

LAMPIRAN

Lampiran 1**PENILAIAN ANALISIS *CRITICAL APPRAISAL JBI (JOANNA BRIGGS INSTITUTE)*****INSTRUMENT JOANNA BRIGGS INSTITUTE (JBI)****CRITICAL APPRAISAL CHECKLIST FOR ANALYTICAL CROSS
SECTIONAL STUDIES****A. LEMBAR CEKLIST JBI****1. Critical Appraisal Systematic Review : *The Risk Factor For Mortality In Covid-19 Patients In Mohammad Hoesin Hospital, Palembang, Indonesia***

Instrumen Joanna Briggs Institute (JBI)

Critical Appraisal Checklist For Analytical crosssectional studies

Reviewer	: Sri Wulandari	Date : 31 Maret
Author	: Rico Januar Sitorus	Year : 2021
Record Number	: ISSN 4548-7949	

	Yes	No	Unclear	Not Applicable
1. Apa kriteria untuk yang dimasukkan dalam sampel Di definisikan secara jelas?	√			
2. Apakah subjek penelitian dan latarnya dijelaskan Secara rinci?	√			
3. Apakah eksposur diukur dengan cara yang valid dan dapat diandalkan?	√			
4. Apakah kriteria standar yang objektif digunakan untuk mengukur kondisi?	√			
5. Apakah faktor perancu Diidentifikasi?	√			
6. Apakah strategi untuk menangani faktor perancu dinyatakan?		√		
7. Apakah hasil diukur dengan cara yang valid dan dapat diandalkan?	√			
8. Apakah analisis statistic dapat digunakan?	√			

2. *Critical Appraisal Systematic Review : Clinical Profile of Elderly Patients with COVID-19 Hospitalized in Indonesia's National General Hospital*

Instrumen Joanna Briggs Institute (JBI)

Critical Appraisal Checklist For Analytical crosssectional studies

Reviewer : Sri Wulandari Date : Juli
 Author : Rico Januar Sitorus Year : 2020
 Record Number : ISSN 4548-7949

Yes No Unclear Not
 Applicable

1. Apa kriteria untuk yang dimasukkan dalam sampel Di definisikan secara jelas?	√			
2. Apakah subjek penelitian dan latarnya dijelaskan Secara rinci?	√			
3. Apakah eksposur diukur dengan cara yang valid dan dapat diandalkan?	√			
4. Apakah kriteria standar yang objektif digunakan untuk mengukur kondisi?	√			
5. Apakah faktor perancu Diidentifikasi?	√			
6. Apakah strategi untuk menangani faktor perancu dinyatakan?		√		
7. Apakah hasil diukur dengan cara yang valid dan dapat diandalkan?	√			
8. Apakah analisis statistic dapat digunakan?	√			

3. *Critical Appraisal Systematic Review* : **Analisis Faktor Risiko Kematian Dengan Penyakit Komorbid Covid-19**

Instrumen Joanna Briggs Institute (JBI)

Critical Appraisal Checklist For Cohort studies

Reviewer : Sri Wulandari Date : Desember
 Author : Raden Muhammad Ali S Year : 2020
 Record Number : ISSN 2581-1975

Yes No Unclear Not
 Applicable

1. Apakah kedua kelompok serupa dan direkrut dari populasi yang sama?	√			
2. Apakah eksposur diukur dengan cara yang sama untuk menetapkan orang?	√			
3. Untuk kedua kelompok terpapar dan tidak terpapar?	√			
4. Apakah eksposur diukur dengan cara yang valid dan dapat diandalkan?	√			
5. Apakah faktor perancu diidentifikasi?	√			
6. Apakah strategi untuk menangani faktor perancu dinyatakan?		√		
7. Apakah kelompok/peserta bebas dari hasil pada awal penelitian (atau pada saat pemaparan)?		√		
8. Apakah hasil diukur dengan cara yang valid dan dapat diandalkan?	√			
9. Apakah waktu tindak lanjut dilaporkan dan Cukup lama untuk menghasilkan hasil?		√		
10. Apakah tindak lanjut lengkap, dan jika tidak Apakah alasan mangkir dijelaskan dan di Eksplorasi?		√		

11. Apakah strategi untuk mengatasi tindak Lanjut yang tidak lengkap telah digunakan?
12. Apakah analisis statistik yang tepat Digunakan?

	√		
√			

B. PENILAIAN REKOMENDASI *JOANNA BIRGGS INSTITUE (JBI)*

No	Jurnal	Nilai Rekomendasi
1.	<i>The Risk Factor For Mortality In Covid-19 Patients In Mohammad Hoesin Hospital, Palembang, Indonesia</i>	A
2.	<i>Clinical Profile of Elderly Patients with COVID-19 Hospitalized in Indonesia's National General Hospital</i>	A
3.	Analisis Faktor Risiko Kematian Dengan Penyakit Komorbid Covid-19	A

Lampiran 2**CATATAN BIMBINGAN SKRIPSI**




Nama : Sri Wulandari





NIM : AK117190

Judul : Hubungan Komorbiditas penyakit Covid-19 dengan kejadian *Net Death Rate* (NDR) di Rumah Sakit

Pembimbing Utama : Ani Rasiani D S.Kep., Ners., M.Kep

Pembimbing Pendamping : Raihani S. Mukaromah S.Kep., Ners., M.Kep

No	Hari/Tanggal	Catatan Pembimbing 1	TTD
1.	Selasa, 30-12-2020	1. ACC judul	
2.	Jum'at, 15-1-2021	1. Data Komorbid terbanyak di dunia, Indonesia, dan Jawa Barat	
3.	Minggu, 21-1-2021	1. Analisis Jurnal 2. Perbaikan Kerangka Konsep 3. Teori Penatalaksanaan Komorbiditas 4. Penambahan kriteria Inklusi	

		dan Eksklusi	
4.	Minggu, 7-3-2021	1. ACC BAB I,II,III, dan IV 2. Daftar Sidang UP	
5.	Sabtu, 5-6-2021	1. Tentukan seberapa banyak pasien covid-19 meninggal disebabkan karena apa	
6.	Minggu, 20-6-2021	1. Penyesuaian penilaian jurnal berdasarkan JBI 2. Menganalisis jurnal	
7.	Minggu, 11-7-2021	1. Perbaiki abstrak 2. Kelebihan dan kekurangan jurnal 3. Analisis hasil penelitian ACC Sidang Akhir	

CATATAN BIMBINGAN SKRIPSI




Nama : Sri Wulandari




NIM : AK117190






Judul : Hubungan Komorbiditas penyakit Covid-19 dengan kejadian *Net Death Rate* (NDR) di Rumah Sakit

Pembimbing Utama : Ani Rasiani D S.Kep., Ners., M.Kep

Pembimbing Pendamping : Raihani S. Mukaromah S.Kep., Ners., M.Kep

No	Hari/Tanggal	Catatan Pembimbing 2	TTD
1.	Rabu, 23-12-2020	<ol style="list-style-type: none"> 1. Data prevalensi LOS saja yang dicantumkan 2. Tambahkan prevalensi data PTM menurut WHO, Indonesia, Jawa Barat 3. Tambahan faktor yang mempengaruhi berdasarkan teori siapa 4. Kurangi teri mengenai DM 	
2.	Sabtu, 26-12-2020	<ol style="list-style-type: none"> 1. Dampak LOS 2. Data LOS dari Jurnal 3. Jenis penyakit akut, kronik 4. Dampak Komplikasi DM 	
3.	Kamis, 31-12-2020	<ol style="list-style-type: none"> 1. Prevalensi Covid menurut WHO, Indonesia, Jawa 	

		Barat 2. Konsep Komorbiditas 3. Prevalensi Komorbiditas 4. Data <i>NDR</i> di puskesmas dan Rumah Sakit 5. Penjelasan Mengapa dirumah sakit tidak dipuskesmas 6. ACC judul lanjut Bab 2 dan 3	
4.	Kamis, 5-1-2021	1. Alasan di Rumah Sakit	
5.	Minggu, 17-1-2021	1. ACC BAB I	
6.	Minggu, 17-1-2021	1. Konsep Rumah Sakit 2. Konsep Covid-19 3. Komorbiditas Penyakit Covid 4. Konsep Mutu Pelayanan Rumah Sakit 5. Konsep Net Death Rate 6. Kerangka Konsep	
7.	Sabtu, 6-2-2021	1. BAB III penambahan kriteria inklusi dan eksklusi 2. ACC BAB II 3. Pembahasan mengenai JBI, <i>Critical</i>	

		<p><i>Appraisal Analytical Crosssectional Studies</i></p> <p>4. Teknik Pencarian Fokus pada yang diambil</p> <p>5. Pembahasan <i>APAstyle</i></p>	
8.	Sabtu, 27-2-2021	<p>1. ACC BAB III dan IV</p> <p>2. Perbaiki Prisma Flow</p> <p>3. Lengkapi lapiran, daftar pustaka, daftar isi, kata pengantar, lembar persetujuan</p>	
9.	Kamis, 11-2-2021	1. Daftar Sidang UP	
10.	Kamis, 3-6-2021	1. ACC Revisi lanjut BAB 5	
11.	Kamis, 24-6-2021	<p>1. Kelebihan dan kekurangan jurnal</p> <p>2. Tambahkan teori dalam pembahasan</p> <p>3. Membuat Abstrak</p>	
12.	Kamis, 1-7-2021	ACC Sidang Akhir	

Lampiran 3

MATRIKS EVALUASI SKRIPSI
PROGRAM STUDI SARJANA KEPERAWATAN
TAHUN AKADEMIK 2019/2021

Nama Mahasiswa : **Sri Wulandari**

NIM : **AK117190**

Pembimbing : Ani Rasiani, S.Kep., Ners, M.Kep. dan Raihany, S.Kep.,
 Ners, M.Kep.

Penguji 1 : Dedep Nugraha., S.Kep., Ners, M.Kep

No	Perbaikan / Masukan (diisi pada saat ujian oleh Penguji)	Hasil Revisi (diisi oleh Mahasiswa sebagai bentuk jawaban perbaikan/masukan Penguji)
1	Redaksi daftar isi dan dapus 1,5 spasi masih banyak typo, cara penulisan referensi	
2	BAB I : Penulisan paragraph justifikasi abil angka kematian	Halaman 3
3	BAB II : Tambahkan teori RS	Halaman 10
4	BAB IV : Cek Instrumen	
	Redaksional : Daftarisi : 1 spasi	Syarat Abstract IMRAD, max 200 kata
	BAB I	
	BAB II	
	BAB III	
	BAB IV	
	BAB V Font di dalam table boleh kurang dari 12	halaman 57

	Pembahasan : sesuai hasil penelitian	
	<p>BAB VI</p> <p>Kesimpulan dibuat lebih ringkas (simpulan – tidak panjang lebar)</p> <p>Saran yang sifat operasional (dilakukan / diterapkan)</p> <p>Cara membuat saran harus diambil dari pembahasan</p>	halaman 68

Mengetahui,

Sebelum Revisi		Setelah Revisi	
1.	Mahasiswa :	1.	Mahasiswa :
2.	Pembimbing :	2.	Pembimbing :
3.	Penguji :	3.	Penguji :

Nama Mahasiswa : Sri Wulandari

NIM : AK117190

Pembimbing : Ani Rasiani, S.Kep., Ners, M.Kep. dan Raihany, S.Kep.,
Ners, M.Kep.

Penguji 2 : Nur Intan Hayat, H.K., S.Kep., Ners, M.Kep

No	Perbaikan / Masukan (diisi pada saat ujian oleh Penguji)	Hasil Revisi (diisi oleh Mahasiswa sebagai bentuk jawaban perbaikan/masukan Penguji)
1	Kenapa meneliti NDR? Ada Urgensi apa di NDR apa bedanya dengan angka kematian? Ada apa dengan komorbid, apa saja yang masuk komorbid?	Halaman 3 (karena presentase NDR/angka kematian per 5 Desember sebesar 2,39%. Dan presentase NDR/angka kematian di Indonesia tinggi) Halaman 4 (pasien dengan komorbid memiliki angka kematian yang cukup tinggi, dengan jenis komorbid diantaranya Hipertensi, diabetes mellitus, penyakit kardiovaskuler, dan penyakit sistem pernafasan)
2	Covid, ndr, komorbid mekanismenya jelaskan?	Halaman 7 (komorbiditas penyakit pada pasien covid 19 dapat menyebabkan pasien meninggal sehingga indikator standar mutu pelayanan Rumah Sakit menjadi turun salah satunya kejadian <i>Net Death Rate</i> meningkat, sehingga mengganggu atas kinerja pelayanan rumah sakit yang ditentukan)
3	Di sampel harus jelas apa yang dipakai JBI yang dipakai Hindari Shihub	Halaman 60
4	Jelaskan tehnik pelaksanaan litrev, inklusi dan eksklusinya tehnik apa style dan keyword yang dipakai	Halaman 57
5	perbaiki penulisan	

6	<p>Penulisan disesuaikan panduan , dirapikan</p> <p>Abstrak kuatkan di dalam pembahasan dan diskusi , konten ke variable yg diteliti, jangan keluar jalur jadi kemutu perawatan atau pelayanan RS</p>	
	<p>Bab I</p> <p>Lengkapi fenomena dan kuatkan</p>	halaman 1
	<p>Bab 2</p> <p>Mekanisme hubungan di lengkapi</p>	halamanan 23
	<p>Bab 3</p> <p>Populasi dan sample dilengkapi</p> <p>Konsistensi design lengkapi</p>	halaman 43
	<p>Bab 4</p> <p>Gunakan Bahasa hasil udah spesifik hasil penelitian</p>	halaman 50
	<p>Bab 5</p> <p>Pada pembahasan kemukaan pendapat bagaimana hubungan penyakit kormobid bisa buat meninggal dan penyakit pa aja yang dominan dan seperti apa</p>	halaman 61

	upaya untuk pencegahannya	
	<p>Bab 6</p> <p>Simpulan mengacu pada tujuan</p> <p>Saran mengacu pada hasil dipembahasan dan manfaat penelitiannya</p> <p>➔ Bagi perawat dan RS lihat apa kesesuaian dengan penelitian</p> <p>➔ Lihat penelitian saran ke original riset</p>	halaman 69

Mengetahui,

Sebelum Revisi		Setelah Revisi	
1.	Mahasiswa :	1.	Mahasiswa :
2.	Pembimbing :	2.	Pembimbing :
3.	Penguji :	3.	Penguji :

Lampiran 4

BUKTI MENJADI OPONEN

Nama : Sri Wulandari

NIM : AK 1.17.190

No	Hari/Tanggal	Penyaji	Judul Proposal	Tanda tangan Moderator	Ket
1.	Kamis, 1 April 2021	Desri Nanda	Hubungan Dukungan Keluarga dengan Kepatuhan Minum Obat Pada Pasien Skizofrenia	Raihany, S.Kep., Ners, M.Kep	Apa alasan peneliti memilih penyakit skizofrenia
2.	Sabtu, 24 April 2021	Neng Yuli	Hubungan Tingkat Stress dengan Kejadian Gastritis	R. Siti Jundiah, S.Kp., M.Kep	Apa dan bagaimana amanfaat dalam penelitian ini
3.	Kamis, 6 Mei 2021	Mustaghfir oh	Pengaruh Kompres Serai Hangat terhadap Penurunan Tingkat Nyeri Rheumatoid Arthritis Pada Lansia	Titin Mulyati, S.Kp., M.Kep	Jelaskan Fenomena pada penelitian ini

Lampiran 5

Lembar pernyataan bebas plagiarisme

PERNYATAAN BEBAS PLAGIARISME

Yang bertanda tangan dibawah ini:

Dengan ini menyatakan dengan sesungguhnya bahwa penelitian saya yang berjudul :**Hubungan Komorbiditas Penyakit Covid-19 dengan Kejadian *Net Death Rate* di Rumah Sakit : *Literature Review***

Bebas dari plagiarism dan bukan hasil karya orang lain.

Apabila dikemudian hari ditemukan seluruh atau sebagian dari penelitian dan karya ilmiah tersebut terdapat indikasi plagiarisme, saya **bersedia menerima sanksi** sesuai dengan ketentuan yang berlaku.

Demikian surat pernyataan ini saya buat dengan sesungguhnya tanpa ada paksaan dari siapapun juga dan untuk dipergunakan sebagaimana mestinya.

Bandung, 11 Juli 2021

(Sri Wulandari)
NIM : AK.117.190

Pembimbing Utama



Ani Rasiani, S.Kep., Ners, M.Kep

Pembimbing Pendamping



Raihany, S.Kep., Ners, M.Kep
NIK : 0429089102

S1 kepan AK117190 Sri Wulandari

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Lampiran 6

Riwayat Hidup



Nama : Sri Wulandari
NIM : AK 1.17.190
Tempat Tanggal Lahir : Sukabumi, 14 November 1998
Alamat : Perum. Bumi Abdi Negara III blok C3
No.3 RT/RW 10/23 Kab. Bandung

Pendidikan

1. TK : Nikita
2. SD : Muslimin Panyaungan 02
3. SMP : SMPN 1 Cileunyi
4. SMK : SMK Kes. Bhakti Kencana Cileunyi
5. Universitas : Universitas Bhakti Kencana

Lampiran 7

Sampel Artikel

THE RISK FACTOR FOR MORTALITY IN COVID-19 PATIENTS IN MOHAMMAD HOESIN HOSPITAL, PALEMBANG, INDONESIA

Rico Januar Sitorus,^{1*} Nyoman Yudi Antara,² Rosyada Elviani,³ Zen Ahmad,³ Harun Hudari,³
Reymart V. Sangalang⁴

¹ Faculty of Public Health Sriwijaya University, Jl. Palembang-Prabumulih KM 32 Ogan Ilir, 30662, Indonesia

² Faculty of Public Health Kader Bangsa University, Jl. Mayjend H.M Ryacudu, No. 88 & ulu Plembang,
30253, Indonesia

³ Mohammad Hoesin Hospital, Jl. Jend. Sudirman KM. 3,5, Sekip Jaya, Kemuning, Palembang City, 30126
Indonesia

⁴ De La Salle University, Manila. 0922 Philippines

ABSTRACT

World Health Organization (WHO) has declared the novel corona virus (COVID-19) as a pandemic due to its high transmission and the rapid spread of the COVID-19. Along these lines, there is a need for more research about risk factors that can affect the spread of COVID-19 and its fatality. Therefore, this study aims to analyze risk factors in patients who died from COVID-19 at the Mohammad Hoesin Hospital in Palembang, South Sumatra, Indonesia. This study used a cross-sectional approach. The data were collected from all patients who died with suspected, probable, and confirmed status until September 2020. Data on death due to COVID-19 were collected with suspect, probable, and confirmed status. The results showed that comorbidity became the most dominant factor (62.1%) with (OR Adj) 3.780 (1.000 – 3.168) after controlling for contact history with confirmed cases and sex. There were differences in the mean age and length of stay in patients with confirmed COVID-19 and not. Prevention of death in COVID-19 patients can be done by controlling comorbidities and contact history with positive cases of COVID-19.

Keywords: age, comorbid, contact history, COVID -19, mortality, sex.

ABSTRAK

Organisasi Kesehatan Dunia (WHO) telah menyatakan virus korona baru (COVID-19) sebagai pandemi karena tingkat penularannya yang tinggi dan penyebaran COVID -19 yang cepat. Sejalan dengan hal tersebut, diperlukan penelitian lebih lanjut tentang faktor risiko yang dapat mempengaruhi penyebaran COVID -19 dan kematiannya. Oleh karena itu, penelitian ini bertujuan untuk menganalisis faktor risiko pada pasien yang meninggal akibat COVID -19 di Rumah Sakit Mohammad Hoesin Palembang, Sumatera Selatan, Indonesia. Penelitian ini menggunakan pendekatan cross-sectional. Data dikumpulkan dari seluruh pasien yang meninggal dengan status suspek, probable, dan konfirmasi sampai September 2020. Data kematian akibat COVID -19 dikumpulkan dengan status suspek, probable, dan terkonfirmasi. Hasil penelitian menunjukkan bahwa komorbiditas menjadi faktor yang paling dominan (62,1%) dengan (OR Adj) 3,780 (1.000 - 3.168) setelah dikontrol dengan riwayat kontak dengan kasus terkonfirmasi dan jenis kelamin. Terdapat perbedaan rerata umur dan lama rawat pasien dengan pasien konfirmasi COVID-19 dan pasien tidak konfirmasi COVID-19. Pencegahan kematian pada pasien COVID -19 dapat dilakukan dengan mengontrol penyakit penyerta dan riwayat kontak dengan kasus positif COVID -19.

Kata Kunci: usia, komorbid, riwayat kontak, COVID -19, mortalitas, jenis kelamin.

Received : November 17, 2020 Accepted : March 8, 2021 Published: March, 31, 2021

Introduction

The first novel corona virus (COVID-19) case was found in China and reported in December 2019. It has spread rapidly to over 210 countries worldwide. COVID-19 has high morbidity and mortality rates globally and becomes pandemic according to, World Health Organization (WHO).¹ The COVID-19 caused respiratory tract infection followed by several symptoms such as common cold, fever, dry cough, shortness of breath, up to more severe symptoms.^{2,3}

The pandemic poses many challenges in providing health care. Elderly groups and people with health problems such as hypertension, heart problems, and diabetes are susceptible being infected with this virus. It can deteriorate a person's condition and even increase the risk of death. The potential for transmission of this disease can also be from people that are asymptomatic.^{4,5}

Transmission of this disease can occur in hospitals. The most recent case reported 41% of infected patients were in the hospital, 29% were medical staff with a death rate of 4.3%.⁶ The risk factors for death related to COVID-19 are elderly with ages 65 years and over that accompanied by comorbidities. Michelozzi (2020) showed men have a higher risk of death than women.⁷ The United States reports that 71% (732/1037) of COVID-19 sufferers are hospitalized.⁸ M.Hoesin hospital is one of the hospitals that care for patients with a positive confirmation COVID 19. The number of positive cases that hospitalized Moh. Hoesin is 334 people with the number of deaths 47 people.⁹

In reducing transmission, it is necessary to restrict local and international travel and implement quarantine. Travel restrictions can mitigate potential transmission from local transmission areas.¹⁰ Movement of the population such as going to the office by public transportation and traveling to the infected areas can increase risk transmission when returning home.¹¹ The death toll due to COVID -19 in the world is 2.85 %.¹ Properly treated COVID-19 patients can reduce morbidity and mortality in this pandemic. Medical workers must be equipped with adequate knowledge, skills on preventive measures, and confidence in diagnosing and treating COVID-19 patients. Medical workers who are directly involved in the diagnosis, treatment and care of COVID-19 patients have a high-risk exposure to the virus from aerosol and droplet contamination. This caused nosocomial infections.¹²

As part of the ongoing pandemic preparedness, this research aim is to analyze risk factors of death in the hospital and to help service health management design protocol in determiner proper handling of COVID-19 patients.

Method

This study used a cross-sectional approach using medical records and COVID-19 surveillance data in September 2020 from Mohammad Hoesin Hospital. The data were collected from all patients who died with suspected, probable, and confirmed status until September 2020. Mohammad Hoesin

Hospital is a national referral hospital and accepts COVID-19 patients from all districts in South Sumatra.

The study's independent variables were sex, age, length of stay, contact history with positive confirmed cases, comorbidities, and chief complaint in admission to hospital. The dependent variable was patient death status (suspected, probable, and confirmed), based on the respondent's medical record.

The data analyzed were from the 235 patients who went to the hospital and died till September 2020 amid this pandemic. Data analysis was performed by univariate, bivariate, and multivariate. The univariate analysis provides an overview of the variables studied, bivariate analysis examines the relationship between the independent variables and the dependent variable using the chi-square test, and multivariate analysis explain the character of the predictor variables in explaining the dependent variable with multiple logistic regression. This study has been reviewed and received ethical clearance from the Mohammad Hoesin Hospital with No. 10 / kepkrsmh / 2020.

Results

Table 1 shows data on COVID-19 patient death status. 40.9% was confirmed, 55.7% was probable status, 3.4% was suspected, 62.1% with comorbidities and 71.5% did not know that they had contact with positive cases. At the time of admission to the hospital, the most chief complaint was dyspnea (30.3%).

Table 1. Characteristic of respondent COVID-19 patient (n= 235)

Variables	Categories	n	%
Patient death status	Confirmed	96	40.9
	Probable	131	55.7
	Suspected	8	3.4
Contact history	Yes	43	18.3
	Not known	168	71.5
Comorbidity	No	24	10.2
	Yes	146	62.1
Chief complaint of admission	No	89	37.9
	Dyspnea	71	30.3
	Dyspnea and loss of consciousness	36	15.3
	Loss of consciousness	14	6
	Cough	10	4.3
	Dyspnea and fever	24	10.2
	Limp	6	2.6
	Nausea and vomiting	2	0.9
	Unstable bradycardia	1	0.4
	Trauma dan RO Pneumonia	6	2.6
	Fever	3	1.3
	Cough and dyspnea	10	4.3
	Dyspnea and limp	12	5.1
	Abdominal pain	1	0.4
	Planning for blood transfusion	1	0.4
	Planning for chemotherapy	1	0.4
	Respiratory failure	2	0.9
None	35	14.9	
Age (years)	Mean – Median	Minimum	Maximum
	49-54	0	86
Length of stay (days)	3,54 – 2	0	51

Table 2 shows that among the 3 variables (gender, comorbidity, and contact history with confirmation), the contact history with positive cases had a significant relationship with the dead COVID-19 patients with sig ($0.017 < \alpha = 0.05$). This suggests that contact history with positive COVID-19 confirmed patients was associated with mortality status. Variables with sig < 0.25 were candidates for multivariate analysis with multiple logistic regression. Table 2 shows that the variables for sex, comorbidity, and confirmed contact history were included in the multivariate analysis.

Table 2. Bivariable analysis of factors associated with COVID-19

Variable	Category	COVID-19 Cases				p-value
		Confirmed		Not yet confirmed (probable + suspect)		
		n	%	n	%	
Sex	Male	65	46.1	76	53.9	0.062
	Female	31	33	63	67	
Comorbidity	Yes	67	45.9	79	54.1	0.061
	No	29	32.6	60	67.4	
History of contact with confirmed case	Yes	15	34.9	28	65.1	0.0000
	Not known	77	45.8	91	54.2	
	No	4	16.7	20	83.3	

In Table 3, the most dominant variable in predicting mortality in COVID-19 patients was comorbidity with an Odds Ratio (OR Adj) value of 3,780 (1,000 - 3,168) after controlling for contact

history with confirmed cases and sex. This result showed that COVID-19 patients with comorbidities had a 3,780 times greater risk of dying than patients who do not have comorbidities.

Confirmed positive COVID-19 patients who did know had a history of contact with confirmed cases had a greater risk of death 2,055 (0.572 - 7,381) times compared to patients who had no contact history with confirmed cases, then confirmed positive COVID-19 patients who had a history of contact with confirmed cases had a greater risk of death 3,666 (1,176 - 11,429) times compared to patients who had no contact history with confirmed cases after controlling with comorbidity and sex.

Table 3. Multivariate analysis with Multiple Logistic Regression

Risk Factors	Category	B	p-value	OR (95% CI)
Comorbidity	No			Reff
	Yes	0.577	0.050	3.780 (1.000 – 3.168)
History of contact with confirmed case	No			Reff
	Not known	0,720	0.270	2.055 (0.572 – 7.381)
	Yes	1.2991	0.025	3.666 (1.176 – 11.429)

Discussion

The presence of comorbid, age, and ethnicity are factors that affects the survival and mortality rates for people with COVID-19.^{13,14} This study reported that COVID-19 patients who died with comorbidity (61.2%) were more than patients those without. Comorbidity such as hypertension, diabetes, and heart disease known to increase mortality.¹⁴ Cardiac Comorbidity, Acute Heart Injury Chronic Kidney Disease, Acute Kidney Injury are Associated with Increased Disease Severity in Patients with COVID-19,¹⁵ age significantly affected ($p = 0.0007$) when compared between positive confirmed patients and those who were not. The sex variable in this study was dominated by men. Men over 65 years are known to have a higher mortality rate than women in people with COVID-19.^{16,17} This can be due to differences in innate immune system responses such as cytokines and chemokines. Men have a higher innate immune response than women and this can aggravate the condition of people with COVID-19. Moreover, activated T cells increased significantly in female patients but not in Men.¹⁸ Symptoms frequently appear in patients of COVID-19 are fever, cough, shortness of breath, muscle pain, headache, sore throat, rhinorrhea, diarrhea, and vomiting.¹⁹ In severe conditions, patients in intensive care unit had difficulty breathing compared to patients who were not,²⁰ Allegedly, chief complaint upon admission to the hospital in this study were related to the mortality rate characterized by difficulty breathing or dyspnea. In this study, dyspnea was the most common chief complaint (30.3%) in admission to hospital among people with COVID-19. Another risk factor related to the mortality rate in this study was close contact with a confirmed COVID-19 patient. The high incidence of COVID-19 patients is related to close contact between currently and previously positive patients. The spread of SARS-COV-2 through close contact can occur through

people who are symptomatic or asymptomatic, making the spread unnoticeable. SARS-COV-2 screening on people with close contact with sufferers of COVID -19 can reduce the spread of this disease.²¹

Conclusion

This study showed that COVID-19 patients who died at the hospital suffered from dyspnea as symptom and had contact history with positive confirmed COVID-19 patients. Patients who had comorbidities had a greater risk of suffering fatality than patients who do not have comorbidities.

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Conflict of Interest

The authors declare that there is no conflict of interest

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Clinical Profile of Elderly Patients with COVID-19 Hospitalized in Indonesia's National General Hospital

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ABSTRAK

Latar belakang: sebanyak 38.6% kasus kematian pasien COVID-19 di Indonesia terjadi di populasi lansia. Data mengenai profil klinis pasien rawat inap lansia dengan COVID-19 masih tidak ada. Padahal kelompok pasien ini adalah pasien risiko tinggi selama pandemi ini yang memerlukan perhatian lebih. **Metode:** studi deskriptif ini menggunakan data lengkap pasien lansia dengan COVID-19 yang dirawat inap di Rumah Sakit Umum Pusat Nasional Cipto Mangunkusumo (RSUPN Cipto Mangunkusumo) dari April hingga akhir Agustus 2020. Data termasuk karakteristik klinis, gejala, komorbiditas, multimorbiditas dan luaran mortalitas pasien. **Hasil:** di populasi pasien lansia (n=44), mayoritas berusia di antara 60-69 tahun (68%), berjenis kelamin laki-laki (66%), dan tidak memiliki riwayat kontak erat dengan pasien COVID-19 sebelumnya (86%). Gejala tersering ialah demam, batuk, dan sesak yang merupakan gejala khas COVID-19, sedangkan penyakit kronis tersering adalah diabetes melitus, hipertensi, dan keganasan. Multimorbiditas ditemukan hanya di 14% pasien lansia, dan para pasien tersebut bertahan hidup pasca infeksi virus SARS-CoV-2. Angka kematian pasien lansia rawat inap dengan COVID-19 di studi ini adalah 23%, dan 90% dari kasus kematian berjenis kelamin laki-laki. **Kesimpulan:** pasien laki-laki mendominasi kasus terkonfirmasi dan kasus kematian lansia dengan COVID-19. Gejala khas COVID-19 hanya ditemukan di sekitar setengah pasien penelitian. Pasien yang meninggal dunia memiliki persentase gejala khas lebih tinggi. Gejala tidak khas pun mungkin ditemukan di pasien lansia. Immunosenescence dan fungsi imunoregulasi jenis kelamin tertentu dihipotesiskan memiliki peran penting dalam menyebabkan kematian lansia di studi ini.

Kata kunci: profil klinis, lansia, pasien geriatri, COVID-19, Indonesia.

ABSTRACT

Background: older people contributed to 38.6% of death cases related to COVID-19 in Indonesia. Data regarding clinical profile of hospitalised elderly with COVID-19 in Indonesia were still lacking. Older people are at-risk population in the pandemic, whom we should pay attention to. **Methods:** this single centre descriptive study utilised complete data of elderly inpatients with COVID-19 in Indonesia's national general hospital from April to late August 2020. The data consisted of clinical characteristics, symptoms, comorbidities, multimorbidity, and mortality outcome. **Results:** among elderly patients (n=44), a majority of patients were aged 60-69 years (68%), were male (66%), and had no history of close contact with COVID-19 patient (86%). The most common

*symptoms were fever, cough and shortness of breath (classic symptoms of COVID-19), whereas the most common chronic diseases were diabetes mellitus, hypertension, and malignancy. Multimorbidity was only found in 14% of patients, all of whom remained alive following SARS-CoV-2 infection. The death rate among elderly inpatients with COVID-19 in this study was 23%, and male older adults contributed to 90% of death cases. **Conclusion:** male patients dominated both confirmed cases and death cases among elderly with COVID-19. Classic symptoms of COVID-19 were only found in about half of the study patients. Non-survivors had higher percentage of the classic symptoms of COVID-19 than survivors. Atypical COVID-19 presentations are possible in older adults. We postulated that immunosenescence and sex-specific immunoregulatory function play an important role in causing death in this study cohort.*

Keywords: clinical profile, elderly, geriatric patient, COVID-19, Indonesia.

INTRODUCTION

Indonesia faced challenges in tackling coronavirus disease 2019 (COVID-19). The pandemic itself is still an ongoing problem in many parts of the world. There is no sign of decrease in number of new cases in Indonesia, which exceeded 3,000 in late August. In late March 2020, the nation's case fatality rate (CFR) reached 8.9%¹, whereas the rate was 4.3% in late August.² Despite the decrease, it was still higher than the global case fatality rate.

Among confirmed cases in late August in Indonesia, 11.2% were elderly patients aged 60 years and above. Older people also contribute to 38.6% of death cases related to COVID-19 nationwide.² A hospital-based report from Hainan, China, stated that only 5.26% of elderly with COVID-19 died. The most common symptoms were fever and cough. Only a minority of elderly had co-morbidities, such as diabetes and diabetes.³ However, data regarding clinical profile of hospitalised elderly with COVID-19 in Indonesia were lacking. Older people are at-risk population in the pandemic,⁴ whom we should pay attention to. Indonesia's national general hospital is one of COVID-19 referral centres with integrated care and specialised isolation ward for the patients, including elderly inpatients with COVID-19.

We aimed to provide a descriptive study results of clinical profile of elderly inpatients with COVID-19 in Indonesia's national general hospital. This may in turn inform Indonesian physicians of the possible presentations and sex-specific difference in outcome of elderly with COVID-19.

METHODS

This observational descriptive study utilised inpatient data of Cipto Mangunkusumo Hospital, Indonesia's national general hospital, from April to late August 2020. The data of elderly inpatients aged 60 years and older with COVID-19 consisted of clinical characteristics, symptoms, comorbidities, and mortality outcome. The data were inputted and filled in by physicians to electronic and handwritten medical record, respectively. The inclusion criterion was complete data of elderly inpatients with COVID-19.

COVID-19 confirmation was based on gold-standard laboratory test, reverse transcription polymerase chain reaction (RT-PCR). Clinical characteristics consisted of age (classified into 60-69 years; and 70 years and older), sex (female or male), history of close contact with COVID-19 patients, and outcome. We took into account fever, cough, shortness of breath, sore throat, rhinorrhoea, anosmia, nausea, vomiting, diarrhoea, abdominal pain, myalgia and malaise as symptoms reported by the patients. Underlying chronic diseases included diabetes mellitus, hypertension, cardiovascular disease, chronic kidney disease (CKD), malignancy, chronic obstructive pulmonary disease (COPD), asthma, tuberculosis (TB), cerebrovascular disease. We also gathered data in regards to multimorbidity of elderly patients. Multimorbidity was defined as the presence of 2 or more chronic diseases in the same individual. We recorded the data related to history of close contact, symptoms, and comorbidities as "yes" if present and "no" if absent. Descriptive statistical analysis utilised IBM SPSS Statistics Version 20 and the results were subsequently presented as number of cases and percentage.

Table 1. Clinical characteristics and symptoms of elderly patients with COVID-19 hospitalised in Indonesia's national general hospital.

Variables	All elderly patients n (%)	Survivors (n=34) n (%)	Non-survivors (n=10) n (%)
Clinical Characteristic			
Age group			
- 60-69 years	30 (68)	24 (71)	6 (60)
- 70 years and above	14 (32)	10 (29)	4 (40)
Sex, Male	29 (66)	20 (59)	9 (90)
History of close contact with COVID-19 patient			
- No	38 (86)	28 (82)	10 (100)
- Yes	6 (14)	6 (18)	0 (0)
Symptoms			
Fever			
- No	18 (41)	14 (41)	4 (40)
- Yes	26 (59)	20 (59)	6 (60)
Cough			
- No	18 (41)	14 (41)	4 (40)
- Yes	26 (59)	20 (59)	6 (60)
Shortness of breath			
- No	19 (43)	15 (44)	4 (40)
- Yes	25 (57)	19 (56)	6 (60)
Sore throat			
- No	36 (82)	26 (76)	10 (100)
- Yes	8 (18)	8 (24)	0 (0)
Rhinorrhoea			
- No	43 (98)	33 (97)	10 (100)
- Yes	1 (2)	1 (3)	0 (0)
Anosmia			
- No	44 (100)	34 (100)	10 (100)
- Yes	0 (0)	0 (0)	0 (0)
Nausea			
- No	39 (89)	30 (88)	9 (90)
- Yes	5 (11)	4 (12)	1 (10)
Vomiting			
- No	40 (91)	31 (91)	9 (90)
- Yes	4 (9)	3 (9)	1 (10)
Diarrhoea			
- No	37 (84)	30 (88)	7 (70)
- Yes	7 (16)	4 (12)	3 (30)
Abdominal pain			
- No	40 (91)	30 (88)	10 (100)
- Yes	4 (9)	4 (12)	0 (0)
Myalgia			
- No	41 (93)	32 (94)	9 (90)
- Yes	3 (7)	2 (6)	1 (10)
Malaise			
- No	23 (52)	17 (50)	6 (60)
- Yes	21 (48)	17 (50)	4 (40)

The study has been approved by the Ethical Committee of Faculty of Medicine Universitas Indonesia with reference number KET-419/UN2F1/ETIK/PPM.00.02/2020.

RESULTS

We collected data from 44 elderly patients in this study. The death rate among this cohort was 23%. Among all elderly patients, a majority of patient were aged 60-69 years (68%), were male (66%), and had no history of close contact with COVID-19 patient (86%). (**Table 1**) The classic COVID-19 symptoms of fever, cough and shortness of breath were only present in 59%, 59%, and 57% of elderly patients, respectively. Nearly half of the patients had malaise. Most

elderly patients did not complain of sore throat, rhinorrhoea, anosmia, nausea, vomiting, diarrhoea, abdominal pain, and myalgia.

There was a higher proportion of elderly aged 70 years and older among non-survivors compared to the survivors (40% vs 30%). Ninety percent of non-survivors were male patients. Diarrhoea were also present in 30% of non-survivors, whereas it was reported by only 11.8% of survivors.

Multimorbidity was only found in 14% of patients, all of whom remained alive following SARS-CoV-2 infection. The most common chronic diseases found in elderly inpatients with COVID-19 were diabetes mellitus (11%), hypertension (14%), and malignancy (7%). (**Table 2**).

Table 2. Chronic diseases of elderly patients with COVID-19 hospitalised in Indonesia's national general hospital.

Variables	All elderly patients n (%)	Survivors (n=34), n (%)	Non-survivors (n=10), n (%)
Diabetes mellitus			
- No	39 (89)	29 (85)	10 (100)
- Yes	5 (11)	5 (15)	0 (0)
Hypertension			
- No	38 (86)	28 (82)	10 (100)
- Yes	6 (14)	6 (18)	0 (0)
Cardiovascular disease			
- No	43 (98)	33 (97)	10 (100)
- Yes	1 (2)	1 (3)	0 (0)
Chronic kidney disease			
- No	42 (95)	32 (94)	10 (100)
- Yes	2 (5)	2 (6)	0 (0)
Malignancy			
- No	41 (93)	32 (94)	9 (90)
- Yes	3 (7)	2 (6)	1 (10)
Chronic obstructive pulmonary disease			
- No	44 (100)	34 (100)	10 (100)
- Yes	0 (0)	0 (0)	0 (0)
Asthma			
- No	44 (100)	34 (100)	10 (100)
- Yes	0 (0)	0 (0)	0 (0)
Tuberculosis			
- No	42 (95)	33 (97)	9 (90)
- Yes	2 (5)	1 (3)	1 (10)
Cerebrovascular disease			
- No	43 (98)	33 (97)	10 (100)
- Yes	1 (2)	1 (3)	0 (0)
Multimorbidity (≥ 2 chronic diseases in the same individual)			
- No	38 (86)	28 (82)	10 (100)
- Yes	6 (14)	6 (18)	0 (0)

DISCUSSION

The death rate among hospitalised older adults with COVID-19 in this study was much higher than the national COVID-19 case fatality rate among Indonesian elderly (23% vs 14.9%).² Not only was male sex predominant among confirmed cases of COVID-19 in elderly population in this study, 90% of non-survivors were also of male sex. A study utilising data of 17,278,392 adults suggested that male sex itself is associated with COVID-19-related death (hazard ratio (HR) 1.59, 95% CI 1.53 to 1.65). The study also showed that estimated HR for COVID-19-related death also increases in older age groups.⁴

There were several mechanisms that could possibly explain the link between male sex and unfavourable disease outcome. Both ACE2 and transmembrane serine protease-2 (TMPRSS2) are crucial for SARS-CoV-2 viral entry in human cells.⁵ Since ACE2 gene is located on the X chromosome, alleles that confer resistance to COVID-19 may be present, explaining the lower adverse outcome among female patients.⁶ Different outcome of the disease based on sex category can also be explained by different immunoregulatory functions of testosterone and oestrogen sex hormones.⁷ In general, there is different response to many DNA and RNA viral infections in males compared to females.⁸ Testosterone's control of TMPRSS2 expression has been suggested to contribute to male predominance in terms of unfavourable outcomes in COVID-19. Androgen receptor activity is required for the transcription of TMPRSS2 gene.⁹ Furthermore, immune system of male individuals respond to the infection less robustly. Ageing males have a more dramatic decrease in total amount of B and T cells compared to females. In addition, ageing males experience higher increases in senescent CD8+ T effector memory cells. Similar to COVID-19 data, epidemiological data of SARS-CoV-1 and MERS-CoV infection also suggested different disease outcome based on sex category.⁸

As one ages, disruption of both innate and adaptive arms of the immune system has been reported.¹⁰ Ageing is characterised by a progressive dysfunction of several compartments of the

immune system, namely immunosenescence, including immunodeficiency and smouldering inflammation.¹¹ Immunosenescence of COVID-19 patients may in turn promote viral-induced cytokine storm leading to systemic problems, and life-threatening respiratory failure.¹⁰ In addition, abnormal ciliary function may impair SARS-CoV-2 viral particle clearance in the elderly.¹²

The disease has been widespread in Indonesia. There was increasing evidence that several patients with COVID-19 have only mild symptoms or are asymptomatic. However, there are difficulties in detecting the asymptomatic infections.¹³ Since almost all elderly in this study had no history of close contact with confirmed cases, older adults as well as their caregivers and relatives should really take extra precautions against COVID-19. Moreover, family cluster has been reported in Indonesia and asymptomatic person may potentially transmit the virus.¹⁴

In this study, only approximately 50% elderly inpatients with COVID-19 presented with classic symptoms of COVID-19 (fever, cough, and shortness of breath). In addition, it should be noted that the percentages of patients complaining of fever, cough, and shortness of breath were higher in non-survivors. This highlights the possibility of atypical presentation of COVID-19 among older adults. Albeit possible, the most common symptoms of COVID-19 in both elderly and non-elderly patients are still fever and cough.³ Older people are generally already at risk for higher morbidity and mortality due to infection. However, as a cardinal sign of infection, fever may be absent or blunted in elderly patients. The absence of or blunted response to fever may result in diagnostic delay in this population.¹⁵ The delay in diagnosis may in turn cause further spread of COVID-19.¹⁶

The most common chronic diseases of confirmed cases and death cases in older adults in this study were similar to the overall national data, namely hypertension and diabetes mellitus.² Similarly, hypertension (43.8%) and diabetes mellitus (25.7%) were also the most common underlying chronic diseases in elderly patients with COVID-19 according to a multicentre study in China.¹⁷ A hospital in Hainan, China,

reported that only 27.78% of elderly with COVID-19 had hypertension, whereas it was 16.67% for diabetes.³ Most underlying chronic diseases were associated with increased risk for death of COVID-19 patients, including diabetes mellitus, cardiovascular disease, kidney disease, respiratory disease (including severe asthma) and history of malignancy.⁴ Based on our study and the previous reports, the co-morbidities were found only in a minority of elderly with COVID-19.

An analysis of adult data from UK Biobank (n=428,199) suggested that multimorbidity, especially cardiometabolic multimorbidity, was associated with increased risk for developing COVID-19.¹⁸ As multimorbidity was not the prominent feature of non-survivors in our study, we postulated that immunosenescence and sex-specific immunoregulation play an important role in causing death in this study cohort.

To date, we believe that our study is the first descriptive study focusing on the clinical profile of elderly inpatients with COVID-19 in Indonesia. It is also among the first descriptive studies with similar topic in Southeast Asia. On the other hand, we acknowledge the limitations of this study. The number of patients in this study was still limited. The preliminary data were not consecutive nor randomised. This study relied on successful collection of complete data of patients from the medical record. However, we believe that there may not be remarkable differences between the data presented in this study and the data gathered with extension of data collection period. This article may act as a thought-provoking manuscript to increase the awareness and possibilities pertaining to elderly inpatients with COVID-19. Future studies with similar focus and larger sample size have yet to be conducted.

CONCLUSION

The death rate among elderly inpatients with COVID-19 in this study was 23%, dominated by male patients. Fever, cough, and shortness of breath were only found in about half of elderly with COVID-19, but non-survivors had higher percentage of the classic symptoms of COVID-19 than survivors. The most common underlying chronic diseases were diabetes

mellitus and hypertension. We postulated that immunosenescence and sex-specific immunoregulatory function play an important role in causing death in this study cohort.

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ANALISIS FAKTOR RISIKO KEMATIAN DENGAN PENYAKIT KOMORBID COVID-19

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ABSTRAK

Tujuan penelitian ini adalah untuk menganalisis penyakit komorbid sebagai faktor risiko kematian akibat COVID-19 di RS Bhakti Dharma Husada Surabaya. Metode penelitian ini adalah penelitian analitik observasional dengan desain studi retrospektif. Hasil penelitian menunjukkan bahwa 358 pasien terinfeksi COVID-19 dan dikonfirmasi dengan usap hidung dan/atau tenggorokan. 66 pasien (18%) meninggal karena COVID-19. 60,6% berjenis kelamin laki-laki (OR 1,87, P 0,041), 22,7% berusia > 64 tahun (OR 2,097, P 0,041), dan 83,3% diantaranya merupakan faktor risiko penyerta. Diabetes melitus (30,3%) (OR 4,348, P 0,000), dan penyakit kardiovaskular (10,6%) (OR 4,319, P 0,016) merupakan faktor risiko kematian tertinggi pada COVID-19. Simpulan, Laki-laki, usia lanjut, diabetes, dan hipertensi merupakan faktor risiko kematian pada COVID-19.

Kata Kunci: COVID-19, Diabetes, Hipertensi, Komorbid, Lansia, Mortalitas

ABSTRACT

The purpose of this study was to analyze comorbid diseases as a risk factor for death due to COVID-19 at Bhakti Dharma Husada Hospital Surabaya. The research method was an observational analytic study with a retrospective research design. The results showed that 358 patients were infected with COVID-19 and confirmed with nose and / or throat swabs. 66 patients (18%) died from COVID-19. 60.6% were male (OR 1.87, P 0.041), 22.7% aged > 64 years (OR 2.097, P 0.041), and 83.3% were co-risk factors. Diabetes mellitus (30.3%) (OR 4,348, P 0,000), and cardiovascular disease (10.6%) (OR 4,319, P 0.016) were the highest risk factors for death in COVID-19. Conclusion: Men, old age, diabetes, and hypertension are risk factors for death in COVID-19.

Keywords: COVID-19, Diabetes, Hypertension, Comorbid, Elderly, Mortality

PENDAHULUAN

Penyakit coronavirus 2019 (COVID-19) merupakan perhatian kesehatan yang besar saat ini, terutama untuk lanjut usia. COVID-19 merupakan penyakit yang diakibatkan virus SARS-CoV-2. Wabah pneumonia virus yang tidak diketahui dengan etiologinya pertama kali diperkenalkan di Wuhan, Cina pada 12 Desember 2019 (Ji et al., 2020). Penelitian lebih lanjut mengindikasikan adanya coronavirus baru yang cepat terisolasi, dan

genomnya telah berlanjut (Chan et al., 2020). World Health Organization (WHO) menamakan virus ini sebagai 2019 novel coronavirus (2019-nCoV) (Zhu et al., 2020) dan namanya berganti *Severe Acute Respiratory Syndrome Coronavirus-2* (SARS-CoV-2) oleh *Coronaviridae Study Group* (CSG) dari *International Committee on Taxonomy of Viruses*. Secara resmi, COVID-19 menjadi nama dari penyakit yang diakibatkan virus tersebut (Gorbalenya et al., 2020).

Covid-19 merupakan jenis virus baru yang ditemukan pada tahun 2019 dan belum diidentifikasi menyerang manusia sebelumnya (Zulva, 2019). Covid-19 merupakan penyakit menular yang disebabkan oleh sindrom pernapasan akut coronavirus 2 (severe acute respiratory syndrome coronavirus 2 atau SARS-CoV2) (Setiawan, 2020). WHO menetapkan virus Corona sebagai pandemi pada 11 maret 2020 karena penularan virus ini sangat cepat (Moana, 2020).

SARS-CoV-2 dimulai dari pasar makanan laut lokal di Wuhan yang kemungkinan berasal dari kelelawar, karena 96% secara genom mirip dengan coronavirus kelelawar (BatCoV RaTG13) dan infeksiya menjadi sulit dikendalikan atau dicegah karena otoritas kesehatan Cina mengatakan kemungkinan transmisi manusia ke manusia meskipun asimtomatis (Fang et al., 2020).

Penyakit kronik jantung dan metabolik, adanya peradangan akut dan penurunan fungsi organ (jantung, ginjal, hati, dan hematologi) yang dialami pasien diawal perawatan dapat meningkatkan risiko kematian karena infeksi COVID-19 (Yang & Yan, 2020).

Indikasi rawat inap di rumah sakit pasien COVID-19 sulit untuk disamakan karena tergantung pada prevalensi pengujian komunitas dan kriteria penerimaan, yang bervariasi di setiap negara. Namun, diperkirakan 1 dari 5-10 orang dewasa memiliki penyakit dengan tingkat keparahan dan memiliki kriteria cukup untuk dirawat di rumah sakit. Sebagian besar pasien dirawat dengan infeksi pernapasan akut yang parah atau sindrom pernapasan akut yang parah menurut definisi kasus WHO. Kriteria perawatan di ruang intensif juga bervariasi di setiap negara. Usia tua, penyakit kronis, dan jenis kelamin pria secara konsisten dikaitkan dengan peningkatan mortalitas (Docherty et al., 2020).

RSUD Bhakti Dharma Husada (BDH) Surabaya adalah salah satu rumah sakit milik pemerintah kota Surabaya yang memberikan layanan pada pasien COVID-19. RSUD BDH Surabaya mulai melayani pasien COVID-19 pada bulan Maret 2019. Adanya pasien COVID-19 yang meninggal dunia di RSUD BDH Surabaya yang memiliki komorbid Diabetes Mellitus, kardiovaskular, hematologi, usia tua, Penyakit paru kronik, CVA, CKD, dan TB sehingga peneliti ingin mengetahui faktor-faktor resiko pasien meninggal.

METODE PENELITIAN

Penelitian ini adalah penelitian analitik observasional dengan desain studi retrospektif untuk mengetahui faktor risiko mortalitas pasien COVID-19. Populasi penelitian adalah pasien COVID-19 yang rawat inap di RSUD Bhakti Dharma Husada Surabaya sejak 1 maret-21 juli 2020. Sampel penelitian diambil secara total dari pasien rawat inap konfirm Covid-19 yang meninggal dunia dan tidak meninggal dunia di RSUD Bhakti Dharma Husada Surabaya. Kriteria inklusi penelitian ini adalah: pasien Covid-19 yang rawat inap, usia > 18 tahun, dan terkonfirmasi Covid-19. Kriteria eksklusi penelitian ini adalah: data demografi dan komorbid pasien yang tidak lengkap .

Penelitian ini dimulai dari pemilihan sampel, yaitu semua pasien Covid-19 yang rawat inap. Sampel diambil dari subyek yang datang di Instalasi Rawat Inap Covid-19 RSUD Bhakti Dharma Husada Surabaya. Total sampel yang didapat sejumlah 358, tetapi yang memenuhi kriteria inklusi penelitian hanya sejumlah 253 sampel. Subyek yang sudah memenuhi kriteria inklusi dilakukan pengambilan sampel.

HASIL PENELITIAN

Tabel. 1
Demografi dan Komorbid
Pasien Covid-19 (N=253)

Faktor Risiko	N (%)
Usia	51.00 (20-95)*
> 64 tahun	38 (15)
19-65 tahun	215 (85)
Jenis Kelamin	
Laki-laki	126 (49.8)
Perempuan	127 (50.2)
Komorbid	
Diabetes	37 (14.62)
Hipertensi	11 (4.34)
TB	3 (1.18)
PPOK	4 (1.58)
Jantung	12 (4.74)
CKD	2 (0.79)
CVA	4 (1.58)
Hamil	6 (2.37)
Asma	1 (0.39)
HIV/AIDS	2 (0.79)

Sumber data : Tahun 2020

Berdasarkan tabel 1 menunjukkan bahwa rata-rata usia pasien yang diamati adalah 51 tahun dengan usia minimal 20 tahun dan maximal 95 tahun. Pasien dengan usia > 64 tahun sejumlah 38 (15%) dan usia 19-65 tahun sejumlah 215 (85%). Jenis kelamin yang diamati, laki-laki 126 (49.8%) dan perempuan 127 (50.2%). Dari data demografi diatas data faktor risiko komorbid yang diamati adalah diabetes, hipertensi, TB, PPOK, jantung, CKD, CVA, hamil, asma, HIV/AIDS. Pasien komorbid yang diamati dapat memiliki lebih dari satu komorbid. Pasien yang memiliki komorbid rata-rata di usia > 45 tahun. Dari data pasien Covid-19 yang diamati 66 (26.08%) pasien meninggal. Dua penyakit komorbid yang dimiliki pasien terbanyak adalah diabetes dan jantung.

Tabel. 2
Faktor Risiko Meninggal Berdasarkan Usia dan Jenis Kelamin
Pasien Covid-19 (N=253)

Variable	Pengamatan	Meninggal (%)	Tidak Meninggal (%)	OR (95% CI)	P-value
Usia					
> 64 tahun	38	15 (22.7)	23 (12.3)	2.097 (1.018-	0.041
19-64 tahun	215	51 (77.3)	164 (87.7)	4.319)	
Jenis Kelamin					
Laki-laki	126	40 (60.6)	86 (46.0)	1.807 (1.020-	0.041
Perempuan	127	26 (39.4)	101 4.0)	3.199)	

Berdasarkan tabel 2 menunjukkan bahwa pasien usia > 64 tahun memiliki risiko 2.097 kali lebih besar meninggal karena Covid-19, dengan P 0.041. Pasien jenis kelamin laki-laki memiliki risiko meninggal 1.087 kali lebih besar dari perempuan, dengan P 0.041.

Tabel. 3
Faktor Risiko Meninggal Berdasarkan Komorbid
Pasien Covid-19 (N=253)

Variabel	Pengamatan	Meninggal		Tidak Meninggal		OR (95% CI)	P-value
		Ya (%)	Tidak (%)	Ya (%)	Tidak (%)		
Diabetes	37	20 (30.3)	46 (69.7)	17 (9.1)	170 (90.9)	4.384 (2.108-8.968)	0.000
Hipertensi	11	4 (6.1)	62 (93.3)	7 (3.7)	180 (96.3)	1.659 (0.470-5.860)	0.427
TB	3	2 (3.0)	64 (97.0)	1 (0.5)	186 (99.5)	5.813 (0.518-65.184)	0.107
PPOK	4	2 (3.0)	64 (97.0)	2 (1.1)	185 (98.9)	2.891 (0.399-20.946)	0.272
Jantung	12	7 (10.6)	59 (89.4)	5 (2.7)	182 (97.3)	4.319 (1.321-14.119)	0.009
CKD	2	1 (1.5)	65 (98.5)	1 (0.5)	186 (99.5)	2.862 (0.176-46.410)	0.439
CVA	4	2 (3.0)	64 (97.0)	2 (1.1)	185 (98.9)	2.891 (0.399-20.946)	0.272
Hamil	6	0 (0.0)	66 (100.0)	6 (3.2)	181 (96.8)	-	0.141
Asma	1	0 (0.0)	66 (100.0)	1 (0.5)	186 (99.5)	-	0.552
HIV/AIDS	2	0 (0.0)	67 (100.0)	2 (1.1)	185 (98.9)	-	0.399

Berdasarkan tabel 3 menunjukkan bahwa pasien dengan komorbid diabetes dan penyakit jantung menjadi faktor risiko kematian covid-19 di rsud bdh karena pasien dengan komorbid diabetes memiliki risiko 4.384 kali lebih besar meninggal karena Covid-19 dari pasien tanpa komorbid diabetes, dengan P 0.000 dan pasien dengan komorbid Jantung memiliki risiko 4.319 kali lebih besar meninggal karena Covid-19 dari pasien tanpa komorbid Jantung, dengan P 0.009. Sedangkan komorbid Hipertensi, TB, PPOK, CKD,

CVA, Hamil, Asma, dan HIV/AIDS tidak menjadi faktor risiko kematian COVID-19 karena nilai $P > 0.05$.

PEMBAHASAN

Covid-19 merupakan masalah kesehatan yang dialami seluruh dunia. Dari data WHO bulan Desember 2019-23 Juli 2020 ada 15.012.731 orang telah terinfeksi Covid-19 dan 619.150 orang telah meninggal akibat Covid-19. Di Indonesia 89.869 orang telah terinfeksi Covid-19 dan 4.320 orang telah meninggal karena Covid-19. Surabaya merupakan salah satu kota dengan kasus Covid-19 terbanyak.

Saat ini, penyebaran SARS-CoV-2 dari manusia ke manusia menjadi sumber transmisi utama sehingga penyebaran menjadi lebih agresif. Transmisi SARS-CoV-2 dari pasien simptomatik terjadi melalui *droplet* yang keluar saat batuk atau bersin (Han & Yang, 2020). Beberapa laporan kasus menunjukkan dugaan penularan dari karier asimtomatis, namun mekanisme pastinya belum diketahui. Kasus-kasus terkait transmisi dari karier asimtomatis umumnya memiliki riwayat kontak erat dengan pasien COVID-19 (Bai et al., 2020; Han & Yang, 2020).

Karakteristik demografi usia dan jenis kelamin pada penelitian kami termasuk dalam faktor risiko kematian COVID-19, dimana usia dan jenis kelamin memiliki nilai $P < 0.05$. Hal ini sesuai dengan penelitian-penelitian sebelumnya. Faktor usia tampak merupakan faktor krusial bagi luaran COVID-19. Usia median pasien yang meninggal adalah 68 tahun dan merupakan usia yang lebih tua dari pasien yang sembuh secara signifikan. Lebih lanjut, 80% kematian pada COVID-19 merupakan usia dewasa, yaitu 65 tahun, sehingga usia tua dapat dikatakan sebagai faktor risiko mortalitas COVID-19 (Chan et al., 2020; Zhu et al., 2020). Persentase angka kematian COVID-19 semakin meningkat karena penambahan usia, dengan pasien usia termuda 5% sampai tertua 55% (Zhou et al., 2020).

Jenis kelamin terbukti menjadi faktor risiko mortalitas pada pasien COVID-19, dimana pria lebih banyak meninggal dibanding wanita. Hal ini dikarenakan adanya perbedaan mendasar dari sistem imunologi pria dan wanita, perbedaan pola hidup, dan prevalensi merokok (Wenham et al., 2020). Pria lebih sedikit yang sembuh dibandingkan kelompok yang meninggal. Angka kematian yang lebih tinggi dikaitkan dengan komorbiditas kronis yang lebih tinggi pada pria, misal penyakit kardiovaskular, hipertensi, penyakit paru, dan merokok (The Lancet, 2020).

Komorbid Diabetes dan penyakit Jantung yang diderita pasien Covid-19 dapat menjadi faktor risiko kematian pada penelitian kami karena $P < 0.05$. Hal ini sesuai dengan penelitian *meta-analysis* yang dilakukan (Mantovani et al., 2020) didapatkan prevalensi pasien diabetes yang rawat inap akibat COVID-19 sebesar 14,34%, dimana pada pasien di negara Asia 11,06%. Hal ini lebih rendah dari prevalensi di negara non Asia, yaitu 23,34%. Pasien diabetes ini mempunyai risiko 2 kali lebih besar berkembang menjadi lebih berat atau penyakit kritis yang membutuhkan perawatan di ruang perawatan intensif (Longato et al., 2020; Wang et al., 2020). Pada rawat inap, pasien dengan diabetes mellitus tiga kali berisiko mengalami kematian akibat COVID-19. Diabetes mellitus merupakan faktor risiko bebas terhadap usia dan jenis kelamin.

Pasien COVID-19 dengan riwayat penyakit kardiovaskular atau penyakit paru obstruktif kronis (PPOK) mempunyai kecenderungan meninggal yang lebih tinggi (Aggarwal et al., 2020; Alharbi et al., 2020). Penyakit kronik jantung dan metabolik,

adanya peradangan akut dan penurunan fungsi organ (jantung, ginjal, hati, dan hematologi) yang dialami pasien diawal perawatan dapat meningkatkan risiko kematian karena infeksi COVID-19 (Yang & Yan, 2020).

Penelitian ini mempunyai kelemahan berupa jumlah populasi yang relatif sedikit dengan periode waktu yang singkat. Penelitian ini memiliki keterbatasan karena sifatnya yang retrospektif. Data yang diambil pada penelitian ini berjumlah 358, tetapi karena ada beberapa data yang tidak lengkap, hanya 253 yang memenuhi data pasien yang memenuhi syarat, sehingga semakin mengurangi jumlah data penelitian.

Pasien Covid-19 dengan faktor risiko kehamilan, Asma, HIV/AIDS yang diamati jumlahnya sedikit dan tidak meninggal, sehingga tidak dapat menjadi faktor risiko kematian. Faktor risiko kematian lainnya berupa Hipertensi, TB, PPOK, CKD, dan CVA tidak menjadi faktor risiko kematian karena jumlah kasus yang dilaporkan sedikit dengan nilai $P > 0.05$.

SIMPULAN

Laki-laki, usia lanjut, diabetes, dan hipertensi merupakan faktor risiko kematian pada COVID-19.

SARAN

Penyelidikan lebih lanjut diperlukan untuk menganalisis komorbid lain secara mendalam karena beberapa keterbatasan penelitian ini.

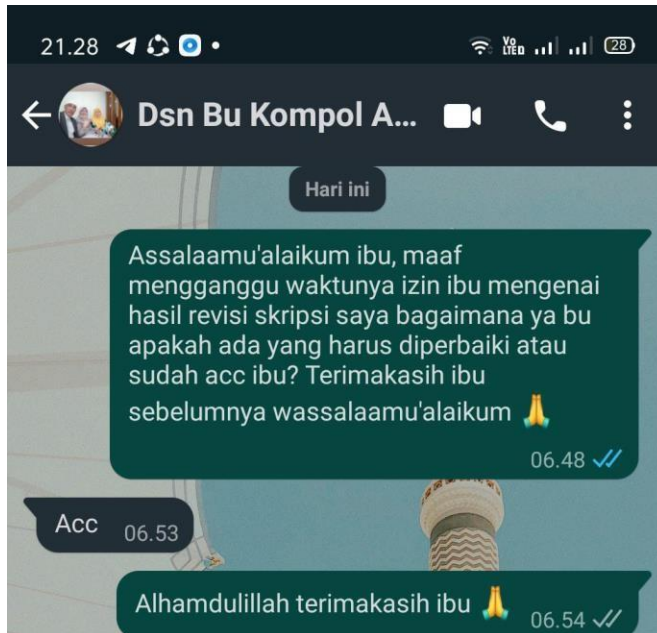
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Bukti ACC Dosen Pembimbing I



Bukti ACC Dosen Pembimbing II



Bukti ACC Dosen Penguji I



Bukti ACC Dosen Penguji II

