

ORIGINAL RESEARCH

Hospital outpatient waiting time and patient satisfaction: an observational comparative study

Tiempo de espera en consultas hospitalarias externas y satisfacción del paciente: un estudio observacional comparativo en Indonesia

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Abstract

Goals. This study aims to examine and compare queue durations, patient perceptions, and satisfaction levels related to outpatient services at public hospitals and private religious hospitals in Indonesia. **Methods.** A cross-sectional research design was employed in this study, utilizing an observational comparative approach. Queue durations were measured using stopwatches, and patient perceptions were assessed through questionnaire sheets. The research was carried out at two hospitals, namely Dr. Pirngadi Regional Public Hospital (PRPH) and Malahayati Islamic Private Hospital (MIPH) in Medan, Indonesia with the participation of 300 patients. **Results.** The findings of this research indicate substantial variances in poly queue time, outpatient waiting time, pharmacy queue time, and total time between the two hospitals, although no significant disparities were observed in terms of satisfaction. **Conclusion.** Top-level management and outpatient facility leaders in both hospitals are advised to place greater emphasis on queue-related factors that influence patient satisfaction. These factors encompass aspects like queue room ventilation, counter availability, seating availability, wait time efficiency, and the assurance of service timeliness.

Keywords: Queue, Government Hospital, Islamic Hospital, Satisfaction, Service.

Resumen

Objetivos. Este estudio pretende examinar y comparar la duración de las filas, las percepciones entre pacientes y nivel de satisfacción asociado con los servicios ambulatorios en hospitales públicos y en hospitales religiosos privados de Indonesia. **Métodos.** Se empleó un diseño transversal, utilizando un enfoque observacional comparativo. La duración de las filas se midió con cronómetro y las percepciones de los pacientes se evaluaron mediante cuestionarios. La investigación se llevó a cabo en dos hospitales: el Hospital Público Regional Dr. Pirngadi (PRPH) y el Hospital Privado Islámico Malahayati (MIPH) de Medan, Indonesia, con 300 pacientes. **Resultados.** Indican variaciones sustanciales en el tiempo de espera para policlínica, el tiempo de espera para pacientes ambulatorios, el tiempo en la fila para la farmacia y el tiempo total de espera entre los dos hospitales, aunque no se observaron disparidades significativas en términos de satisfacción. **Conclusiones.** Se aconseja a la dirección y a los responsables de los casos ambulatorios de ambos hospitales hacer mayor hincapié en los factores relacionados con las filas, por su influencia sobre la satisfacción de los pacientes. Dichos factores incluyen aspectos como la ventilación de la sala de espera, la disponibilidad en mostradores, la disponibilidad de asientos, la eficiencia del tiempo de espera y la garantía de puntualidad en el servicio.

Palabras clave: Fila, hospital público, hospital islámico, satisfacción, servicio.



Introduction

The quality of health services is a key indicator of how to assess the success of management in health facilities.¹ Time is a valuable resource, and reducing waiting time is an important topic to analyze.^{1,2} The imbalance between the speed of arrival of participants who need services and the available facilities triggers queues.³

The patient queuing situation is still a problem that is often associated with the quality of health services. The quality of health services can be assessed by examining patient access to services, which includes patient waiting time.^{4,5} A number of studies have shown that patient satisfaction is significantly negatively correlated with waiting time.^{4,6} It is often the case that patients spend more time waiting than actually receiving services, such as diagnosis and consultation.^{7,8}

Hospitals are institutions where people can come for healing services.^{2,9} In hospitals, there is often a considerable queue in the service section at the patient registration counter. The number of queues affects public satisfaction.^{2,4,9}

Indonesia's healthcare system combines public and private providers, each serving distinct roles across its vast population. The public sector, led by the Ministry of Health, includes a tiered system of primary healthcare centers and hospitals primarily aimed at offering affordable services.¹⁰ However, public facilities often face resource limitations, leading to longer wait times, particularly in outpatient services, as they cater to a majority of lower-income and rural populations.¹¹

Private hospitals, including Islamic hospitals, offer an alternative with shorter wait times and often more personalized care. Islamic hospitals integrate healthcare with religious values, appealing to the predominantly Muslim population.¹² With the expansion of Jaminan Kesehatan Nasional (JKN), Indonesia's national health insurance strategy, demand has surged in public facilities, increasing strain and wait times, whereas private and Islamic hospitals, which serve fewer JKN patients, experience less overcrowding. This comparative study on outpatient queues highlights essential

insights into these disparities, supporting policy development to enhance equitable access across Indonesia's healthcare landscape.^{12,13}

People want a service process that is fast, precise, and clear. Researching the disparity in satisfaction levels between BPJS Kesehatan (Social Security Agency on Health) member patients and non-BPJS patients in relation to the registration services at Tobelo Hospital, it was revealed a notable divergence in the satisfaction levels of these two groups.¹⁴ Abdus-salam's research¹⁵ also found that patient satisfaction was related to waiting time <45 minutes. High dissatisfaction was found with cash payments. More than half of patients favored staggered appointments. Differentiated appointments can be a useful strategy to reduce waiting time and patient burden.¹⁵

In 2016, the Islamic Health Efforts Council (MUKISI) and the National Sharia Council of the Indonesian Ulema Council (DSN-MUI) issued fatwa No. 107 containing the provisions of contracts and services in accordance with Sharia, which became the basis for the implementation of Islamic hospitals.¹⁶ Until now, the discussion regarding the minimum service standards of Islamic hospitals has been vital.^{17,18}

Public hospitals at the regional level tend to experience longer queues, primarily because they serve a larger patient population. Conversely, private hospitals, which include Islamic private hospitals, often offer services with shorter queues as they operate within limited capacity.^{19,20} The characteristics of Islamic private hospitals that maintain *ikhtilat* (free mixing) of genders and the provisions of *aurah* (visible limits on the body) in getting services foster different queuing conditions.^{16,17} Therefore, the discussion about the characteristics of hospital services needs to be studied more deeply.

Regional public hospital (RPH) and Islamic private hospitals (IPH) have different resources. This affects how health services are provided, such as how long the waiting time is or how many patients can be treated.²¹ Understanding queuing patterns and patient waiting times in public and private hospitals can help design strategies that can

optimize queue management and improve service efficiency.^{22,23}

Waiting times in public versus private hospitals influence health outcomes by affecting access, patient stress, and health disparities. Longer waits in public hospitals may delay diagnoses and treatments, allowing diseases to progress, while shorter waits in private hospitals support timely care and better outcomes.²⁴

Prolonged waits add stress, which weakens immunity and exacerbates chronic conditions, disproportionately affecting lower-income patients and widening health disparities. Extended waits also reduce patient trust and adherence to care, highlighting how logistical factors like waiting times significantly impact health outcomes beyond social influences.^{24,25}

Limited information is available regarding the assessment of service quality in the queuing systems of RPH and IPH. Evaluating and comparing the service and queue satisfaction between these two hospitals with distinct characteristics is crucial. This study serves as a foundation for promoting a balanced approach between public and private healthcare services to maximize community benefits.

Given the aforementioned context, a more in-depth examination of the queuing processes is necessary. The primary objective of this study is to analyze and contrast queuing procedures and patient satisfaction levels at RPH and IPH. This research aims to provide valuable insights that encourage hospital management to address queuing challenges proactively, ensuring patient safety and comfort.

Methods

This study employed analytical observational research with a cross-sectional design to determine the comparison of queuing time and patient perceptions related to outpatient service queues between RPH and IPH. Observation of lead time data collection was carried out with the help of a stopwatch to calculate the length of time the patient

waited from entering the hospital until completion of service. The variables studied included the duration of the list queue, polyclinic queue, duration of polyclinic services, pharmacy time, total outpatient time, perception score and satisfaction score. Patient perception data collection was carried out with the help of a questionnaire consisting of 8 statements with alternative answers of Satisfied, Moderately satisfied, and Dissatisfied.²⁶ The location of this study was Medan City, in Dr. Pirngadi Regional Public Hospital (PRPH) and Malahayati Islamic Private Hospital (MIPH), and was carried out from August to September 2022, with a total sample of 300 respondents consisting of 150 outpatients in government hospitals and 150 outpatients in Islamic hospitals. The data collected were then analyzed descriptively in the form of distribution, percentage, proportion and mean of the variables studied. Bivariate analysis on the variables studied was carried out to determine the comparison of queue lead-time and comparison of patient perception at the two hospitals. This research has passed the ethical test from the Faculty of Medicine, Islamic University of North Sumatra with certificate number 285/EC/KEPK.UISU/VIII/2022.

Results

Characteristics of research respondents

An overview of the characteristics of respondents in this study can be seen in the following table:

Examining the presented table 1, it becomes apparent that the predominant age group among patients in both hospitals is the adult category, accounting for 64.9% and 63.3%, respectively. In terms of patient gender, PRPH has a higher proportion of female patients compared to male patients. In contrast, MIPH exhibits an opposite trend, with a notably higher percentage of male patients as opposed to female patients. In education, a marked contrast exists in the educational backgrounds of patients at both hospitals, with a clear prevalence of individuals holding a higher level of education.

Table 1. Overview of respondent characteristics (N=300)

Variable	PRPH		MIPH	
	n	%	n	%
Age				
Baby	1	0.7	-	-
Children	4	2.6	3	2
Teens	4	2.6	3	2
Adults	98	64.9	95	63.3
Elderly	44	29.1	49	32.7
	Me (sd) : 47.5 (17.8) Min – Max: 0.25 - 80		Me (sd) : 49.1 (16.8) Min – Max : 3 - 90	
Gender				
Male	59	39.1	102	68
Female	92	60.9	48	32
Education				
Low	27	17.9	20	13.3
High	124	82.1	130	86.7

Table 2. Description of outpatient queuing time

Hospital	Mean	Median	SD	Min	Max
PRPH(n=150)					
List queue	43	30	26	5	180
Poly queue	26	20	19.3	0	120
Poly services	12.2	10	9.3	0	60
Pharmacy queue	22.9	20	24.7	0	180
MIPH(n=150)					
List queue	44.3	37.5	31.7	0	240
Poly queue	33.5	30	21.6	0	135
Poly services	12.1	10	6.8	1	35
Pharmacy queue	31.6	30	25.5	0	122

* The Minimum Service Standards of the Ministry of Health in Indonesia (MSSMoHRI) Number 129/Menkes/SK/II/2008:

- Outpatient waiting time \leq 60 minutes
- Customer satisfaction \geq 90%
- Medical record provision time (list) \leq 10 minutes
- Waiting time for pharmaceutical services (finished medicine) \leq 30 minutes

Univariate analysis results

A summary of queue duration, respondents' views on queue services, and their satisfaction levels with queue services, as determined by the study's findings, will be provided in the table presented below:

Referring to the provided table 2, the data indicates that at PRPH, the average waiting time for patients in the registration queue is 43 minutes.

Subsequently, patients wait an average of 26 minutes to enter their intended polyclinic, with a maximum queue time of 120 minutes. The service duration at the polyclinic, on average, is 12 minutes and 2 seconds. Patients also spend an average of 22 minutes waiting in the pharmaceutical installation queue to receive their medication.

Regarding the queue duration at MIPH, the average waiting time for the registration queue is 44 minutes and 3 seconds. In the queue to access the

intended polyclinic room, patients wait for an average of 33 minutes and 5 seconds. Within the poly services, patients typically receive service for an average of 12 minutes and 1 second. Additionally, for patients waiting to collect their medication at the pharmaceutical installation, the average queue time is 31 minutes and 6 seconds. Based on MSS MoHRI, the standard queue time for registration is ≤ 10 minutes, the standard time for polyclinic services is ≤ 30 minutes, the standard queue time for pharmacy is ≤ 30 minutes. So when referring to these provisions, the following categories will be used:

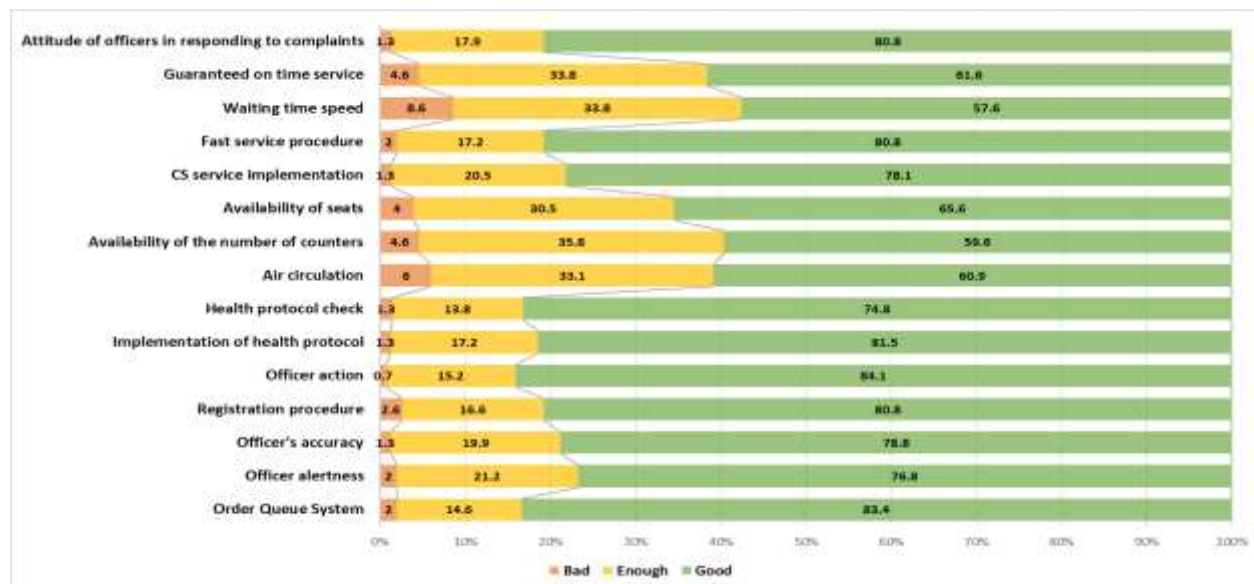
The table 3 provided indicates that the queue times at PRPH do not consistently meet the MSS set for hospital services. However, when it comes to polyclinic service durations and pharmacy queues, a majority of them align with requirements. Conversely, at MIPH, the queue times for registration services and pharmacy services often fall short of standards, with a smaller proportion adhering to these guidelines. Nevertheless, the time allocated for polyclinic services at MIPH is generally in line with the recommended durations outlined in the hospital MSS. Observing the table, it's evident that PRPH exhibits a higher level of conformity with standards in comparison to MIPH.

Table 3. Description of the outpatient queue time category based on the MoHRI standard*

Respondent Perceptions	Adequate		Inadequate	
	n	%	n	%
PRPH				
List queue	24	15.9	126	84.1
Polyclinic service times	146	97.4	4	2.6
Pharmacy queue	123	82.1	27	17.9
MIPH				
List queue	2	1.3	148	98.7
Polyclinic service times	148	98.7	2	1.3
Pharmacy queue	87	58	63	42

*MSS MoHRI Number 129/Menkes/SK/II/2008

Picture.1 Item distribution of patient perceptions of outpatient services at PRPH

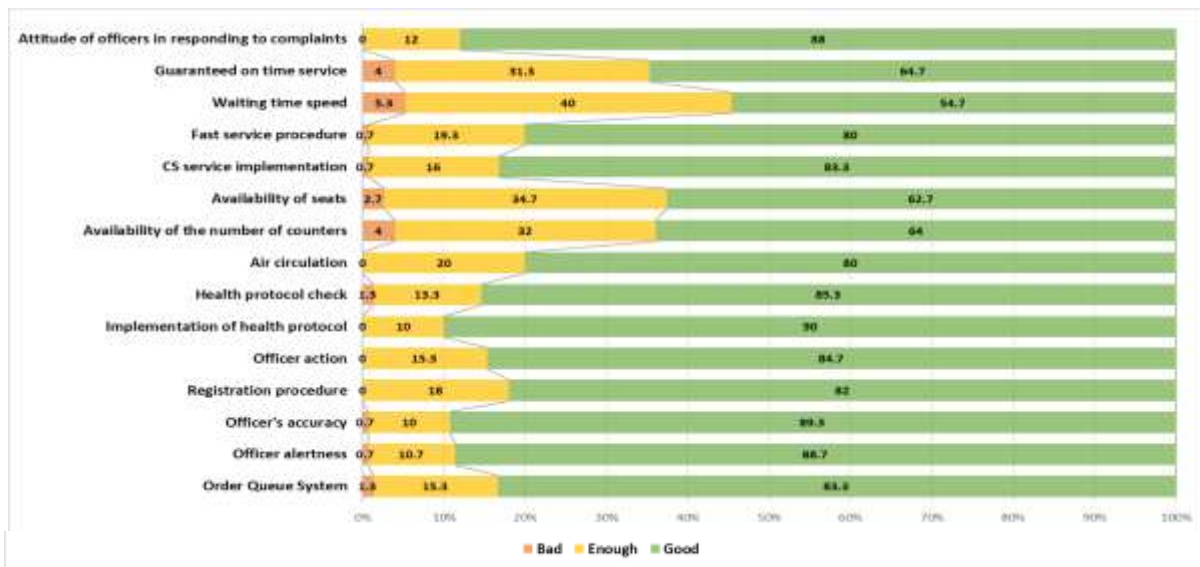


Source: primary data processed by researchers (n=150)

The graphs depicted in Figure 1 and Figure 2 illustrate that there are several elements that tend to foster positive perceptions among patients regarding queuing services. These elements encompass aspects such as the organization of the queue system, the readiness and accuracy of healthcare personnel, the efficiency of registration procedures, the actions of healthcare workers, the adherence to health protocols, the provision of customer services, the promptness of service procedures, the adherence to health protocols, and

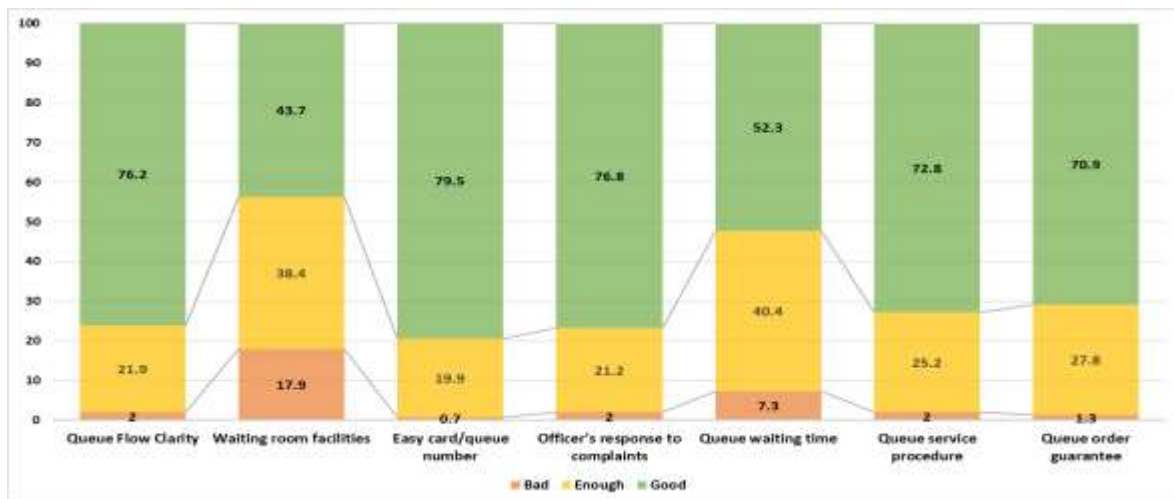
the attitude of officers when addressing patient complaints. These factors are crucial considerations that need to be upheld and enhanced. Additionally, when considered proportionally, there are multiple elements that demand serious attention to prevent a further decline in their quality. These include factors like the adequacy of air circulation in the queuing area, the availability of sufficient counters, the presence of an adequate number of seats, the swiftness of waiting times, and the assurance of timely service.

Picture.2 Item distribution of patient perceptions of outpatient services at MIPH



Source: primary data processed by researchers (n=150)

Picture.3 Distribution of patient satisfaction items outpatient services at PRPH

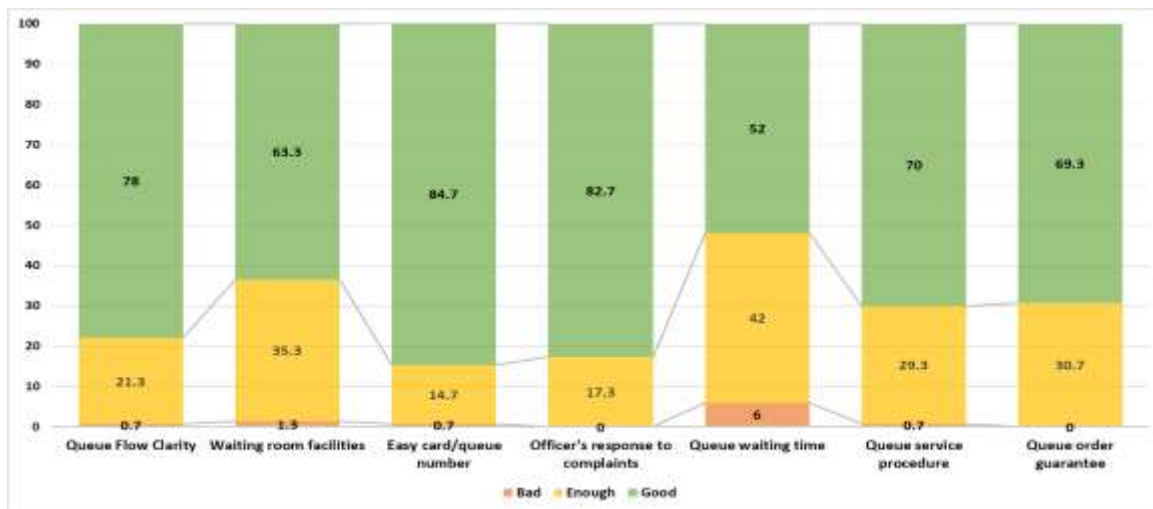


Source: primary data processed by researchers (n=151)

The graphs presented in Figure 3 and Figure 4 further reveal various aspects that tend to positively influence patient satisfaction in queuing services. These include the clarity of queue organization, the ease of obtaining cards or queue numbers, the promptness of officers in addressing complaints, the effectiveness of queue service procedures, and

the assurance of orderly queuing. These factors are pivotal and should be continually enhanced. Conversely, when considered proportionally, there are specific elements that demand serious attention to prevent further deterioration. These include the quality of waiting room facilities, and the duration of queue waiting times.

Picture.4 Distribution of patient satisfaction items with outpatient services at MIPH



Source: primary data processed by researchers (n=151)

Table 4. Categories of patient perception and service satisfaction in hospital outpatient queues

Variable	PRPH		MIPH	
	n	%	n	%
Service perception				
Bad	8	5.3	3	2
Good	143	94.7	147	98
Satisfaction				
Not satisfied	22	14.6	16	10.7
Satisfied	129	85.4	134	89.3

Referring to the Table 4, it is evident that respondents' perceptions of queuing for outpatient services at PRPH are predominantly positive (94.7%) falling into the "good" category. Likewise, at MIPH, the majority of respondents, 147 individuals (98%), perceive the queuing experience as "good". Notably, the percentage of "good" category perceptions in both hospitals exceeds 90%, indicating that respondents generally view the outpatient queuing services at these two hospitals positively.

In terms of respondents' contentment with outpatient queuing services, as illustrated in Table 4, a significant proportion of PRPH patients indicated satisfaction (85.4%). Similarly, at MIPH, the majority of patients conveyed their contentment (89.3%). It's important to highlight that the minimum threshold for patient satisfaction, according to the MSS, is established at $\geq 90\%$. Consequently, the conclusion can be drawn that neither hospital meets the minimum MSS standards.

Table 5. Mann-whitney test results

Variable	Mean rank		<i>p-value</i>
	PRPH	MIPH	
Registrationqueue	147.73	154.30	0.508
Poly queue	130.87	171.26	0,000*
Poly services	145.62	156.42	0.269
Pharmacy times	134.70	156.42	0.001*
Total time	140.87	161.19	0.043*
Perception score	141.83	160.23	0.063
Satisfaction score	148.41	153.61	0.593

**significant*

Bivariate analysis results

The results of a comparative analysis of queue times, service perceptions and patient satisfaction between the two hospitals are as follows:

The data Table 5 provided indicates that MIPH consistently has a higher mean rank than PRPH in each aspect. As illustrated in the Mann-Whitney test results table, it becomes evident that several factors, including registration queue, poly queues, pharmacy waiting times, and total service duration, demonstrate a notable and statistically significant difference between PRPH and MIPH, respectively.

Discussion

The queue time for services provided by PRPH and MIPH exceeds the MSS time. This is in line with Susilawati (2022), where the results of her research showed that as many as 80% of respondents queued with a waiting time of > 60 minutes, which was due to officers re-interviewing old patients, and registration of new patients.²⁷ This study aligns with previous research, which found that the duration of patient service queues in the hospital averaged 157.13 minutes, significantly exceeding the MSS target time of less than 60 minutes.

Previous studies suggest that the length of time patients wait in queues influences their satisfaction, as longer waits can make patients feel neglected.^{28,29} However, this raises the question of whether queue duration alone is a reliable indicator of patient satisfaction with services.

There are points that must be considered again by both hospitals, to enhance patient satisfaction with

the outpatient services provided. At PRPH, things that must be considered include air circulation in the queue room, availability of the number of counters, availability of the number of seats, and guarantee of service timeliness. Recommendations for MIPH are much the same, although air circulation was not an issue for patients waiting at MIPH.

Waiting rooms must be comfortable for outpatients, especially those experiencing long wait times. Hospitals should ensure that waiting areas are spacious and well-ventilated. Long queues often result in overcrowded rooms with poor air circulation, which can negatively impact air quality. This, in turn, increases the risk of respiratory conditions such as upper and lower respiratory tract infections (URTI), pneumonia, and chronic obstructive pulmonary disease (COPD).³⁰

The availability of registration counters significantly impacts queue times. At PRPH, only 11 out of 14 registration counters are operational due to a lack of functional computer facilities, which remains an issue for hospital management. This shortage contributes to longer wait times as patient arrivals increase. At MIPH, the situation is different but equally challenging, with only 4 registration counters, an insufficient number given the high volume of outpatients. This limited capacity results in prolonged queue times. Studies have shown that an adequate number of counters can significantly reduce waiting times, allowing faster service delivery and improving patient satisfaction.³²

The availability of seating in outpatient queue rooms at both hospitals is a significant concern,

particularly due to long waiting times. Patients waiting to register often experience additional delays caused by overcrowding. The limited number of seats forces some patients to stand for extended periods, leading to discomfort and negative perceptions of the service. Increasing the seating capacity to accommodate the number of patients can improve the waiting experience, foster better communication between health workers and patients, and create a more comfortable environment. Ultimately, this would enhance patient satisfaction.

The speed of waiting time must also be considered by both hospitals, where the waiting time of these two hospitals is slightly longer than the MSS MoHR standard. This should be a concern for hospital management, even though patient satisfaction is still high for both hospitals. The standard waiting time for outpatients is recommended to be no more than 60 minutes. PRPH had an average wait time of 147 minutes, which is still far from the MSS.

Ensuring the timeliness of services is a critical aspect that both hospitals must prioritize. Providing guarantees to patients helps address dissatisfaction or negative perceptions by demonstrating the hospitals' accountability for the quality of care. This approach fosters trust in the hospitals and healthcare services offered³³. Guarantees should include clear communication, proficiency, politeness, and adherence to timeliness. By offering these assurances, hospitals can build a strong sense of trust and confidence between patients and staff, ensuring that neither party feels disadvantaged.^{32, 33}

Beyond the factors PRH and MIH need to address, there remains the possibility that patient satisfaction with outpatient services could be perceived as low or unsatisfactory. This finding contrasts with previous research suggesting that government hospitals generally experience longer waiting times compared to private hospitals.^{23,24} Interestingly, despite this, government patients do not typically exhibit widespread mistrust toward public hospitals.^{24,25} Still, private hospital patients often experience shorter waiting times and tend to express higher levels of trust in private healthcare

institutions. Even in private hospitals with extended waiting times, patient satisfaction levels remain relatively high.²⁶ This may point to the influence of other unexplored factors, such as the physical and emotional attributes of hospital staff, which contribute to patient satisfaction. However, further research is required to investigate this aspect more thoroughly.

This study arrived at the determination that notable disparities exist in outpatient services between IPH and RPH, specifically in the domains of poly queue durations, pharmacy waiting times, and overall service duration. Nevertheless, it is important to note that there was a consistent level of patient satisfaction observed across both hospitals, with no discernible difference. Additional investigation is warranted, particularly with the involvement of sharia-certified healthcare institutions, and with a more extensive sample of respondents, in order to substantiate the significant influence of sharia-compliant hospital services on patient satisfaction.

This comparative study on outpatient queue services in government and Islamic hospitals supports health activism by revealing structural differences in healthcare access, which can aid advocacy for fair, prompt care. The results inform communities of their rights, empowering them to push for quality enhancements, especially in hospitals where wait times may be longer. By framing queue duration as a social factor that disproportionately affects low-income groups, the study promotes accountability and aligns with activist efforts to uphold health as a basic right and encourage policy changes that address inequalities in healthcare access.

Conclusion

This research found variations in queuing times for outpatient services between PRPH and MIPH. Specifically, the registration queue time at PRPH is slightly quicker compared to MIPH. When considering the average time patients spend waiting to enter their intended polyclinic room, PRPH is also faster than MIPH. However, when it comes to the duration of the actual service, both PRPH and MIPH exhibit similar timings, with only seconds of

difference. Notably, the pharmacy queue at PRPH is faster than that at MIPH. Patients tend to express more positive perceptions of queuing services at PRPH compared to MIPH. In contrast, the level of patient satisfaction is higher at MIPH. Furthermore, there are differences in polyclinic queue times, pharmacy queue times, and total service durations between both hospitals, with MIPH having a higher mean rank in these aspects.

This study has certain limitations. It's worth noting that there may be unaccounted variables that could influence elevated patient satisfaction, including factors like doctor and nurse interactions and the emotional connections patients form. Additionally, the study was carried out in the post-pandemic period, with health protocols in place, which meant that not all patients could be reached. Furthermore, due to the varying locations of remote buildings and internal hospital policies restricting the duration of data collection from respondents, not all polyclinics were included in the study.

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