Indonesian Journal of Global Health Research
Volume 7 Number 5, October 2025
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

ANALYSIS OF OUTPATIENT WAITING TIME DETERMINANTS IN HOSPITALS BASED ON THE DONABEDIAN FRAMEWORK

Rika Maretha*, Haerawati Idris, Rizma Adlia Syakurah
Master of Public Health Study Program, Faculty of Public Health, Universitas Sriwijaya, Jln Raya Palembang-Prabumulih, KM 32, Indralaya, Ogan Ilir, Sumatera Selatan 30662, Indonesia
*10012622428008@student.unsri.ac.id

ABSTRACT
Waiting time is one of the indicators in evaluating the quality of outpatient services in hospitals. Long waiting times are often the main complaint of patients and have the potential to reduce satisfaction and effectiveness of services. This article aims to review the available literature on patient waiting times and identify factors that contribute to waiting times for outpatient services. The method used is a Systematic Literature Review using the Preferred Reporting Items for Systematic Reviews (PRISMA) flow by collecting articles from the Google Scholar and PubMed databases published between 2019 and 2024 with the keywords " outpatient", "waiting time" and "hospital", as well as in Indonesian: "waktu tunggu, perawatan jalan" and "poliklinik". Based on the analysis results, 20 articles were selected from the 130 articles selected that met the inclusion criteria and were subsequently analysed and classified using the Donabedian theoretical framework, which consists of three components: structure, process, and outcome. The analysis results indicate that structural factors, such as limited medical personnel, inadequate infrastructure, and inefficient queuing systems, are the primary causes. In the process aspect, doctor delays, lengthy administrative processes, and a lack of service system integration also contribute to lengthening waiting times. Meanwhile, outcome factors are closely related to patient perceptions and satisfaction levels. The study's conclusions suggest that improving outpatient wait times necessitates a comprehensive approach that encompasses enhancing service structure, process efficiency, and prioritising patient outcomes.

Keywords: outpatient care; polyclinic; waiting time

How to cite (in APA style)
Maretha, R., Idris, H., & Syakurah, R. A. (2025). Analysis of Outpatient Waiting Time Determinants in Hospitals Based on the Donabedian Framework. Indonesian Journal of Global Health Research, 7(5), 715-722. https://doi.org/10.37287/ijghr.v7i5.6954.

INTRODUCTION

Outpatient services are an essential component of the healthcare system, as they serve as the initial point of contact for most patients with access to advanced healthcare facilities. As the number of visits increases, hospitals are required to provide fast, efficient, and high-quality services. Waiting time is one indicator used to evaluate the quality of outpatient services in hospitals. Long waiting times are often a major complaint among patients and have the potential to reduce patient satisfaction and service effectiveness (Sumayku et al., 2022; Dwi et al., 2024).

The Indonesian government, through Minister of Health Decree No. 129/Menkes/SK/II/2008, has established patient waiting time as an indicator of hospital Minimum Service Standards (SPM). Waiting time is recognisedrecognised as a critical parameter for evaluating service quality and patient satisfaction (Jalloh & Nwosu, 2020). Several previous studies have shown that various factors influence patient waiting times. For example, research by Sumayku et al. (2022) found that patient knowledge and the quality of administrative services were significantly associated with waiting times at outpatient clinics. Meanwhile, research by Agustina et al. (2023) highlighted that the duration of registration, the number of patients in the queue, and the late arrival of doctors also influence waiting times.

Analysis of these factors can be conducted using a framework developed by Donabedian (1966), which is widely used in evaluating the quality of health services. This framework divides the determinants of service quality into three main components: structure, process, and outcome. The Donabedian Framework is an appropriate choice for this analysis because it provides a comprehensive and systematic approach to evaluating the quality of health care by considering not only the outcomes, but also the resources and how services are delivered. This study aims to identify factors contributing to outpatient waiting times based on a literature review, enabling researchers to map and categorize the various factors contributing to waiting times based on interrelated dimensions, thereby helping to identify the most relevant and impactful areas of intervention within the outpatient care system.

METHOD

The method used is a systematic review (Systematic Literature Review) using the Preferred Reporting Items for Systematic Reviews (PRISMA) flow by collecting articles from the Google Scholar and PubMed databases with the keywords " outpatient", "waiting time", "factors", "determinants" and "hospital", as well as in Indonesian: "outpatient waiting time" and "polyclinic". The search was conducted using the *Boolean search technique* to improve search accuracy. Furthermore, article screening was carried out based on inclusion and eligibility criteria related to factors that influence outpatient service waiting times in hospitals.

The inclusion criteria used were free, full-text, open-access, and original research articles published by national and international journals between 2019 and 2024. The inclusion criteria for this study included original research articles that examined factors related to waiting times in outpatient services at health facilities. Articles that were not thematically relevant or not available in full-text versions were excluded from the analysis. From the initial search results, 130 articles were identified. Then, from these, 20 articles were selected from the 130 articles determined for consideration based on the criteria. Each article was reviewed based on its research focus and identified factors, and classified according to Donabedian's theoretical framework, which divides service quality into three main components: structure, process, and outcome.

RESULT

Table 1.
Summary of Literature Review Results on Determinants of Outpatient Waiting Time

No	Author and Year	Title	Research result	Donabedian Category
1	(Dewi et al., 2020)	Analysis of Outpatient Waiting Times at Achmad Darwis Hospital	A shortage of health workers, suboptimal implementation of SOPs, and limited infrastructure are structural factors that extend patient waiting times.	Structure; Process
2	(Muen et al., 2019)	Determinants of Waiting Time at Kibabii Health Clinic	High patient volumes and inefficiencies in managing the queue process have a significant impact on accumulated waiting times.	Structure; Process
3	(Al-Harajin et al., 2019)	Waiting Time and Patient Satisfaction in Outpatient Clinics	The difference in waiting time between the registration process and medical consultation significantly affects patient satisfaction with the service system.	Outcome
4	(Ndu et al., 2020)	Evaluation of Wait Time in Children's Outpatient Unit, Nigeria	The complexity of the triage process, the non-standardised administration system, and the layout design of the facilities affect the waiting time for children's services.	Structure; Process
5	(Jalili et al., 2020)	Waiting Time and Satisfaction in Outpatients	Long waiting times in laboratories and examination procedures have a direct impact on reducing patient satisfaction levels with the services received.	Process; Outcome

No	Author and Year	Title	Research result	Donabedian Category
6	(Nguyen et al., 2020)	Outpatient Waiting Time in Vietnam Facilities	Differences in waiting times between health facilities are influenced by structural factors such as socioeconomic status and the type of service institution.	Structure
7	(Fauziyyah, 2021)	Analysis of Service Waiting Time on Patient Satisfaction	Delays in doctor attendance and manual registration systems are the primary determinants of negative patient perceptions of service quality.	Process
8	(Toga-Sato et al., 2021)	Relationship of Perceived Waiting Time and Satisfaction in Diabetes Patients	Patient-perceived wait time has a greater impact on satisfaction than actual recorded wait time.	Outcome
9	(Sumayku et al., 2022)	Analysis of Factors Related to Waiting Time at Sentra Medika Hospital	Patient and administrative knowledge influences the length of waiting time at the polyclinic.	Process
10	(Purwoko & Nurwahyuni, 2022)	Analysis of Service Waiting Time at Hospital A	A limited number of doctors, practice hours that do not meet patient needs, and slow administrative processes all contribute to increased waiting times.	Structure; Process
11	(Iswanto, 2022)	Waiting Time Reduction Strategy in Outpatient Services	Patient satisfaction declined significantly when wait times exceeded 60 minutes, reflecting the need to evaluate service time standards.	Outcome
12	(Sarwat, 2022)	The Effects of Waiting Time on Patient Satisfaction	The high number of patients and the limited number of registration counters cause patients to leave the service before receiving medical services.	Structure; Outcome
13	(Biya et al., 2022)	Waiting Time in Jimma Hospitals, Ethiopia	Day of visit, location of residence, and education level were significantly associated with waiting time, indicating disparities in service access.	Structure
14	(Wulandari et al., 2022)	Queue Modelling and Simulation to Improve Waiting Times at the Vitreoretinal Polyclinic at the "DR.YAP" Yogyakarta Eye Hospital	Patient wait times exceeded the standard, but the Multi-Channel Multi-Phase queue model simulation successfully reduced wait times by up to 29% through scenarios involving increased human resources, improved practice timeliness, and the separation of laser procedures.	Structure; Process
15	(Agustina et al., 2023)	Factors that Determine Patient Waiting Time at Ahmad Yani Hospital	The unpreparedness of medical record files and delays in doctors starting their practice cause delays in the clinical service process.	Structure; Process
16	(Manyering et al., 2023) gle	The Relationship Between Waiting Time and Satisfaction at Soewandhie Hospital	No significant relationship was found between waiting time and patient satisfaction, suggesting the possible presence of non-technical compensatory factors.	Outcome
17	(Wardani Silvia Intan, 2024)	Determining Factors of Outpatient Waiting Time at Lawang Regional Hospital	Patient residence plays a structural role in variations in waiting times, particularly for patients from distant geographic areas.	Structure
18	(Zein & Mujizah, 2024)	Analysis of Registration Waiting Time at DKT Hospital Sidoarjo	A limited number of officers and manual medical records hurt the efficiency of the outpatient registration process.	Structure
19	(Dwi et al., 2024)	Waiting Time for BPJS Patient Services at Siti	The irregularity of doctors' employment status and the high volume of patient	Structure

No	Author and Year	Title	Research result	Donabedian Category
		Khadijah Hospital	visits cause a mismatch between practice schedules and service needs.	
20	(Shavira Aprilianti & Ulfah, 2024)	Waiting Time for Neurology Services at Malajaya Regional Hospital	The number of patients is not commensurate with the availability of doctors, and the lengthy administrative process causes waiting times to exceed standards.	Structure; Process

DISCUSSION

The outpatient facility is a functional unit that handles hospital admissions for patients. One dimension of service quality is access to services, as indicated by patient waiting times (Agustina et al., 2023). Patient waiting times reflect how the hospital manages service components tailored to the patient's situation and expectations (Sholihah & Parinduri, 2021). Donabedian's framework provides a systematic conceptual foundation for analysinganalysing health service quality through three main components: structure, process, and *outcome*.

The Influence of Service Structure on Outpatient Waiting Time

Based on the results of a literature review, service structure has been shown to significantly influence outpatient waiting times. This component encompasses various supporting elements of the service, including the availability of medical personnel, physical infrastructure, facilities, equipment, hospital information systems, and implemented technical and operational policies. In a study by Insani et al. (2020), it was noted that the lack of service facilities, such as patient chairs in the waiting room, causes patients to feel uncomfortable and bored while waiting for service. Based on research by Zein & Mujizah (2024) at DKT Hospital in Sidoarjo, it was found that inadequate facilities and infrastructure, particularly in network and computer systems, were a hindrance to outpatient medical record registration services. This obstacle prevented staff from providing optimal service, resulting in longer service times. As a result of this obstacle, patients' perceptions of the quality of hospital services declined, as slow administrative processes were perceived as lowering service quality.

Furthermore, human resources (HR) are a crucial factor influencing service delivery. Without HR, work processes within an organisation will not function effectively due to the nature of humans as the primary actors in various work activities (Mahadewi et al., 2019). Studies conducted by Dewi et al. (2020) and Zein & Mujizah (2024) demonstrate that limited human resources, particularly in terms of the number and distribution of healthcare workers, pose a significant obstacle to providing efficient services. This is further supported by findings from Purwoko & Nurwahyuni (2022) and Dwi et al. (2024), which revealed that physicians' employment status, including the presence of temporary physicians, also influences delays in initiating clinical services. Similar results were obtained in a study by Manyering et al. (2023), which found that long waiting times for outpatient services were primarily caused by an imbalance between the number of patients to be served and the number of doctors on duty at the clinic, resulting in long queues.

Social factors, such as patient residence, education level, and arrival time, can also contribute to disparities in waiting times, particularly in facilities with limited service access. (Eddy et al., 2022; Biya et al., 2022) . Conversely, a well-organised structure can support service efficiency. Research conducted by Wulandari et al. (2022) demonstrated that implementing a multi-*channel queuing system* and providing adequate supporting facilities can accelerate the service process and reduce queues. Therefore, the organisationalorganisational structure of a service plays a crucial role in establishing an operational foundation that supports effective wait-time management.

The Influence of Service Process on Outpatient Waiting Time

In addition to structural aspects, the service process is also a significant factor influencing patient waiting times. This includes the registration process, medical record management, patient-staff interactions, and coordination between service units. In a study by Insani et al. (2020), it was noted that many patients still feel confused about the outpatient service process, often requiring them to ask staff for further information. Various studies have shown that the service process, which affects waiting times, is due, among other things, to poor time discipline among medical personnel and a suboptimal queue management system. Fauziyyah (2021) and Agustina et al. (2023) reported that delays in doctors starting practice and the manual registration process can lead to queues accumulating since the morning. Research by Manyering et al. (2023) also noted that delays in the distribution of medical records can impact waiting times, as doctors cannot initiate services until the patient's medical records are received. This condition is a significant factor causing increased patient waiting times for services. Research by Sumayku et al. (2022), Jalili et al. (2020), and Muen et al. (2019) also identified similar obstacles: delays in the provision of medical records and long waiting times for laboratory tests.

Efforts to improve process aspects have been widely studied, including the integration of digital systems for registration and medical records, more structured practice scheduling, and enhanced time management (Iswanto, 2022). In some cases, *lean healthcare approaches* and queuing theory, such as *the first-in, first-served method,* have proven effective in streamlining service flows and reducing wasted time (Muen et al., 2019). Thus, process optimisation not only shortens service times but also improves cross-unit coordination, which can directly impact the patient experience.

The Effect of Waiting Time on Service Outcomes

The outcome of a service, in this case, is represented by the patient's level of satisfaction and comfort during the service. Studies show that waiting times that exceed patient expectations are consistently negatively associated with perceived service quality. According to Sholihah & Parinduri (2021), the service provided by registration officers and the length of waiting time before receiving health services are indicators of patient satisfaction as a quality of service in hospitals. Al-Harajin et al. (2019) and Sarwat (2022) suggest that excessively long wait times can lead to dissatisfaction and even cause patients to abandon their visit. Conversely, Toga-Sato et al. (2021) revealed that perceived wait times often have a greater impact than actual wait times, especially if patient expectations are not adequately managed. This highlights the importance of open communication regarding service time estimates as part of a patient perception management strategy.

However, satisfaction levels are not always related to wait times alone. A study by Manyering et al. (2023) found that patients still reported high levels of satisfaction even when the average wait time reached 100 minutes, suggesting that the quality of interpersonal interactions between medical personnel and patients can act as a compensatory factor. Therefore, evaluation of service *outcomes* cannot be separated from the structural dynamics and processes that precede them. Based on these findings, it is clear that service structure and processes play a complementary role in shaping outpatient wait times. When these two components are not optimally managed, patient outcomes tend to be unsatisfactory. Therefore, quality improvement strategies must be designed in an integrated manner, starting with human resource and infrastructure planning, developing efficient service flows, and strengthening communication and managing patient expectations. A Donabedian-based approach allows hospitals to systematically identify root causes and design more targeted interventions to reduce wait times and improve the overall quality of outpatient care.

CONCLUSION

The literature review shows that waiting times for outpatient services in hospitals are influenced by various factors that can be grouped into three main components of the Donabedian framework: structure, process, and outcomes. Dominant structural factors include limited medical personnel, inadequate infrastructure, suboptimal queuing systems, and social factors such as patient residence and education level. Regarding process factors, inefficient service flows, late doctor arrivals, and the use of manual administration systems are the leading causes of long waiting times. Meanwhile, from an outcome perspective, long waiting times negatively impact patient satisfaction and hospital image, both in actual and perceived terms by patients.

REFERENCES

Abdulai Alpha Jalloh, Laurine Chikodiri Nwosu, & SB (2020). *Evaluation of waiting time and associated factors influencing patient satisfaction levels in an outpatient department: A case study of government hospital in Sierra*. 1–9.

Agustina, F., Adyas, A., Djamil, A., Pramudho, PK, & Rahayu, D. (2023). Factors Associated with Waiting Time for Outpatients. *Malahayati Nursing Journal*, *5* (9), 3211–3228. https://doi.org/10.33024/mnj.v5i9.7471

Al-Harajin, RS, Al-Subaie, SA, & Elzubair, AG (2019). The association between waiting time and patient satisfaction in outpatient clinics: Findings from a tertiary care hospital in Saudi Arabia. *Journal of Family and Community Medicine*, *26* (1), 17–22. https://doi.org/10.4103/jfcm.JFCM_14_18

Biya, M., Gezahagn, M., Birhanu, B., Yitbarek, K., Getachew, N., & Beyene, W. (2022). Waiting time and its associated factors in patients presenting to outpatient departments at Public Hospitals of Jimma Zone, Southwest Ethiopia. *BMC Health Services Research*, *22* (1), 1–8. https://doi.org/10.1186/s12913-022-07502-8

Dewi, S., Machmud, R., & Lestari, Y. (2020). Analysis of Outpatient Waiting Times at Dr. Achmad Darwis Suliki Regional General Hospital in 2019. *Andalas Health Journal*, *8* (4), 175–184. https://doi.org/10.25077/jka.v8i4.1137

Dwi, MA, Paganini, R., Limisran, L., & Yulianto, N. (2024). Paganini, M. Ariq Dwi Rizky, Limisran Limisran, and Nova Yulianto. Review of BPJS Patient Service Waiting Time in Outpatient Services at Siti Khadijah Islamic Hospital, Palembang. Quantum Wellness: Journal of Health Sciences 1.4 (2024): 54–63. *Https://Journal.Lpkd.or.Id/Index.Php/QuWell* .

Eddy, KE, Vogel, JP, Scott, N., Fetene, D., Tidhar, T., Oladapo, OT, Piaggio, G., Nguyen, MH, Althabe, F., Bahl, R., Rao, SPN, De Costa, A., Gupta, S., Baqui, AH, Shahidullah, M., Chowdhury, SB, Ahmed, S., Sultana, S., Jaben, IA, … Raza, F. (2022). Antenatal dexamethasone for improving preterm newborn outcomes in low-resource countries: a cost-effectiveness analysis of the WHO ACTION-I trial. *The Lancet Global Health* , *10* (10), e1523–e1533. https://doi.org/10.1016/S2214-109X(22)00340-0

Fauziyyah, S. (2021). Analysis of Service Waiting Time on Patient Satisfaction at Cempaka Putih Regional Hospital in 2020. *Indonesian Journal of Hospital Management and Administration (MARSI)* , *5* (1), 89–96. https://doi.org/10.52643/marsi.v5i1.1299

Insani, RI, Sriatmi, A., & Fatmasari, EY (2020). Aspects of Waiting Time Dimensions that Influence Outpatient BPJS Patient Satisfaction at the Eye Polyclinic of William Booth Hospital, Semarang. *Student Scientific Journal* , *10* (3), 84–86.

Iswanto, AH (2022). Reducing Waiting Times in Hospital Outpatient Units. *Scientific Journal of Batanghari Jambi University* , *22* (1), 482. https://doi.org/10.33087/jiubj.v22i1.2040

Jalili, R., Mohebbi, M., Asefzadeh, S., & Mohebbi, M. (2020). Evaluation of Waiting Time and Satisfaction in Outpatients in Imam Hossein Polyclinic of Zanjan Using Patient-Pathway Analysis. *Preventive Care In Nursing and Midwifery Journal* , *10* (3), 34–41. https://doi.org/10.52547/pcnm.10.3.34

Mahadewi, EP, Heryana, A., Kurniawati, Y., & Ayuba, I. (2019). Analysis of Waiting Time for Lung Polyclinic Service at The Regional General Hospital (RSUD) Tangerang. *Gorontalo Journal of Public Health* , *2* (1), 110–119.

Manyering, GG, Wartiningsih, M., Messakh, BD, Tabita, H., & Silitonga, H. (2023). *The relationship between service waiting time and patient satisfaction levels* . *17* (2), 93–101.

Muen, S., Wanyonyi, S. W., Marangu, D. M., & Mong'are, O. D. (2019). Determinants and Management of Patient Waiting Time in the General Outpatient Department in Kibabii University Health Clinic, Kenya. *Asian Journal of Probability and Statistics* , *2* (4), 1–9. https://doi.org/10.9734/ajpas/2018/v2i428794

Ndu, IK, Osuorah, CDI, Amadi, OF, Ekwochi, U., Ekeh, BC, Nduagubam, OC, & Okeke, IB (2020). Evaluation of wait time in the children's emergency and outpatient units of a tertiary hospital in Southeast Nigeria. *Journal of Emergencies, Trauma and Shock* , *13* (1), 78–83. https://doi.org/10.4103/JETS.JETS_139_18

Nguyen, D.-H., Tran, D.-V., Vo, H.-L., Nguyen Si Anh, H., Doan, T.-N.-H., & Nguyen, T.-H.-T. (2020). Outpatient Waiting Time at Vietnam Health Facilities: Policy Implications for Medical Examination Procedures. *Healthcare* , *8* (1), 63. https://doi.org/10.3390/healthcare8010063

Purwoko, P., & Nurwahyuni, A. (2022). Factors Affecting Outpatient Waiting Time (Wtrj) in Hospitals a. *Indonesian Scientific Journal* , *7* (11), 16557– 16563.

Sarwat, A. (2022). the Effects of Waiting Time and Satisfaction Among Patients Visiting Medical Outpatient Department of a Tertiary Care Hospital Place and Duration of the Study Subjects and Methods. *J Pak Psychiatr Soc* , *18* (3).

Shavira Aprilianti, N., & Ulfah, A. (2024). Review of Outpatient Waiting Times at the Neurology Polyclinic to Improve the Quality of Health Services at Majalaya Regional Hospital. *Prepotif: Journal of Public Health* , *8* (2), 3704–3710. https://doi.org/10.31004/prepotif.v8i2.31666

Sholihah, N., & Khodijah Parinduri, S. (2021). The Relationship between Outpatient Waiting Time and BPJS Patient Satisfaction at the Heart Polyclinic of Bogor Islamic Hospital in 2019. *Promotor* , *3* (6), 585–597. https://doi.org/10.32832/pro.v3i6.5565

Sumayku, IM, Pandelaki, K., Kandou, GD, Wahongan, PG, & Nelwan, JE (2022). Analysis of Factors Associated with Waiting Time for Services at the Outpatient Polyclinic of Sentra Medika Hospital, North Minahasa Regency. *E-CliniC* , *11* (1), 1–10. https://doi.org/10.35790/ecl.v11i1.44251

Toga-Sato, S., Tosaki, T., Kondo, M., Tsunekawa, S., Kato, Y., Nakamura, J., & Kamiya, H. (2021). Impact of actual waiting time and perceived waiting time on treatment satisfaction in patients receiving outpatient diabetes care. *Diabetology International* , *12* (3), 293–300. https://doi.org/10.1007/s13340-020-00486-y

Wardani silvia intan. (2024). Determinants of Outpatient Waiting Time at Lawang Malang Hospital Determinants of Outpatient Waiting Time at Lawang Malang Hospital Intan Wardani Kusuma Widyawati Health Administration STIKES Kesdam IX / Udayana. *Journal of Medical Records and Health Information* , *7* (2), 113–126.

Wulandari, AD, Irwan Endrayanto Aluicius, & Firman Setya Wardhana. (2022). Queue

Modeling and Simulation to Improve Waiting Time at the Vitreoretinal Polyclinic of the "Dr. Yap" Eye Hospital, Yogyakarta. *The Indonesian Journal of Health Service Management* , *25* (01). https://doi.org/10.22146/jmpk.v25i01.4771

Zein, ER, & Mujizah, A. (2024). Review of Factors Influencing Waiting Times for Outpatient Registration Services at DKT Sidoarjo Hospital. *Imelda Scientific Journal of Health Recording and Information (JIPIKI)* , *9* (1), 80–89. https://doi.org/10.52943/jipiki.v9i1.1599.