dental service providers seeking to improve patient satisfaction and outcomes.

4. Conclusion

This study has identified several key factors influencing outpatient service efficiency at a dental and oral hospital in Padang, Indonesia. Administrative bottlenecks, insufficient staffing levels, and patient dissatisfaction were found to be significant challenges. Addressing these issues requires a comprehensive approach involving process improvement, staffing optimization, and a focus on patient experience.

5. References

1. Al-Azzam SI, Alzoubi KH, Khader YS. Patient satisfaction with outpatient services and associated factors at a teaching hospital in Jordan. *Oman Med J.* 2018; 33(2): 124-30.
2. Babar ZU, Ali SS, Iqbal N. Factors affecting patient waiting time and satisfaction in outpatient department of a tertiary care hospital. *BMC Health Serv Res.* 2020; 20(1): 1-8.
3. Gupta P, Saini M. Patient satisfaction with OPD services in a tertiary care teaching hospital in Northern India. *Int J Community Med Public Health.* 2021; 8(3): 1297-302.
4. Haas S, Salzmänn-Erikson M, Eriksson G. Patient satisfaction with access to and waiting time in primary health care – A systematic review of the literature. *BMC Fam Pract.* 2019; 20(1): 1-13
5. Ihsan MN, Illahi SN, Pramestutie E. The effect of waiting time on outpatient satisfaction at the general polyclinic of Grhasia Hospital Surabaya. *J Berkala Epidemiol.* 2018; 6(1): 45-52.
6. Jannah AN, Kiswaluyo, Widi EY, Ristya. The Relationship between Service Time Speed and Patient Satisfaction at the University of Jember Dental and Oral Hospital. *J Health Lit.* 2017; 5(1).
7. Laeliyah N, Subekti I. The relationship between outpatient service waiting time and patient satisfaction with outpatient services at Indramayu Regency Hospital. *J Vocat Health.* 2017;1(2).
8. Al-Haratini R. Optimizing wait time using smartphones as a patient empowerment tool. In: *Proceedings of the International Conference on Informatics in Healthcare.* 2010: 45-46.
9. Dewi AU, Astuti R, Werdani KE. The relationship between registration waiting time and patient satisfaction at the outpatient registration center (TPPRJ) of Surakarta Hospital. Surakarta: FIKES UMM. 2015.
10. David M, Hariyanti S, Widayanti L. The relationship between doctor's arrival delay and patient satisfaction in outpatient installations. *Brawijaya Med J.* 2014;28(1).
11. Febriyanti DH. Description of factors that affect the waiting time for registration at TPPRJ Tugurejo Hospital Semarang. Semarang: Universitas Dian Nuswantoro. 2015.
12. Prodi DIII RK, Rekam M, Kesehatan U. Analysis of the effect of waiting time on outpatient satisfaction at Ciawi Regional General Hospital, Bogor Regency. *J Manag*

Health Inf. 2017; 3(2): 100-10.

13. Utami YT. The relationship between waiting time for outpatient services and patient satisfaction at Assalam Gemolong Hospital. In: Prosiding Nasional APIKES-AKBID Citra Medika Surakarta. 2015.
14. Arieta R. Analysis of patient waiting time at the department of dentistry and oral affairs of Gatot Soebroto Army Central Hospital Ditkesad. Jakarta: Faculty of Public Health, Thesis, Hospital Administration Study Program, Universitas Indonesia. 2012.
15. Esti A, Puspitasari Y, Rusmawati A. The effect of waiting time and patient touch time on the satisfaction level of general polyclinic patients at the Sukorame Health Center, Kediri City. Bakti Tunas Husada Health J. 2015.
16. Zaini R. The effect of employee performance and employee service quality on community satisfaction in obtaining identity cards and family cards at the Baki District Office. Sci J Soc. 2021; 9.
17. Riyandi H. Quality of health care (Descriptive Study on Public Services for JAMKESMAS Recipients at Sidoarjo Regional General Hospital). Public Policy Manag. 2014; 1(1).
18. Mufitasari E. Quality of health services. Thesis. FISIP-AN. 2010.
19. Prastiwi EN. The relationship between patient satisfaction and interest in revisits at the Wisma Jaya Health Center, Bekasi City. Garuda J. 2018; 12: 23-32
20. Cronin JJ, Taylor SA. Measuring service quality: a reexamination and extension. J Mark. 1992; 56(3): 55-68.