

Systematic Review On Respiratory Failure During Covid-19

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ABSTRACT:Respiratory diseases got prevalent during the current pandemic (COVID 19). The current article is a systematic review of the literature written by the scholars on respiratory failure during the COVID-19. Articles have been downloaded from the Scopus and WoS database for the evaluation purpose. PRISMA guidelines have been used for the purpose of selection of articles. Graphical and tabular representation have been used to show the output.

Keywords: Respiratory Failure, COVID-19, Systematic Review

1. INTRODUCTION

Various medical and health problems are increasingly arising as a result of COVID-19 pandemic. For prolonged ventilation for lung disease, many surgeons pursue tracheostomy for patients. Mechanical ventilation is required for the most serious cases of air inhalation disease (COVID-19). About 10% and 15% of patients who are admitted to a hospital need mechanical ventilation, and the median period of mechanical ventilation is 7 days. However, patients with failed ventilator weaning may have tracheostomy removed. Even though endotracheal intubation is important, prolonged techniques have many problems^{1,2}. The aim of elective tracheostomy is to remove or minimise these risks to the patient while balancing the risk of an additional procedure. The main drawbacks of tracheostomy are uncommon. In the long term, the operation itself has a low chance of mortality (about 1%), trachea in nominate fistula (about 1%), and tracheoesophageal fistula (about 1%). Early complications of the pouch can occur at rates around 5%³. Elective tracheostomies in patients with chronic obstructive pulmonary disease (COPD) can raise specific challenges in terms of oxygen conservation and associated risk to health care staff. As you can see, there are many medical professionals who opposed COVID-19^{7,8} recommendations; but, at present those policies are unchanged. In addition, the guidelines of risk factors and the necessity of period of the age of onset are uncertain. The current article is a systematic review of the literature written on the respiratory failure during the coronavirus (COVID-19)⁴⁻⁷.

2. METHODOLOGY:

Research papers have been downloaded from the Scopus and WoS databases with the Boolean “Respiratory disease” and Covid-19. PRISMA guidelines have been used for the purpose of analysis. A total 1907 articles have been downloaded from Scopus. After the PRISMA guidelines 215 articles have been selected for the purpose of evaluation.

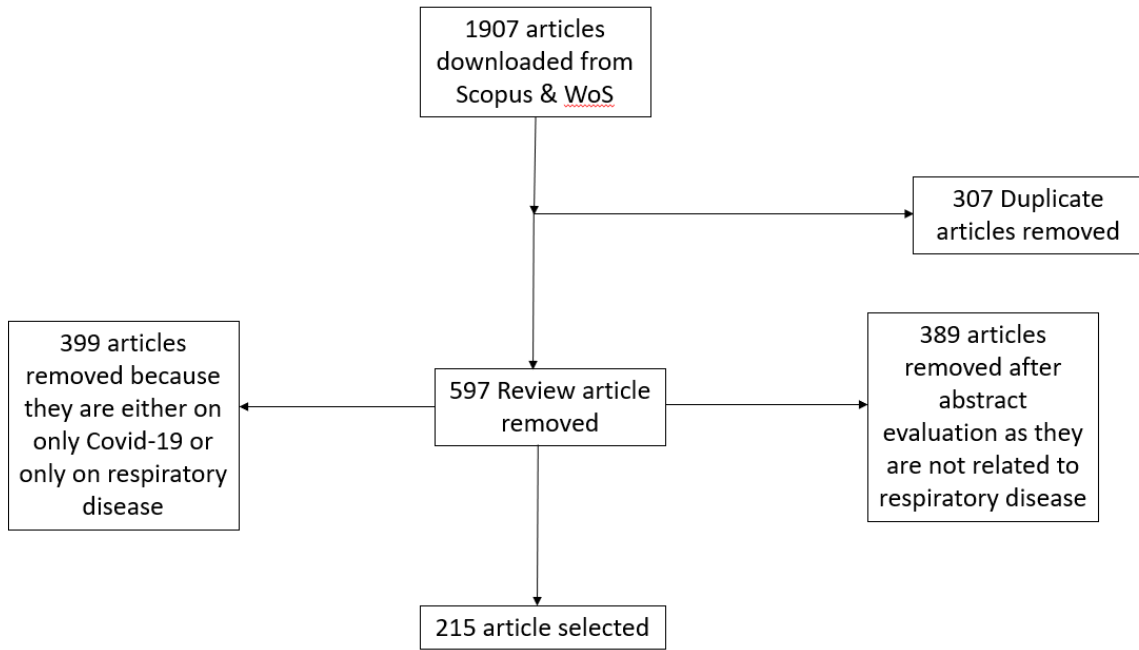


Table.1 PRISMA model

Authors have evaluated the respiratory failure and the other disease related to it during the COVID-19 in their research. Figure one shows the major keywords used by the authors in their research. The keyword use dominantly are Coronavirus disease 19, Respiratory failure, Pandemic, Intensive care unit, hypertension etc ⁸⁻¹⁰. Fig.1 shows the image of the keywords used frequently by the researchers in their research on respiratory failure during the COVID-19 disease.

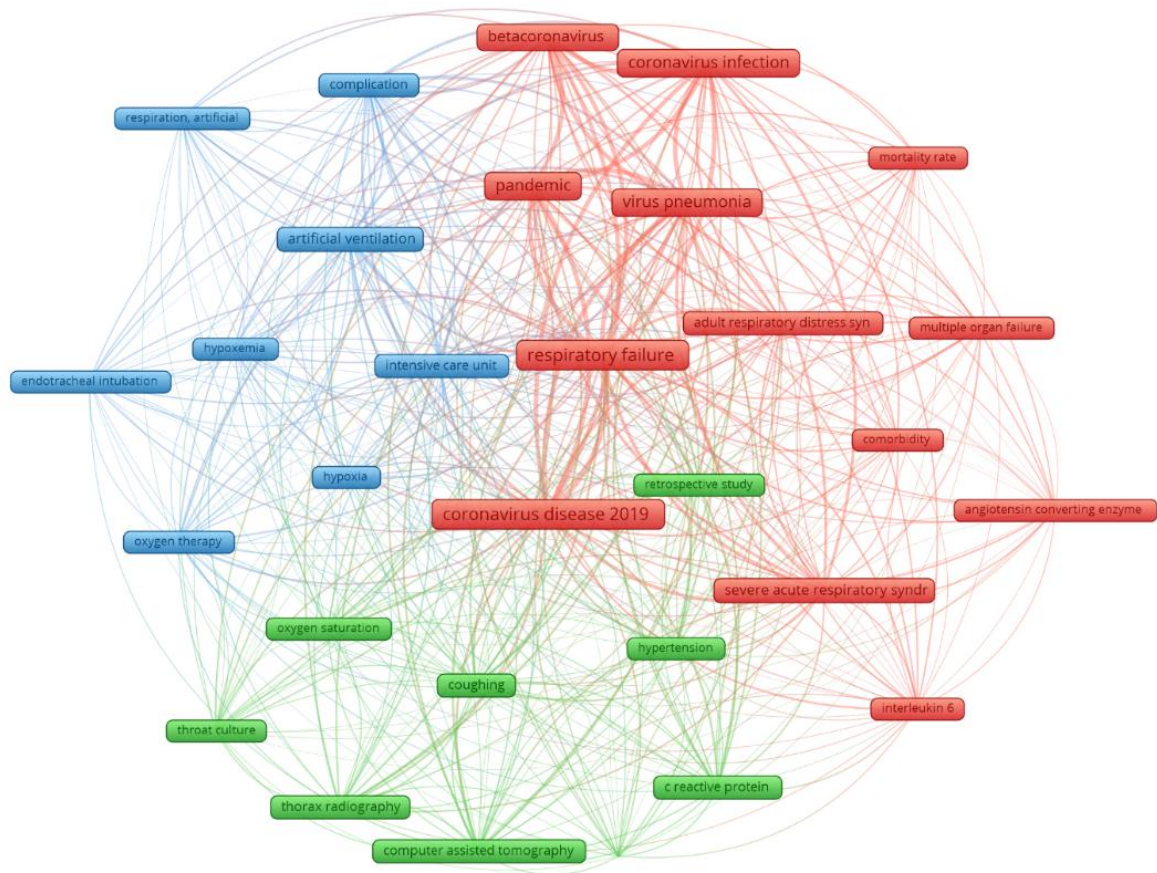


Fig.1. Keywords

Further the figure two reveals the coauthor ship country wise on the above discussed topic. It can be observed from the image and table two that China, US, UK, Italy are the country where the maximum number of documents have been written. Covid-19 was dominant in these countries and affected them the most. This may also consider to be a main reason for this that these countries share the greatest number of co authorship on the topic.

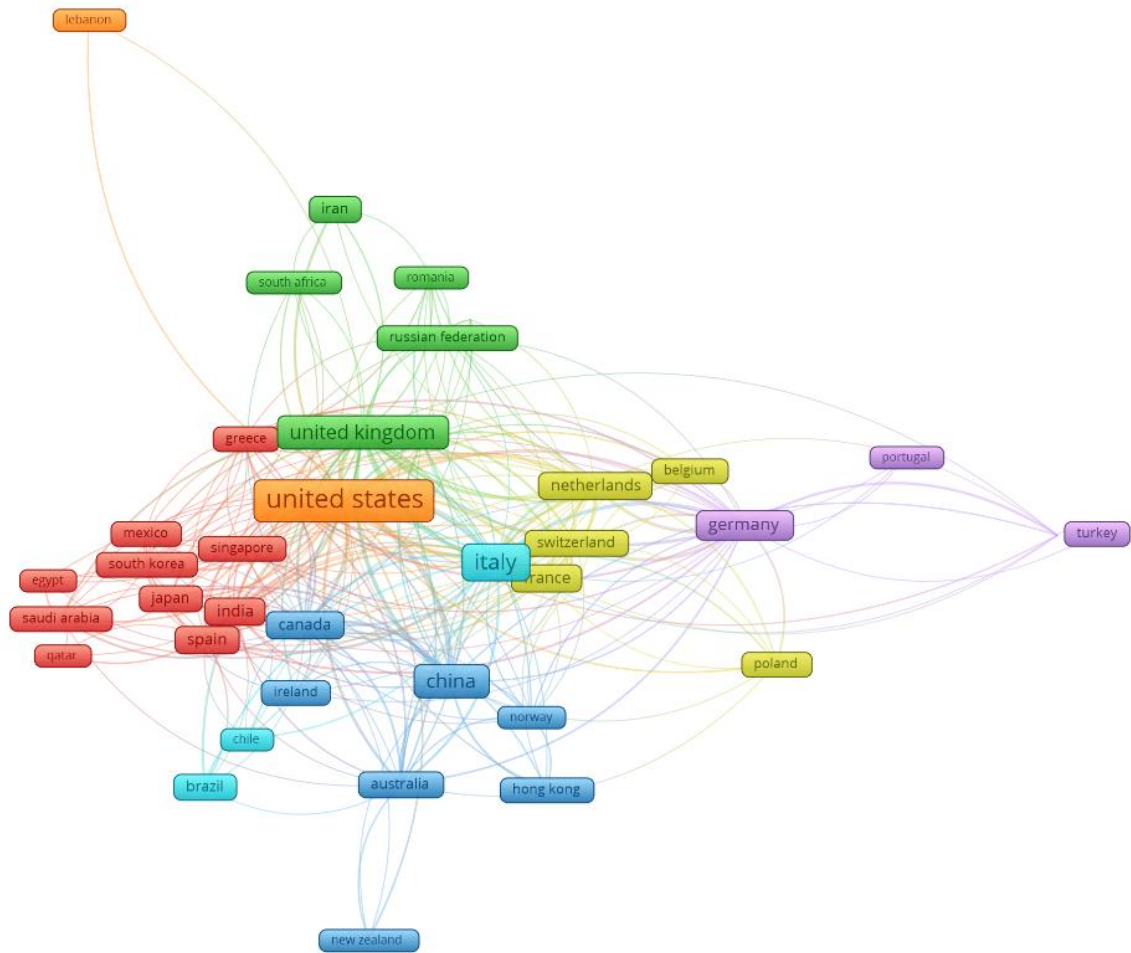


Fig.2. Co-authorship

SI No	country	documents	citations
1	australia	26	2554
2	austria	8	47
3	belgium	22	819
4	brazil	29	115
5	canada	50	928
6	chile	5	10
7	china	150	14788
8	denmark	16	1446
9	egypt	6	12
10	france	56	1761
11	germany	69	2577
12	greece	19	1239
13	hong kong	10	259
14	india	58	305
15	indonesia	7	76
16	iran	23	146
17	ireland	11	133
18	israel	6	82

19	italy	208	4418
20	japan	32	1536
21	lebanon	5	6
22	mexico	11	754
23	netherlands	41	1159
24	new zealand	8	67
25	norway	9	226
26	poland	13	79
27	portugal	6	36
28	qatar	8	14
29	romania	5	311
30	russian federation	14	176
31	saudi arabia	10	471
32	singapore	17	968
33	south africa	6	58
34	south korea	10	1198
35	spain	49	1390
36	sweden	12	209
37	switzerland	31	2307
38	thailand	6	69
39	turkey	20	47
40	united kingdom	124	6865
41	united states	375	12607

Table.2 Statistics of co-authorship

Figure 3 and Table 3 shows the source wise citation. New england journal of medicine, critical care, american journal of respiratory and critical care medicine are the ones which published the most number of research papers but acta biomedical and intensive care medicine are the journals which received the highest number of citation on the respiratory failure topic.

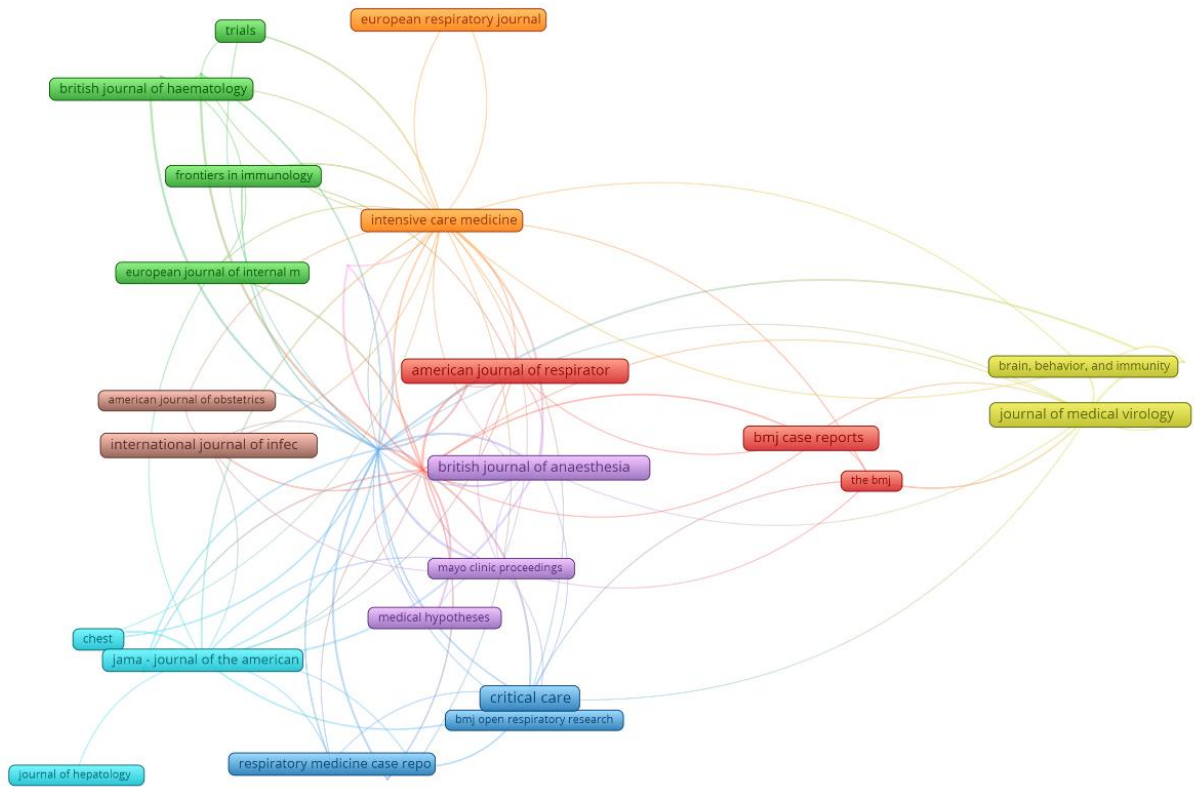


Fig.3. Source wise citation

Sl. No	source	documents	citations
1	acta biome dica	5	513
2	american journal of case reports	10	10
3	american journal of obstetrics and gynecology	5	343
4	american journal of respiratory and critical care medicine	18	417
5	american journal of transplantation	5	209
6	american journal of tropical medicine and hygiene	9	20
7	anaesthesia	5	206
8	archivos de bronconeumologia	6	13
9	bmj case reports	15	13
10	bmj open respiratory research	5	9
11	brain, behavior, and immunity	6	271
12	british journal of anaesthesia	17	128
13	british journal of haematology	13	219
14	canadian journal of anesthesia	7	25
15	chest	6	13
16	clinical immunology	6	71
17	clinical medicine, journal of the royal college of physicians of london	5	6
18	critical care	24	207
19	eu ropean journal of internal medicine	8	238
20	eu ropean respiratory journal	12	122
21	eu ropean review for medical and pharmacological sciences	6	103
22	frontiers in immunology	7	21

23	frontiers in medicine	5	16
24	frontiers in pharmacology	5	7
25	idcases	7	100
26	intensive care medicine	12	2136
27	international journal of infectious diseases	17	430
28	international journal of research in pharmaceutical sciences	5	1
29	jama - journal of the american medical association	11	1564
30	journal of cardiac surgery	6	25
31	journal of critical and intensive care	6	0
32	journal of hepatology	5	68
33	journal of infection	6	69
34	journal of intensive care medicine	7	11
35	journal of medical virology	15	1032
36	journal of the neurological sciences	8	31
37	journal of thrombosis and haemostasis	6	319
38	mayo clinic proceedings	5	44
39	medical hypotheses	7	23
40	minerva anesthesiologica	5	5
41	new england journal of medicine	13	5818
42	otolaryngology - head and neck surgery (united states)	5	38
43	respiratory medicine case reports	11	12
44	the bmj	5	933
45	the lancet	6	4029
46	the lancet respiratory medicine	9	352
47	thrombosis research	7	25
48	trials	12	38
49	world journal of clinical cases	5	3

Table.3 Statistics of Source wise Citation

The evaluation of country-wise citation also shows the same that the USA, UK, CHINA and ITALY have the most number of citation country-wise. This is evident that this country suffers primarily and the most by this pandemic, so the research has started early in these countries and they get most number of document published and got the highest citation as well. Other than this these countries have invested good amount of money for doing research on the above discussed topic.

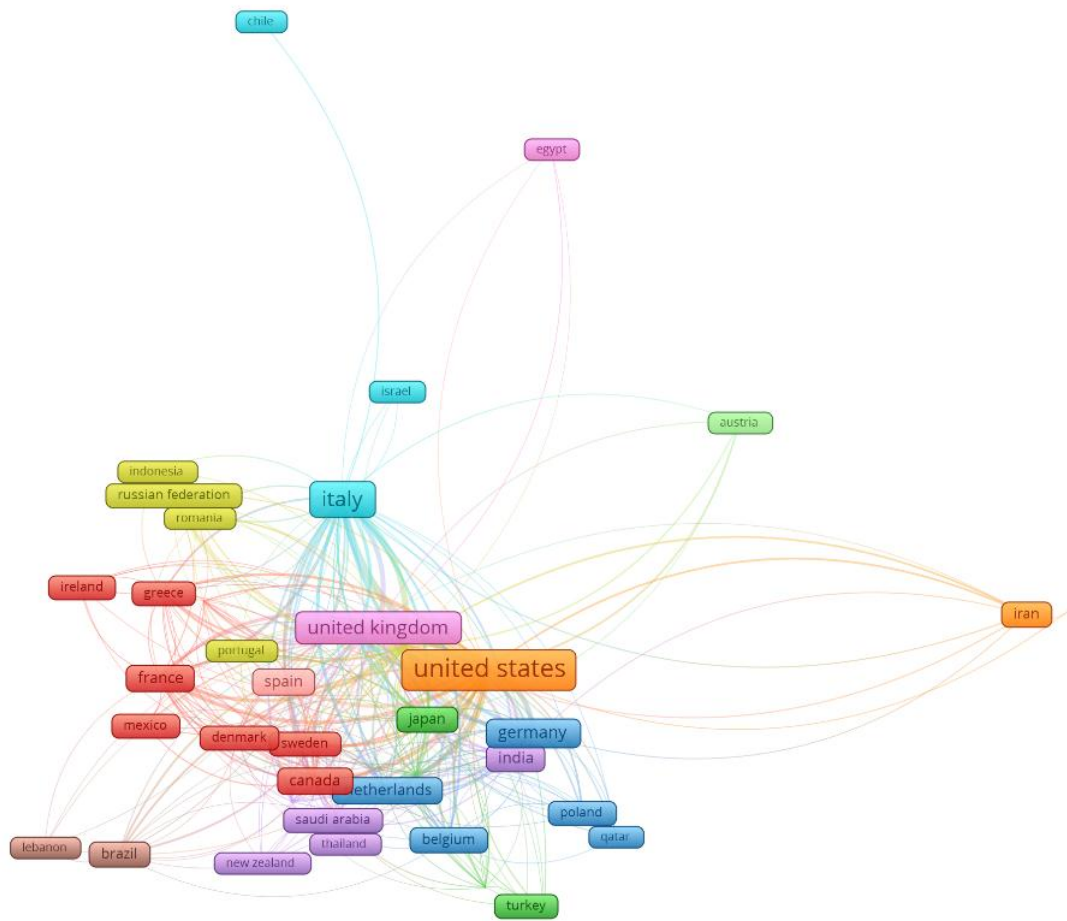


Fig.4 Country wise citation

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22	mexico	11	754
23	netherlands	41	1159
24	new zealand	8	67
25	norway	9	226
26	poland	13	79
27	portugal	6	36
28	qatar	8	14
29	romania	5	311
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Table.4 Statistics of country wise citation

3. DISCUSSION

It is evident that the countries which suffered primarily and the most are the one where the research on respiratory failure done by major authors ^{11,12}. These are the countries which announces the post COVID-19 impact on the patients primarily and the respiratory diseases are the prevalent one amongst them. It is also evident that the research across the globe worked on the topic and coauthored the research which provides a wider access of the data to researchers across the globe. Majorly the developed countries leads the research in the above discussed topic ¹³⁻¹⁷.

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