Journal Title	: Asian Journal of Healthcare Analytics (AJHA)
Scope	: Health Sciences
Language	: Indonesia and English
Editor in Chief	: Genesis Sembiring
E-ISSN	: 2963-9905
Frequency	: May & November
DOI	: Prefix 10.55927
Office	: Jl. Sutomo Ujung No.28 D, Durian, Kecamatan Medan Timur, Kota Medan, Sumatera Utara 20235, Indonesia.
Email	: admin@formosapublisher.org
Publisher	: Formosa Publisher
Citation Analysis	: Google Scholar, Dimensions

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Vol. 4 No. 2 (2025): November 2025

Published: 2025-11-28

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Author : Galena Devi Prajgayatri[1], Eveline Margo[2*]

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		1	2	3		
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	research).					
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Quick sequential organ failure assessment with duration stay for intensive care patients

by Eveline

Submission date: 17-Nov-2025 06:58PM (UTC+0700)
Submission ID: 2408241096
File name: Template_ajha_inggris_qSOFA_eveline.docx (138.68K)
Word count: 3247
Character count: 18630

Asian Journal of Healthcare Analytics (AJHA)
Vol. 4, No. 2, 2025: ¬¬

Quick Sequential Organ Failure Assessment with Duration Stay for Intensive Care Patients

Galena Devi Prajgayatri[1], Eveline Margo[2*]
[1]Faculty of Medicine, Universitas Trisakti
[2]Department of Physiology, Faculty of Medicine, Universitas Trisakti
Corresponding Author: Eveline Margo eveline-margo@trisakti.ac.id

ARTICLEINFO

Keywords: Intensive Care Unit, Duration of Stay, Quick Sequential Organ Failure Assessment

Received : Tanggal, Bulan
Revised : Tanggal, Bulan
Accepted: Tanggal, Bulan

ABSTRACT

Duration of stay in the intensive care unit (ICU) is a crucial indicator for managing critically ill patients. Indonesia (2023) was reported that 68.2% of patients were treated in the ICU for five or more days. The quick Sequential Organ Failure Assessment (qSOFA) score is used to predict organ dysfunction and the risk of prolonged duration stay, however, research results on this subject remain inconclusive. This study aims to determine the association between the qSOFA score and duration stay in ICU patients.This was an observational study using a retrospective cohort design, conducted at RSAL Dr. Mintohardjo, Jakarta, utilizing secondary data from ICU patients referred from the emergency department between January-December 2024. Subjects were selected using consecutive sampling from all patients obtained 205 subjects that fulfills the inclusion criteria. The chi-square test was employed for statistical analysis with a significance level p value 0.05. Most subjects were aged 18–59 years (50.2%), with a majority being male (54.1%). The most common qSOFA score was 2 (43.9%), with an average duration of stay of 4.84±3.46 days. No significant association was found between qSOFA score and duration of stay in the ICU (p value = 0.326, p > 0.05).

DOI prefix: 10.55927
ISSN-E: 2963-9905
https://journal.formosapublisher.org/index.php/ajha

INTRODUCTION

The intensive care unit (ICU) is a facility designed to deliver specialized, intensive care to critically ill patients whose lives are in danger and require monitoring supported by various resources to sustain life during periods of organ insufficiency (Rosidawati & Hodijah, 2019). In the ICU, there is an emphasis on managing organ dysfunction (such as the lungs, kidneys, or heart) resulting from serious illness rather than directly addressing the primary disease etiology. The main goal of ICU services is to prevent deterioration of the patient's condition or maintain organ function stability while waiting for the underlying disease to be treated through definitive therapy (Marshall et al., 2017).

Management in intensive care unit patients follows a multidisciplinary approach, with responsibility shared between the initial referring medical team and the critical care team, coordinated by a critical care specialist. Consequently, due to the limitation of resource both medical personnel and financial cost the management of ICUs must be conducted prudently and judiciously. (Castro et al., 2018; Jackson & Cairns, 2021; Silaban & Tarigan, 2024)

In 2020, an international survey by the Global ICU Needs Assessment Research Group, disseminated to ICU providers in 34 countries, found that the most common ICU diagnoses were sepsis (88%), respiratory failure (88%), and heart failure (55%), with an average mortality rate of 14%, mean ICU length of stay of 5.2 days, and sepsis patient mortality of 21% (Nawaz et al., 2022). Research on the characteristics of critically ill patients in Indonesian ICUs remains limited compared to other countries. In Indonesia, ICU patient mortality rates reach 27.6%, with the leading causes being septic shock, chronic heart failure, and myocardial infarction (Silaban & Tarigan, 2024). During the COVID-19 pandemic in 2023, mortality rates in Indonesia rose to 68%, and 92% of cases required mechanical ventilation (Burhan et al., 2023).

Factors that contributing to prolonged ICU stays include age, sex, body mass index, nutritional status, patient knowledge, organ dysfunction, previous medical interventions (i.e., pre- and post-operative status), pre-existing chronic conditions, comorbidities, and nosocomial infections (Abqariah et al., 2024; Peres et al., 2020).

The World Health Organization (WHO) states that ICU duration of stay is a vital indicator for measuring and monitoring the performance of ICU healthcare facilities. In Indonesia in 2023, 68.2% of ICU patients had prolonged duration of stay (≥5 days) (Samarang et al., 2023). Prolonged ICUs makes duration of stay can impose risks on several parties: 1) patients: in addition to high costs, patients are at risk for nosocomial infections; 2) hospitals: increased LOS reduces patient bed turnover; 3) the healthcare system: resources, labor, and hospital equipment may be overwhelmed (Abqariah et al., 2024; Zhang & Kuo, 2024).

LITERATURE REVIEW

One tool for identifying high-risk patients outside the ICU is the qSOFA, composed of three parameters to predict organ dysfunction and mortality among patients with suspected infection. A higher qSOFA score indicates the

presence of organ dysfunction (Marik & Taeb, 2017). These criteria encourage clinicians to assess further for organ failure, initiate or escalate therapy as needed, and consider referral to critical care or increase monitoring frequency. A positive qSOFA can also prompt physicians to consider infection in previously unrecognized patients (Singer et al., 2016; Yeh et al., 2020). However, a study by Harsini et al., found no significant association between qSOFA score and duration of stay, limiting its use as a predictor for ICU. (Harsini et al., 2024) These varying results prompted the present study to investigate the association between qSOFA score and duration of stay, specifically in ICU patients admitted via the emergency department in Jakarta.

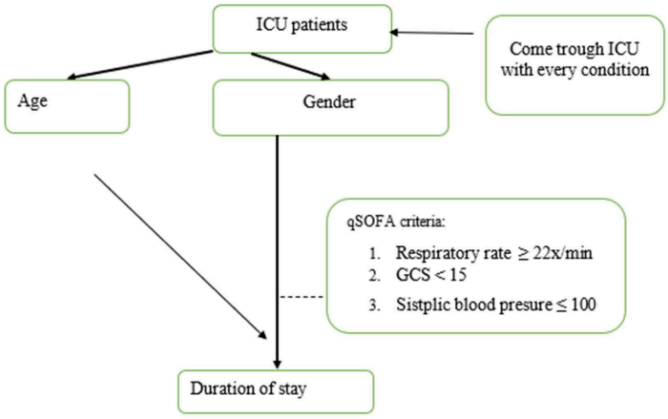

Figure 1. Framework

METHODOLOGY

This study was conducted in the ICU of RSAL Dr. Mintohardjo, Bendungan Hilir, Central Jakarta, with data collection carried out from April to May 2025. This observational study used a retrospective cohort design with secondary data. The total number of subjects was determined using the finite-infinite formula, based on the prevalence duration of stay in ICU at Indonesia is 68.2% (Samarang et al., 2023), resulting in a final sample size of 205. Subjects included all ICU patients admitted during a one-year period from January to December 2024, selected using consecutive sampling who met the following inclusion criteria: 1) male or female patients aged over 18 years; 2) admitted to the ICU after referral from the emergency department, either from RSAL Dr. Mintohardjo or another hospital. The exclusion criteria were: 1) patients with incomplete medical records; 2) patients transferred to another hospital for any reason. The duration of stay was calculated from the date of ICU admission to the date of discharge from the ICU, with a cutoff value of ≥10 days considered as a prolonged duration of stay (Almashrafi et al., 2016; Yenni et al., 2024). The

qSOFA criteria consist of: systolic blood pressure ≤100 mmHg, respiratory rate ≥22/min, and a Glasgow Coma Scale (GCS) score <15, each scored as 1 point, with a minimum score of 3 and a maximum of 3. (Marik & Taeb, 2017; Yeh et al., 2020) Data analysis was performed using the chi-square test with a significance level of 95% or p value <0.05.

This study was approved by the Ethics Review Committee of the Faculty of Medicine, Trisakti University, with ethical approval number 026/KER/FK/02/2025.

RESEARCH RESULT

Based on the subject characteristics shown in Table 1, the largest proportion of subjects were aged 18–59 years, comprising of 103 subjects (50.2%), with the majority being male 111 subjects (54.1%). The average systolic blood pressure was 131.48±37.92 mmHg, which falls within the high-normal range; the mean respiratory rate was 26.22±7.66 breaths per minute, exceeding normal adult values, indicating signs of respiratory distress; and the mean GCS was 11.05±4.45, suggesting that most subjects had a moderate state of consciousness. The mean length of stay was 4.84±3.46 days.

Table 1. Subject characteristics (n=205)

Variable	n (%)	Mean±SD
Age (years)		
18 – 59	103(50.2)	
≥ 60	102(49.8)	
Sex		
Male	111(54.1)	
Female	94(45.9)	
qSOFA Criteria		
Systolic pressure (mmHg)		131.48±37.92
Respiratory rate (x/minutes)		26.22±7.66
GCS		11.05±4.45
Duration of stay (days)		4.84±3.46

According to Table 2, most subjects (90 or 43.9%) had a qSOFA score of 2, indicating that the majority were at a moderate risk for organ dysfunction.

Table 2. Quick Sequential Organ Failure Assessment Score Distribution

Variable	n(%)
Score qSOFA	
0	16(7.8)
1	84(41)
2	90(43.9)
3	15(7.3)

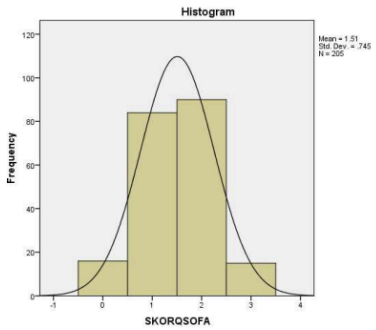

Figure 2. Histogram Score Distribution qSOFA

Based on Table 3 and Chi-square analysis, the significance value was p = 0.326 (p > 0.05), demonstrating no association between qSOFA score and ICU duration of stay.

Table 3. Quick Sequential Organ Failure Assessment Score and Length of Stay

qSoFA Score	Duration of Stay		*p value*
	≥ 10 days	< 10 days	
	n (%)	n (%)	
Total score ≥ 2	14 (60.8)	9 (39.2)	0.326
Total score < 2	91(50)	91 (50)	

Chi-square test *(p<0.05)*

DISCUSSION

In this study, the majority of subjects were aged 18–59 years (103 subjects, 50.2%), while those aged ≥60 years totaled 102 subjects (49.8%). Although the difference is relatively small, this indicates that adults represent the largest proportion of patients requiring intensive care in the ICU. (Bergeron et al., 2005)

Most subjects were male with 111 subjects (54.1%). This result is consistent with other studies, which state that males are more likely to require critical care in the ICU, although the duration of stay is generally similar for both sexes. Potential explanations include hormonal factors such as estrogen and testosterone, which are thought to modulate critical illness, though the effects vary depending on individual hormonal cycles and underlying medical conditions. (Lat et al., 2021; Susanti et al., 2024; Zettersten et al., 2020) Other research indicates higher mortality rates among male ICU patients, potentially due to a diminished immune response attributed to habits such as smoking and alcohol consumption.(Zirpe et al., 2021) However, a study by Bender et al. (2023) from Canada, the USA, Switzerland, Italy, Spain, and Australia found that sex was not associated with duration of stay.

In this study, 90 subjects (43.9%) had a qSOFA score of 2, indicating that an increase of 2 points in the qSOFA score is associated with an approximately four-fold higher risk of a length of stay greater than 9 days. Other studies have also shown that a qSOFA score ≥2 points results in a longer median length of stay (11 days) compared to a qSOFA score <2 points (6 days). Thus, a score of ≥2 points indicates an increased risk of mortality and prolonged duration of stay. (Yeh et al., 2020) Besides age and sex, factors such as occupation, education, income, comorbidities (DM, hypertension, cardiovascular diseases, COPD, pneumonia, sepsis, stroke, malignancy, etc.), hereditary diseases, family support, stress, and access to healthcare also influence the duration of stay. (Bender et al., 2023; Kharbuja et al., 2025; Lestari et al., 2025) The presence of these factors may because of pain patients, which in turn can disrupt sleep quality. Sleep disturbances during ICU treatment not only affect physical health but also impact psychological well-being, potentially slowing the healing process. (Lestari et al., 2025) Prolonged stress will stimulates the hypothalamus, anterior pituitary, and adrenal medulla, leading to increased secretion of epinephrine and norepinephrine, which elevate heart rate, contractility, blood pressure, and venous return. Persistent anxiety also impacts the adrenal cortex, increasing cortisol secretion, and affects melatonin secretion, which regulates sleep patterns. Consequently, patients have difficulty achieving restful sleep. Cytokines such as IL-6, TNF-α, and IL-1 are also released, leading to hemodynamic responses that can cause damage when acting in concert. IL-6 is responsive in the acute phase of inflammation and may serve as a prognostic indicator, particularly in sepsis. IL-8 predicts the development of multiple organ dysfunction syndrome (MODS). Nitric oxide (NO) regulates vascular tone, playing a key role in the pathophysiology of stress and shock. These circumstances can delay recovery and thus affect length of stay. (Fitri, 2014; Lestari et al., 2025) A global survey by the ICU Needs Assessment Research Group across 34 countries found that sepsis (88%), respiratory failure (88%), and cardiac failure (55%) were common ICU diagnoses, with an average duration of stay 5.2 days and a sepsis mortality rate of 21% (Nawaz et al., 2022). These findings are consistent with this study, which the mean duration of stay is 4.84±3.46 days.

The significance p value is 0.326 from the chi-square test between qSOFA and ICU duration of stay indicates no association ($p > 0.05$). This finding differs from other studies, where variations in timing of qSOFA score measurement may influence results. Previous studies generally calculated qSOFA as the highest score obtained within three hours before and after suspected infection onset. In this study, all ICU admissions were included regardless of their initial or infectious diagnosis. Despite these discrepancies, the present findings align with some prior research, which also found no significant relationship (p value = 0.479), though a qSOFA score ≥2 was still highly correlated with 28-day mortality (r=0.175). (Harsini et al., 2024)

In summary, most subjects in this study had intermediate risk (qSOFA score=2), mainly due to the presence of MODS, an acute, rapidly progressive condition marked by failure of two or more organ systems, commonly caused

by severe infection or trauma. Contributing factors include surgical and ICU interventions, such as secondary infections, ventilator-induced lung injury, stress, or iatrogenic factors, which may worsen patient outcomes and prolong duration of stay. (Arienti et al., 2021; D. F. Lestari et al., 2023)

In the beginning, qSOFA was originally developed specifically to detect the possibility of sepsis, so patients without suspected infection will be less appropriate for predicting the duration of hospital stay, which it showed in one of the study that the lower prediction score of qSOFA in non-sepsis patients, and than qSOFA's usage has expanded in clinical practice as a prognostic indicator in critically ill patients quickly to exam organ dysfunction and severity of illness in sepsis outside the ICU, such as in the emergency department or wards. (Moss et al., 2016). Despite the availability of other scoring system such as the New Early Warning Signs (NEWS), Modified Early Warning Score (MEWS), and Sequential Organ Failure Assessment (SOFA) which help identify organ dysfunction in potentially life-threatening infections, qSOFA remains a useful quick screening tool to evaluate infection. (Harsini et al., 2024)

CONCLUSIONS AND RECOMMENDATIONS

No significant association was found between the qSOFA score and the duration of stay in the ICU (p value = 0.326). Although the qSOFA score can still be used as an initial screening tool, it is insufficient as a sole predictor for assessing ICU duration of stay.

ADVANCED RESEARCH

Future assessments and predictions of ICU duration of stay should incorporate underlying diagnoses and other contributing variables, such as such as secondary infections, ventilator-induced lung injury, stress, or iatrogenic factors, comorbidities, to support the evaluation of hospital especially ICU duration of stay.

ACKNOWLEDGMENT

The researchers gratefully acknowledge RSAL Dr. Mintohardjo, Bendungan Hilir, Central Jakarta, for their cooperation and support, which enabled this study to be conducted.

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Quick sequential organ failure assessment with duration stay for intensive care patients

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Asian Journal of Healthcare Analytics (AJHA)
Vol. 4, No. 2, 2025: 241-250

Quick Sequential Organ Failure Assessment with Duration Stay for Intensive Care Patients

Galena Devi Prajgayatri[1], Eveline Margo[2*]
[1]Faculty of Medicine, Universitas Trisakti
[2]Department of Physiology, Faculty of Medicine, Universitas Trisakti
Corresponding Author: Eveline Margo eveline-margo@trisakti.ac.id

A R T I C L E I N F O

Keywords: Intensive Care Unit, Duration of Stay, Quick Sequential Organ Failure Assessment

Received : 1, October
Revised : 19, October
Accepted: 21, November

A B S T R A C T

An important metric for managing managing patients with serious illnesses is the duration of stay in the intensive care unit (ICU). According to data from Indonesia (2023), 68.2% among patients who were given treatment in the ICU for at least five days. Although research on this topic is still unclear, the quick Sequential Organ Failure Assessment (qSOFA) score is employed to forecast organ failure and the probability of prolonged duration stay. The aim of this study is to ascertain whether ICU patients' duration of stay and their qSOFA score are related. Getting secondary data from ICU patients admitted from the emergency room between January and December 2024, this observational study with a retrospective cohort design was carried out at Rumah Sakit Angkatan Laut Dr. Mintohardjo, Jakarta. 205 participants that met the inclusion criteria were chosen through successive sampling from all patients. For statistical analysis, the chi-square test was used with a significance level of p = 0.05. 50.2% of the individuals were between the ages of 18 and 59, and 54.1% of them were men, with an average stay of 4.84±3.46 days, the most prevalent qSOFA score was 2 (43.9%). The duration of stay in the ICU did not significantly correlate with the qSOFA score (p value = 0.326, p > 0.05).

DOI prefix: https://doi.org/10.55927/ajha.v4i2.15521
ISSN-E: 2963-9905
https://journal.formosapublisher.org/index.php/ajha

INTRODUCTION

The intensive care unit (ICU) was established unit to provide critically ill patients whose lives are in jeopardy and who need observation assisted by a variety of services in order to prolong life throughout periods of organ weakness (Rosidawati & Hodijah, 2019). Instead of directly addressing the fundamental disease etiology, the ICU places a strong focus on controlling organ dysfunction (such as the heart, kidneys, or lungs) brought on by catastrophic illness. Until the underlying disease is being treated with ultimate treatment, the primary objective of ICU care is to either maintain organ function stability or prevent the patient's state from getting worse (Marshall et al., 2017).

Patients in intensive care units are managed using a multidisciplinary approach, with the critical care team, led by a critical care expert, and the initial referring medical team sharing accountability. Consequently, the management of intensive care units (ICUs) needs to be done carefully and cautiously because of the scarcity of medical staff and financial resources (Silaban & Tarigan, 2024; Jackson & Cairns, 2021; Castro et al., 2018).

With an overall death rate of 14%, the majority of frequent ICU diagnoses were sepsis (88%), respiratory failure (88%), and heart failure (55%), with average ICU duration of stay are 5.2 days, according to a 2020 global survey conducted by the Global ICU Needs Assessment Research Group and distributed to ICU mainstay in 34 countries (Nawaz et al., 2022). Compared to other nations, there is currently a scarcity study on the features of patients with serious illnesses in Indonesian's ICU. Septic shock, persistent heart failure, and myocardial infarction (27.6%) are the main causes of Indonesia's ICU patient fatality rates (Silaban & Tarigan, 2024). During the COVID-19 epidemic in 2023, 68% of Indonesians died, and 92% of those victims needed mechanical breathing (Burhan et al., 2023).

Extended stays in the ICU are caused by a lot number of factors, including age, gender, body mass index, food habits, patient's knowledge, organs failure, previous medical interventions (such as pre- and post-operative status), pre-existing chronic disorders, comorbidities, and nosocomial illness (Abqariah et al., 2024; Peres et al., 2020).

ICU duration of stay is a crucial metric to assessing and tracking the effectiveness of ICU healthcare facilities, in accordance with the World Health Organization (WHO). Study said 68.2% of ICU patients in Indonesia in 2023 had stays longer than five days (Samarang et al., 2023). Long stays in intensive care units can put a number of people at risk: 1) Patients: along with hefty costs, patients are susceptible to nosocomial infections; 2) Hospitals: higher length of stay (LOS) lowers bed utilization turnover; 3) The healthcare system: hospital equipment, labor, and resources may be overloaded (Abqariah et al., 2024; Zhang & Kuo, 2024).

LITERATURE REVIEW

The qSOFA, which consists of three indicators to predict organ failure and mortality among patients with suspected infection, is one technique for detecting high-risk patients outside the intensive care unit. Organ dysfunction is indicated by a higher qSOFA score (Marik & Taeb, 2017). Clinicians are encouraged by these criteria to perform additional organ failure assessments,

start or intensify treatment as necessary, and think about referrals to critical care or more frequent monitoring. Additionally, a positive qSOFA may lead doctors to suspect infection in patients who were not previously diagnosed (Singer et al., 2016; Yeh et al., 2020). However, research discovered no meaningful connection among qSOFA score and duration of stay, restricting application as an ICU prediction (Harsini et al., 2024). These inconsistent findings led to the current study's investigation of the relationship between qSOFA score and duration of stay, particularly in Jakarta's ICU patients hospitalized through the emergency room.

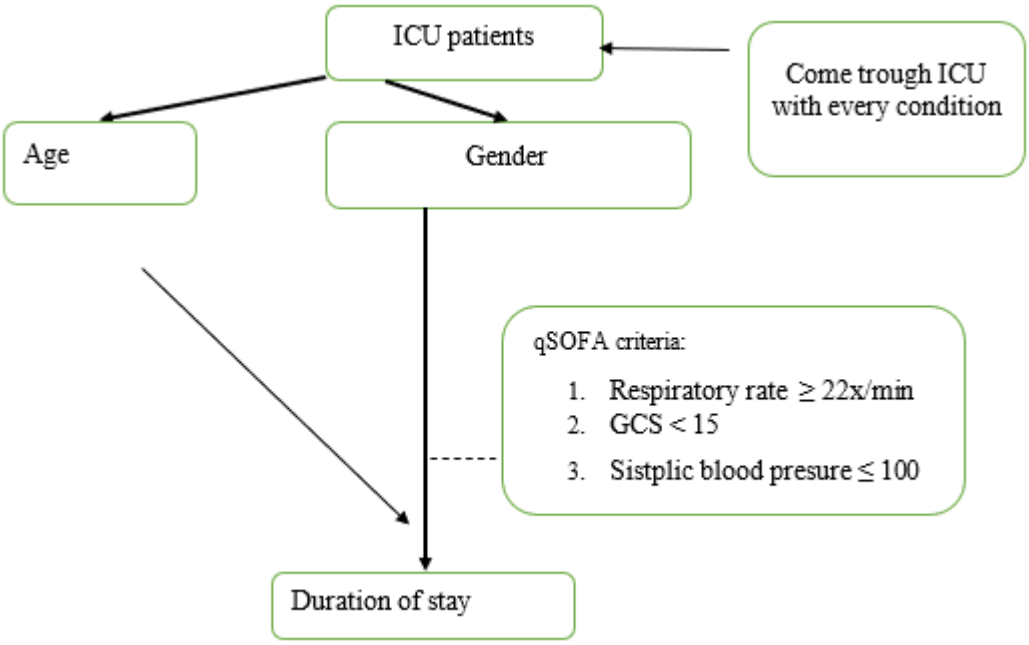

Figure 1. Framework

METHODOLOGY

Data collecting for this study took place between April and May of 2025 in the intensive care unit of Rumah Sakit Angkatan Laut Dr. Mintohardjo in Bendungan Hilir, Central Jakarta. This observational study included secondary data and a retrospective cohort approach. Considering the frequency of ICU stay duration in Indonesia, which is 68.2% (Samarang et al., 2023), the total number of individuals was calculated using the finite-infinite calculation, yielding a final sample are 205 subjects. All ICU patients who were admitted between January and December of 2024 and who satisfied the following inclusion criteria were chosen using successive sampling as subjects: 1) patients, either male or female, who are older than eighteen; 2) transferred to the intensive care unit on a referral from the emergency room, either from Rumah Sakit Angkatan Laut Dr. Mintohardjo or another hospital. Patients with incomplete medical records and those who were transferred to another institution for whatever reason were the two exclusion criteria. A cutoff value of ≥10 days was regarded as a prolonged period of stay (Almashrafi et al., 2016; Yenni et al., 2024). The duration of stay was computed from the date of

hospitalization to the date of discharge from the ICU. The systolic blood pressure measured below ≤ 100 mmHg, the respiration rate up ≥ 22/min, and Glasgow Coma Scale (GCS) score below < 15 are the qSOFA criteria. Each of these factors is worth one point, with a minimum score of two and a maximum score of three (Yeh et al., 2020; Marik & Taeb, 2017). The data was evaluated using the chi-square test with a threshold of significance of 95% or p value <0.05.

The Committee for Ethics Review of Universitas Trisakti, Faculty of Medicine approved this study with the ethical approval number is 026/KER/FK/02/2025.

RESEARCH RESULT

According to Table 1's subject characteristics, 103 individuals (50.2%) were between the ages of 18 and 59, while 111 subjects (54.1%) were male. The mean GCS was 11.05 ± 4.45, indicating that the majority of participants were in a moderate state of consciousness; the average respiratory rate was 26.22 ± 7.66 breaths per minute, indicating signs of respiratory distress; and within high-normal range, the mean systolic blood pressure was 131.48 ± 37.92 mmHg. The average duration was 4.84 ± 3.46 days.

Table 1. Subject characteristics (n=205)

Variable	n (%)	Mean±SD
Age (years)		
18 – 59	103(50.2)	
≥ 60	102(49.8)	
Sex		
Male	111(54.1)	
Female	94(45.9)	
qSOFA Criteria		
Systolic pressure (mmHg)		131.48±37.92
Respiratory rate (x/minutes)		26.22±7.66
GCS		11.05±4.45
Duration of stay (days)		4.84±3.46

Table 2 shows that the majority of individuals (90 or 43.9%) were at a moderate risk of organ malfunction, with a qSOFA score of 2.

Table 2. Quick Sequential Organ Failure Assessment Score Distribution

Variable	n(%)
Score qSOFA	
0	16(7.8)
1	84(41)
2	90(43.9)
3	15(7.3)

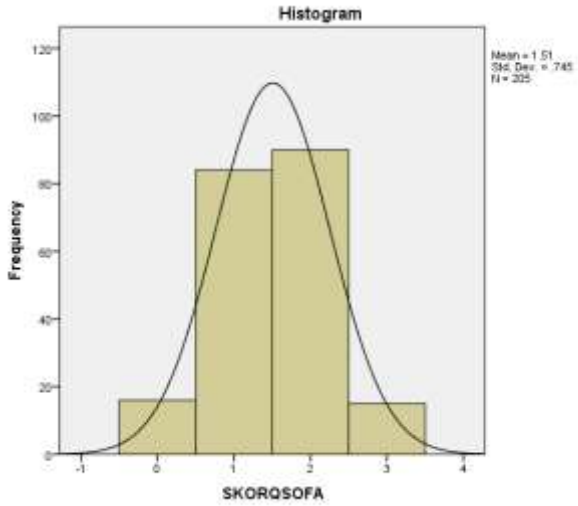

Figure 2. Histogram Score Distribution qSOFA

There was no correlation among the score of qSOFA and the duration of stay in the ICU according to Table 3 and Chi-square test analysis, with a significance p value = 0.326 (p > 0.05).

Table 3. Quick Sequential Organ Failure Assessment Score and Length of Stay

qSoFA Score	Duration of Stay		*p value*
	≥ 10 days	< 10 days	
	n (%)	n (%)	
Total score ≥ 2	14 (60.8)	9 (39.2)	0.326
Total score < 2	91(50)	91 (50)	

Chi-square test *(p<0.05)*

DISCUSSION

In this study, 103 subjects (50.2%) were between the ages of 18 and 59, while 102 subjects (49.8%) were over the age of 60. This suggests that adults make up the majority of patients needing intense care in the critical care unit, despite the modest discrepancy. (Bergeron and others, 2005)There were 111 subjects (54.1%) who were male. This outcome is in line with recent research showing that, while the length of stay is generally comparable for both sexes, men are more likely to need critical care in the intensive care unit. Hormones like estrogen and testosterone are known to influence critical disorders; however, the effects vary based on individual hormonal cycles and underlying medical conditions (Lat et al., 2021; Susanti et al., 2024; Zettersten et al., 2020). Compared to various studies, male ICU patients have greater death rates, which may be caused by a weakened immune system brought on by behaviors like drinking alcohol and smoking (Zirpe and others, 2021). However, a study conducted in Canada, the USA, Switzerland, Italy, Spain, and Australia by Bender et al. (2023) discovered no correlation between sex and duration of stay.

In this study, 90 subjects (43.9%) had a qSOFA score of 2, meaning that a two-point rise in the score is roughly four times more likely to result in a stay longer than nine days. A longer median length of stay (11 days) is associated with a qSOFA score ≥2 points than with a qSOFA score <2 points (6 days), according to other research. Therefore, a score of ≥2 points denotes a longer stay and a higher chance of death (Yeh and others, 2020). In addition to age and sex, other variables that affect the length of time include employment, education, income, comorbidities (diabetes, high blood pressure, heart diseases, COPD, pneumonia, sepsis, stroke, cancer, and etc.), inherited diseases, family assistance, stress, and the availability to healthcare also influence the duration of stay (Bender et al., 2023; Kharbuja et al., 2025; Lestari et al., 2025). Pain patients may be the source of these variables, which can impair the quality of their sleep. In addition to having an influence on physical health, sleep disturbances during ICU treatment can have an impact on psychological well-being, which may impede the healing process (Lestari et al., 2025). Long-term stress causes the hypothalamus, anterior pituitary, and adrenal medulla to become more active. This increases the release of norepinephrine and adrenaline, which raises blood pressure, heart rate, contractility, and venous return. Additionally, persistent anxiety affects melatonin secretion, which controls sleep patterns, and the adrenal cortex, which increases cortisol release. As a result, patients struggle to get a good night's sleep. Additionally, cytokines including TNF-α, IL-1, and IL-6 are released, causing hemodynamic reactions that, when combined, might be harmful. IL-6 may be a prognostic marker, especially in sepsis, and is sensitive during the acute phase of inflammation. Multiple organ dysfunction syndrome (MODS) is predicted by IL-8. The pathophysiology of stress and shock is significantly influenced by nitric oxide (NO), which controls vascular tone. These conditions may impact the length of stay by delaying recovery (Fitri, 2014; Lestari et al., 2025). According to a global assessment carried out by the ICU Needs Assessment Research Group across 34 countries, the most common ICU diagnoses were sepsis (88%), respiratory distress syndrome (88%), and heart failure (55%), with mean duration of stay was 5.2 days and sepsis fatality rate of 21% (Nawaz et al., 2022). These findings are consistent with the study's finding that the average duration of stay was 4.84 ± 3.46 days.

There is no correlation ($p > 0.05$) between qSOFA and ICU duration of stay, according to the chi-square test's significance p value of 0.326. This conclusion is different from other studies where results may be affected by differences in the time of the qSOFA score measurement. The highest score obtained within three hours prior to and following probable infection onset was typically used to calculate qSOFA in earlier research. Regardless of the original or infectious diagnosis, all ICU admissions were included in this study. Despite these differences, the current results are consistent with other earlier studies that also found no significant link (p value = 0.479), while a qSOFA score of ≥2 was still highly correlated with 28-day mortality (r=0.175) (Harsini et al., 2024).

In conclusion, MODS, an acute, quickly progressing illness characterized by the failure of two or more organ systems and frequently brought on by

severe infection or trauma, was the primary cause of the majority of study participants' intermediate risk (qSOFA score=2). Surgical and intensive care unit interferences, such as secondary infections, ventilator-induced lung injury, stress, or iatrogenic causes, are contributing variables that might affect patient outcomes and lengthen hospital stays (Arienti et al., 2021; D. F. Lestari et al., 2023).

In order to assess organ failure and the severity of sepsis outside of the ICU, such as in emergency departments or hospital wards, the use of qSOFA as a prognostic indicator in patients with serious illnesses has grown in clinical practice. Initially, qSOFA was developed specifically to detect the possibility of sepsis, so patients without suspected infection will be less appropriate for predicting the duration of hospital stay. One study found that the lower prediction score of qSOFA in non-sepsis (Moss et al., 2016). qSOFA is still a helpful rapid screening tool to assess infection, even with the presence of alternative scoring methods like the New Early Warning Signs (NEWS), Modified Early Warning Score (MEWS), and Sequential Organ Failure Assessment (SOFA), which aid in identifying organ dysfunction through become potentially fatal infections (Harsini et al., 2024).

CONCLUSIONS AND RECOMMENDATIONS

The duration of stay in the ICU did not significantly correlate with the qSOFA score (p value = 0.326). The qSOFA score is insufficient as a single predictor for determining ICU's duration of stay, even though it can still be utilized as an initial screening tool.

ADVANCED RESEARCH

In order to support the prediction of ICU's duration, the evaluation of hospitals should take into account baseline medical conditions and additional co-factors, instance like secondary infections, ventilator-induced lung injury, stress, iatrogenic factors, and comorbidities.

ACKNOWLEDGMENT

The researchers would like to express their appreciation to Rumah Sakit Angkatan Laut Dr. Mintohardjo, Bendungan Hilir, Central Jakarta, for helping to make this study possible.

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