

LONG-TERM CONSEQUENCES OF COVID-19 IN QUALITY OF LIFE IN PATIENTS DISCHARGED FROM HOSPITAL: SYSTEMATIC REVIEW

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BACKGROUND

- Long-COVID is characterized by persistent and fluctuating symptoms for more than 12 weeks after acute SARS-CoV-2 infection.
- It strongly impacts quality of life (QoL) and the entire health system. Around 20% of hospitalized individuals experience long-term sequelae.
- Manifestations of long COVID include fatigue, anxiety, respiratory failure, acute respiratory distress syndrome, delirium, and propensity to develop blood clots, in addition to cardiac and neurological changes.
- A worse QoL was observed when compared to healthy controls, even after adjusting for age and sex.

OBJECTIVES:

This systematic review investigates the long-term consequences of COVID-19 in QoL measured by the EQ-5D instrument.

METHODOLOGY:

A systematic review used PubMed, EMBASE, and Cochrane Library databases, searches were carried out until May 2023. There were no restrictions on age, language, or date of publication. Two researchers independently conducted study selection and data extraction. Inclusion criteria: adults with a confirmed diagnosis of COVID-19, hospitalized and recovered, presenting with SARS-CoV-2 infection of mild, moderate, or severe severity, as well as long-lasting symptoms and clinical characteristics. Exclusion criteria: non-hospitalized or asymptomatic patients, specific populations such as pregnant women or healthcare professionals. Studies that reported other complications related to comorbidities.

Studies were selected that assessed QoL using EQ-5D-5L (EuroQoL- five Dimensions- five Levels) questionnaire, a descriptive system that covers 5 dimensions of health: mobility (d1), self-care (d2), usual activities (d3), pain or discomfort (d4), and anxiety or depression (d5), with 5 levels of severity in each dimension: no problems, slight problems, moderate problems, severe problems, and unable to perform or extreme problems.

Relative risks (RR) were estimated for each study between individuals who reported no problems in any of the dimensions of the EQ-5D-5L and those with any problems using Poisson models.

RESULTS:

The selection results are presented in the flowchart (Figure 1). Twelve studies reported results on post-COVID QoL survivors applying the EQ-5D questionnaire, but only three presented sufficient data to extract evidence.

The included studies used the EQ-5D-5L instrument to assess patients' perceived QoL and were carried out in populations from Brazil and China (Table 1).

Measurements were taken 3, 6, 11, and 12 months after discharge. The studies demonstrated the impact of the disease on QoL, regardless of severity, in most dimensions (d2 to d5) when compared to asymptomatic individuals as a reference (Table 2). Self-care and usual activities (d2, d3) had RR between 0.04-0.4 and 0.05-0.79, while pain/discomfort (d4) and anxiety/depression (d5) had RR between 1.93-2.88 and 1.34-3.11, respectively.

Table 1. Characteristics of included studies in the systematic review.

Author, Year	Title	Country	Population	Follow-up time	Severity levels 5L
Battistella et al, 2022	Long-term functioning status of COVID-19 survivors: a prospective observational evaluation of a cohort of patients surviving hospitalisation	Brazil	801	3-11 months	No problems Slight Moderate Severe Extreme
Huang et al, 2021	6-month consequences of COVID-19 in patients discharged from hospital: a cohort study	China	1733	6 months	No problems Slight Moderate Severe Extreme
Huang et al, 2021	1-year outcomes in hospital survivors with COVID-19: a longitudinal cohort study	China	1276	12 months	No problems Slight Moderate Severe Extreme

CONCLUSIONS:

In this study, a greater risk of perceived pain/discomfort and anxiety /depression was observed, interfering with patients' quality of life. Considering that health systems need to reorganize post-pandemic assistance, it is important to investigate how the care network is facing the scenario of symptoms related to viral infection in order to invest in more qualified actions to monitor the sequelae.

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Figure 1: PRISMA flow diagram presenting the study selection process throughout systematic review.

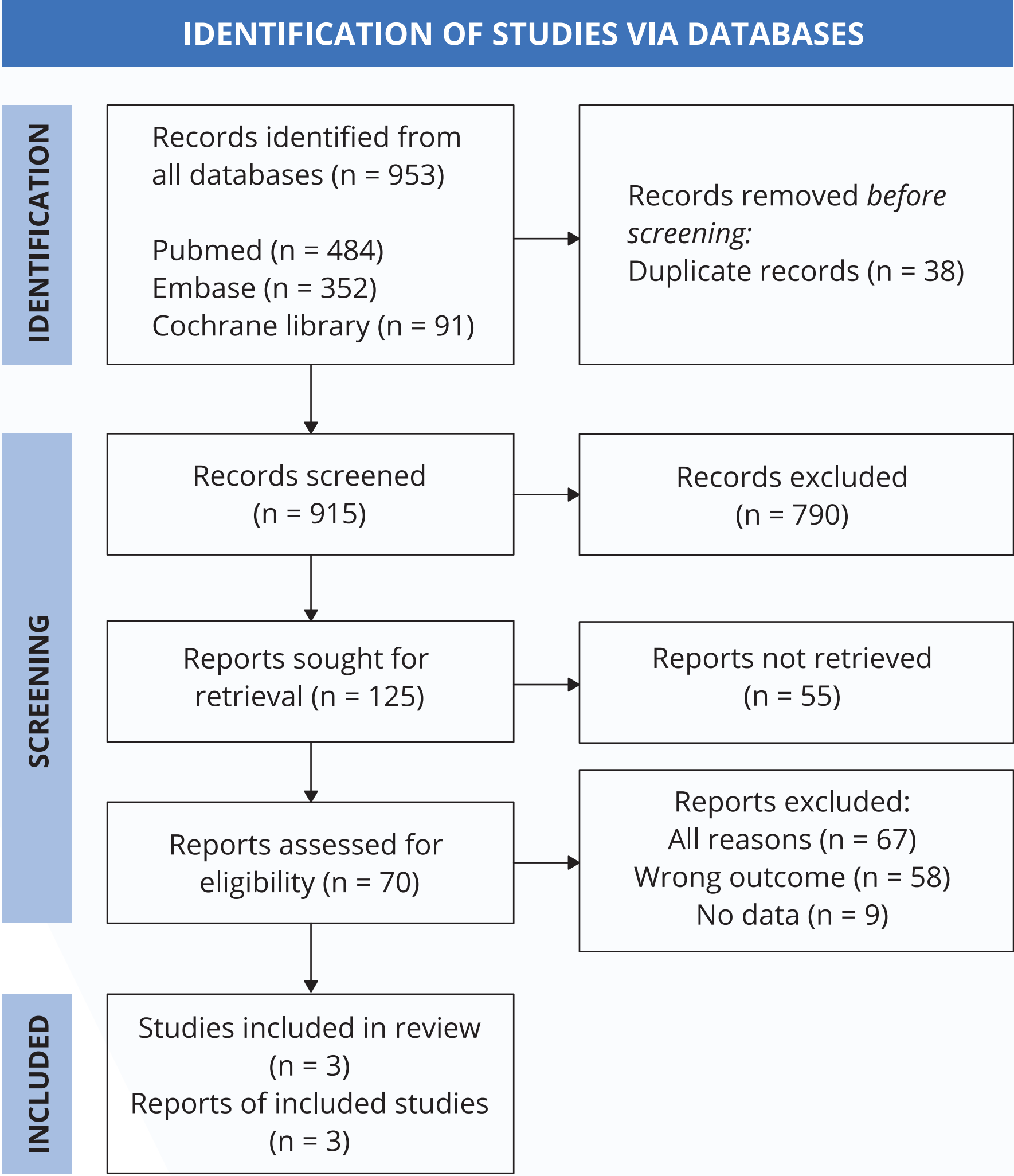


Table 2. Consensus assessments by EQ-5D instrument of population survived from COVID-19.

Severity levels (5L) *	EQ-5D	Brazil (3-11 months)				China (6 months)				China (12 months)			
		RR	Inf	Sup	p-value	RR	Inf	Sup	p-value	RR	Inf	Sup	p-value
no	d1	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
slight	d1	0.9123	0.7598	1.0955	0.3256	0.6104	0.5009	0.744	< 0.0001	0.6639	0.5391	0.8175	0.0001
mod	d1	0.9771	0.8033	1.1885	0.8168	0.2558	0.1147	0.5703	0.0009	0.4934	0.2913	0.8357	0.0086
sev	d1	0.7472	0.5737	0.9732	0.0307	0.4302	0.1075	1.7217	0.2332	0.7612	0.2852	2.0317	0.586
extr	d1	0.7105	0.4177	1.2087	0.2074					0.6797	0.0957	4.8292	0.6995
no	d2	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
slight	d2	0.457	0.3682	0.5672	< 0.0001	0.0545	0.0292	0.1014	< 0.0001	0.0447	0.0213	0.094	< 0.0001
mod	d2	0.3128	0.2351	0.4162	< 0.0001	0.0399	0.0056	0.2837	0.0013	0.1954	0.0876	0.4358	0.0001
sev	d2	0.1716	0.1074	0.2742	< 0.0001	NC	NC	NC	NC	0.7034	0.2636	1.8772	0.4824
extr	d2	0.7627	0.4831	1.2039	0.2448					1.8842	0.6069	5.85	0.2731
no	d3	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
slight	d3	0.7554	0.6217	0.9179	0.0048	0.1162	0.0755	0.1787	< 0.0001	0.0574	0.0298	0.1106	< 0.0001
mod	d3	0.7887	0.6385	0.9743	0.0277	0.1217	0.0392	0.3777	0.0003	0.1626	0.0675	0.3913	0.0001
sev	d3	0.5186	0.381	0.7058	< 0.0001	0.2047	0.0288	1.4538	0.1128	0.5267	0.1697	1.6354	0.2674
extr	d3	1.2904	0.87	1.9141	0.2049					0.6271	0.0883	4.455	0.6408
no	d4	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
slight	d4	1.9334	1.6066	2.3267	< 0.0001	2.7466	2.4443	3.0862	< 0.0001	2.6292	2.3056	2.9982	< 0.0001
mod	d4	2.4918	2.0718	2.9969	< 0.0001	2.8774	2.1852	3.7888	< 0.0001	2.8519	2.209	3.6818	< 0.0001
sev	d4	2.7128	2.2056	3.3368	< 0.0001	1.9174	0.9121	4.0308	0.0859	2.4444	1.3107	4.5587	0.0049
extr	d4	1.1337	0.6502	1.9766	0.6582					1.746	0.436	6.9921	0.4311
no	d5	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
slight	d5	1.6886	1.4157	2.014	< 0.0001	2.1546	1.9017	2.4411	< 0.0001	2.3812	2.0838	2.7212	< 0.0001
mod	d5	1.3428	1.0913	1.6523	0.0053	2.4704	1.8517	3.2958	< 0.0001	2.037	1.5198	2.7304	< 0.0001
sev	d5	2.1386	1.7413	2.6266	< 0.0001	3.1161	1.7649	5.5018	0.0001	0.9362	0.3506	2.4995	0.8953
extr	d5	1.3073	0.8138	2.1001	0.2678					NC	NC	NC	NC

Legend: d1: mobility, d2: self-care, d3: usual activities, d4: pain or discomfort, d5: anxiety or depression. (*) L1: no problems, L2: slight problems, L3: moderate problems, L4: severe problems, L5: unable to perform or extreme problems. Relative risks (RR) estimated using Poisson models.