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1.0 Search overview

MEDLINE via Ovid	690
CINAHL via Ebsco	201
PsycINFO via Ebsco	19
Scopus	624
Web of Science Core Collection	456
Total	1990
Total deduplicated via Endnote	1067
Total deduplicated again via rayyan	

Searches were run 9th June 2021.

Publication limit of 2020 to present was applied.

Search 1: Medline

Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions(R) <1946 to June 08, 2021>

- 1 (Emphysema* or copd or coad or cobd or aecb or aecopd or chronic obstructive pulmonary disease or chronic bronchitis or chronic asthma).ti,ab. or exp pulmonary disease, chronic obstructive/ or exp bronchitis, chronic/ or exp asthma/ or exp emphysema/ 238759
- 2 (coronavirus* or coronovirus* or coronoravirus* or coronaravirus* or corono-virus* or corona-virus* or COVID-19 or CORVID-19 or "2019nCoV" or "2019-nCoV" or WN-CoV or nCoV or "SARS-CoV-2" or HCoV-19 or "novel coronavirus").ti,ab. or exp Coronavirus/ or exp Coronavirus Infections/ or exp COVID-19/ or exp COVID-19/ or exp SARS-CoV-2/ or xp COVID-19 Serological Testing/ or exp COVID-19 Nucleic Acid Testing/ or exp COVID-19 Testing/ or exp COVID-19 Vaccines/ or exp betacoronavirus/161390
- 3 (isolat* or quarantin* or selfquarantin* or lockdown or social distanc* or self isolat* or house bound or homebound or social exclusion or shield* or vulnerab* or (physical* adj (distan* or separate*))).ti,ab. or exp homebound persons/ or exp physical distancing/ or exp quarantine/ or exp social isolation/ 1594878
- 4 (experienc* or satisfac* or concern* or dissatisfact* or perspective or impact or "quality of life" or exacerbat* or deteriorat* or wellbeing or well-being or mental health or behav* or self-management or self care or risk*).ti,ab. or exp patient satisfaction/ or exp "Quality of Life"/ or exp Health Impact Assessment/ or exp self-management/ or exp adaptation, psychological/ or Risk/ or Risk Reduction Behavior/ or Risk Management/ or Risk-Taking/ 6544831
- 5 1 and 2 and (3 or 4) 760
- 6 limit 5 to yr="2020 -Current" 690

Search 2: CINAHL

#	Query	Limiters/Expanders	Last Run Via	Results
S14	S3 AND S6 AND S12	Limiters - Published Date: 20200101-20211231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	201
S13	S3 AND S6 AND S12	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	222
S12	S7 OR S8 OR S9 OR S10 OR S11	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	2,530,476
S11	(MH "Risk Taking Behavior+") OR (MH "Risk Assessment") OR (MH "Attitude to Risk") OR (MH "Risk Management")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	151,832
S10	(MH "Personal Satisfaction+") OR (MH "Patient Satisfaction+") OR (MH "Self Care+") OR (MH "Self-Management") OR (MH "Quality of Life+") OR (MH "Health Impact Assessment") OR (MH "Adaptation, Psychological+")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database -	289,085

			CINAHL	
S9	<p>experienc* or satisfac* or concern* or dissatisfact* or perspective or impact or "quality of life" or exacerbat* or deteriorat* or wellbeing or well-being or mental health or behav* or self-management or self care or risk*</p>	<p>Expanders - Apply equivalent subjects Search modes - Boolean/Phrase</p>	<p>Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL</p>	2,416,925
S8	<p>(MH "Homebound Persons") OR (MH "Social Distancing") OR (MH "Social Isolation+") OR (MH "Quarantine") OR (MH "Stay-at-Home Orders")</p>	<p>Expanders - Apply equivalent subjects Search modes - Boolean/Phrase</p>	<p>Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL</p>	17,903
S7	<p>(isolat* or quarantine or selfquarantine or lockdown or social distanc* or self isolat* or house bound or homebound or social exclusion or shield* or vulnerab* or (physical* n1 (distan* or separate*)))</p>	<p>Expanders - Apply equivalent subjects Search modes - Boolean/Phrase</p>	<p>Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL</p>	174,826
S6	S4 OR S5	<p>Expanders - Apply equivalent subjects Search modes - Boolean/Phrase</p>	<p>Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL</p>	58,610
S5	<p>(MH "COVID-19") OR (MH "COVID-19 Vaccines") OR (MH "COVID-19 Pandemic") OR (MH "SARS-CoV-2") OR (MH "Coronavirus+") OR (MH "Coronavirus Infections+")</p>	<p>Expanders - Apply equivalent subjects Search modes - Boolean/Phrase</p>	<p>Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL</p>	40,537

S4	coronavirus* or coronovirus* or coronoravirus* or coronaravirus* or corono-virus* or corona-virus* or COVID-19 or CORVID-19 or "2019nCoV" or "2019-nCoV" or WN-CoV or nCoV or "SARS-CoV-2" or HCoV-19 or "novel coronavirus"	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	56,752
S3	S1 OR S2	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	73,333
S2	(MH "Pulmonary Disease, Chronic Obstructive") OR (MH "Lung Diseases, Obstructive+") OR (MH "Emphysema+") OR (MH "Bronchitis, Chronic") OR (MH "Asthma-Chronic Obstructive Pulmonary Disease Overlap Syndrome") OR (MH "Asthma+")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	64,351
S1	Emphysema* or copd or coad or cobd or aecb or aecopd or chronic obstructive pulmonary disease or chronic bronchitis or chronic asthma	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	34,226

Search 3: PsycINFO

#	Query	Limiters/Expanders	Last Run Via	Results
S13	S3 AND S6 AND S12	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	19

S12	S7 OR S8 OR S9 OR S10 OR S11	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	3,185,130
S11	(DE "Risk Assessment" OR DE "Risk Factors" OR DE "Risk Management" OR DE "Risk Perception" OR DE "Risk Taking") OR (DE "At Risk Populations")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	204,967
S10	((((DE "Client Satisfaction") OR (DE "Quality of Life")) OR (DE "Well Being") OR (DE "Mental Health" OR DE "Mental Status")) OR (DE "Self-Care")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	180,796
S9	experienc* or satisfac* or concern* or dissatisfact* or perspective or impact or "quality of life" or exacerbat* or deteriorat* or wellbeing or well-being or mental health or behav* or self-management or self care or risk*	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	3,144,020
S8	((((DE "Social Isolation" OR DE "Patient Seclusion") OR (DE "Quarantine")) OR (DE "Homebound")) OR (DE "Physical Distancing")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	13,311
S7	isolat* or quarantin* or selfquarantin* or lockdown or social distanc* or self isolat* or house bound or homebound or social exclusion or shield* or vulnerab* or (physical* N1 (distan* or	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	165,514

separate*))

S6	S4 OR S5	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	6,581
S5	(DE "Coronavirus" OR DE "COVID-19")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	3,752
S4	(coronavirus* or coronovirus* or coronoravirus* or coronaravirus* or coronovirus* or corona-virus* or COVID-19 or CORVID-19 or "2019nCoV" or "2019-nCoV" or WN-CoV or nCoV or "SARS-CoV-2" or HCoV-19 or "novel coronavirus")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	6,581
S3	S1 OR S2	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	8,824
S2	(DE "Chronic Obstructive Pulmonary Disease" OR DE "Bronchial Disorders" OR DE "Pulmonary Emphysema") OR (DE "Asthma")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	6,887
S1	(Emphysema* or copd or coad or cobd or aecb or aecopd or chronic obstructive pulmonary disease or chronic bronchitis or chronic asthma)	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Basic Search Database - APA PsycInfo	3,917

Search 4: Scopus

TITLE-ABS-KEY (*emphysema** OR *copd* OR *coad* OR *cobd* OR *aecb* OR *aecopd* OR "chronic obstructive pulmonary disease" OR "chronic bronchitis" OR "chronic asthma") AND TITLE-ABS-KEY (*coronavirus** OR *coronovirus** OR *coronoravirus** OR *coronaravirus** OR *coronovirus** OR *corona-virus** OR *covid-19* OR *corvid-19* OR "2019nCoV" OR "2019-nCoV" OR *wncov* OR *ncov* OR "SARS-CoV-2" OR *hcov-19* OR "novel coronavirus" OR *betacoronavirus*) AND (TITLE-ABS-KEY (*isolat** or *quarantin** or *selfquarantin** or *lockdown* or "social distanc*" or "self isolat*" or "house bound" or *homebound* or "social exclusion" or *shield** or *vulnerab** OR (*physical** W/1 (*distan** OR *separate**))) OR TITLE-ABS-KEY (*experienc** or *satisfac** or *concern** or *dissatisfact** or *perspective* or *impact* or "quality of life" or *exacerbat** or *deteriorat** or *wellbeing* or *well-being* or "mental health" or *behav** or *self-management* or "self care" or *risk**)) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020))

Search 5: Web of Science Core Collection

emphysema* OR copd OR coad OR cobd OR aecb OR aecopd OR "chronic obstructive pulmonary disease" OR "chronic bronchitis" OR "chronic asthma" (Topic) and coronavirus* OR coronavirus* OR coronoravirus* OR coronaravirus* OR corono-virus* OR corona-virus* OR covid-19 OR corvid-19 OR "2019nCoV" OR "2019-nCoV" OR wn-cov OR ncov OR "SARS-CoV-2" OR hcov-19 OR "novel coronavirus" OR betacoronavirus (Topic) and isolat* or quarantin* or selfquarantin* or lockdown or social distanc* or self isolat* or house bound or homebound or social exclusion or shield* or vulnerab* OR (physical* near/1 (distan* OR separate*)) or experienc* or satisfac* or concern* or dissatisfact* or perspective or impact or "quality of life" or exacerbat* or deteriorat* or wellbeing or well-being or mental health or behav* or self-management or self care or risk* (Topic) and 2020 or 2021 (Publication Years)

2.0 Inductive codes

COPD Systematic Review

Name	Description
Broader societal problems caused by covid and blame	Accessing food, financial challenges of lockdown, concerns about the government's management of health services and society - blame
Closure, unprepared, overwhelmed healthcare services	Descriptions, effects, impacts
Decision making	It could be hard to make decisions, due to uncertainty, unclear messaging.
Eligibility for healthcare, perceptions of hospitalisations during covid	Patients with COPD were acutely aware that if they caught covid, they may not survive it and they would not likely be eligible for ventilation due to their health status. Many thought there would be rationing of services and care, and they would be low priority. The influence of previous experiences of exacerbations was high on people's minds, there was also a lack of trust in healthcare services to receive needed care and fear they would end up in the 'substandard' Nightingale hospitals
End of life - care, discussion, decisions, anxieties	patients with advanced disease were upset that they had to spend what remained of their life in isolation. They did not want to suffer an undignified death, they worried about dying, perhaps more frequently, during covid. they thought about their end-of-life care requirements
Fears	Multiple fears were expressed - catching covid, hospitalisations, not getting treatment due to rationing, fear of mechanical ventilation, fear what the future might hold, fear of being a source of transmission
Going beyond guidance	Many patients went beyond guidance in terms of keeping themselves safe, such as breaking off physical contact with family members.

Name	Description
Influence of the media	Source of information, source of fear, perpetrator of misinformation, useful friend during isolation
Negative emotional or psychosocial health impacts	Negative emotional impacts like isolation and loneliness were reported, as were other emotions like jealousy of a spouse who was not subject to the same health related restrictions and sadness at the lack of priority they were assigned in relation to re-opening of society.
Negative physical health impacts	Negative physical impacts included possible dyspnoea due to increased anxiety, inactivity, there were also challenges distinguishing the cause of physical symptoms
New social media or other daily routines relating to communication	New routines were established, particularly in relation to keeping in contact. social media was particularly important for many
Personal protective equipment	
Reassurance, consideration or lack there of	Some patients felt reassured by national messages from the government around protecting citizens, but this seemed to wain as time went on. Some felt that pro-active contact from services, health or otherwise, would have been reassuring, but few seemed to receive this. Some felt not considered by governments in their decision making, particularly around opening up. Many felt forgotten due to this lack of contact or consideration
Risk perception (national)	
Risk perception (personal)	People with COPD perceived great risk from COVID 19, perhaps beyond that suggested by media. Risk was perceived to be extended further by co-morbid conditions
Risk posed by others	
Social isolation	Social isolation had many impacts, mostly negative, patients felt isolated and lonely, and they missed physical contact with people
Uncertainty	Lots of things were uncertain in terms of what to do, where to go, who to see, what would the future hold. These could be a source of anxiety and led to feelings of lack of control. there was a lot of uncertainty of shielding categories and

Name	Description
	actions, these were not communicated well and there was no personalisation from healthcare providers
Unclear information	It was not always clear to patients with COPD what they should do in terms of self-isolation or self-protection during the pandemic. Sometimes messages were not explicit, and COPD was not always clearly identified as a condition at risk. Communication of risk in terms of categories vulnerable/extremely clinically vulnerable was perceived to be unclear and acted as a barrier to some patients being able to properly shield e.g., the NHS workers with underlying diseases
Virtual consultations	

2.1 Inductive codes organized under synthetic construct of risk

Name
5.0 SOCIO-DEMOGRAPHIC FACTORS - general mediator of all themes Socio demographics influenced some of the broader societal problems caused by covid and New social media or other daily routines relating to communication
3.1 SOCIO-CULTURAL INFLUENCES; SOCIAL CONSTRUCTION OF RISK Tension between adhering and managing broader societal problems caused by covid and
3.0 SOCIO-CULTURAL INFLUENCES; VALUES Influence of the media Impact of interpretation that government were 'egotistical'
2.1 EXPERIENTIAL PROCESSING; PERSONAL EXPERIENCE Previous experiences of hospitalisations pre covid influenced perception of risk
2.0 EXPERIENTIAL PROCESSING; EMOTION, AFFECT Outcomes of fears; Negative physical health impacts Outcome of fears - emotional or psychosocial health impacts Fears
1. COGNITIVE FACTORS; KNOWLEDGE Unclear information and uncertainty Perceptions of the closure of and unprepared, overwhelmed healthcare services influenced Perceptions of risk in context of underlying disease Perceived knowledge & perceptions about eligibility for healthcare, hospitalisations during Outcome of knowledge - emotional, physical, psychosocial health impacts Knowledge about transmission sources

3.0 Summary of studies measuring anxiety and stress during COVID-19

Study	Design	Sample (n & type)	Specific question(s) relating to psychological impact within study	Result	Category of Impact
1	Survey	n=84 COPD	Do you fear the COVID-19 epidemic?	27.5% (n=23) agreed with this statement	General fear/worry/anxiety/stress
3	Assessment	N=144 COPD	Does the participant have high-perceived stress in relation to COVID-19?	8.8% (n=12) scored high enough to meet the threshold for high-perceived stress.	General fear/worry/anxiety/stress
4	Survey	n=160 COPD	During the pre-lockdown period, did you have more anxiety?	28% (n=45) agreed with this statement 93% indicated 'a little more'; 7% indicated 'much more'	General fear/worry/anxiety/stress
			During the lockdown period, did you have more anxiety?	58% (n=92) agreed with this statement 52% indicated 'a little more', 48% indicated 'much more'	General fear/worry/anxiety/stress
			Are you fearful of getting COVID-19?	67% (n=67) agreed with this statement	General fear/worry/anxiety/stress
8	Survey	n=100 COPD	Has worry or fear over COVID-19 made it difficult for you to manage your chronic condition?	45.7% (n=137) agreed with this statement	Disease management
9	Survey	n=300 mixed	Has worry or fear over COVID-19 made it difficult for you to manage your chronic condition?	45.7% (n=137) agreed with this statement	Disease management
Abbreviations		COPD= Chronic Obstructive Pulmonary Disease			

4.0 Summary of studies assessing exacerbations, hospitals and community management of COPD during COVID-19

Study	n	Method	Country	Events measures/described	Outcome	Increase/decrease	Comment
Zhang et al, 2020 (13)	84	Telephone Survey	China	COPD exacerbation rates pre / during the pandemic	A reduction in exacerbation rates occurred between March-April 2019 (22.6%) and March-April 2020 (6%).	Reduced exacerbations	Self-reported data
McAuley al, 2021(15)	160	Telephone survey and electronic medical record review	United Kingdom	Number of community managed COPD exacerbations and COPD related hospitalizations pre / during the pandemic	The number of exacerbations increased overall (2019 n=99, 2020 n=126) with more community-managed exacerbations (2019 = 88, 2020 n=121) and less COPD related hospitalizations (2019 n=9; 2020 n=5)	Increased exacerbations. Decreased hospitalisations.	The majority of patients had severe COPD.
Hu et al, 2020 (16)	489	Telephone survey and electronic medical record review	China	Number of COPD exacerbations and hospitalizations pre / during the pandemic	A reduction in exacerbations overall was observed between October 2018-March 2019 (n=160) and December 2019 to March 2020 (n=97) as well as a reduction in hospitalizations (n= 90 and n=32 relating to the same time periods)	Reduced exacerbations	
Gonzalez et al, 2021 (17)	310	Telephone survey and electronic medical records	Spain	Number of COPD exacerbations pre / during the pandemic	A reduction of exacerbations was observed (2019 n=102; 2020 n=39)	Reduced exacerbations	
Faria et al, 2021 (18)	286	Electronic medical record review	Portugal	Number of COPD exacerbations requiring either emergency room attendance or hospital admission pre / during the pandemic	A reductions in exacerbations overall was observed (2019 n=60; 2020 n=12) as well as a reduction in the number of people who were hospitalised, both in real numbers as well as proportion of people who had an exacerbation (2019 n=31 (52% of total exacerbations, 2020 n=3 (25% of total exacerbations)	Reduced exacerbations Decreased hospitalisations.	Mild or moderate exacerbations were not assessed.
Alsallakh et al, 2021(21)	N/A	Electronic databases	Scotland & Wales	Weekly averages of COPD related primary care consultations, exacerbations requiring hospital admission and emergency department attendance pre / during the pandemic	The number of hospital admissions for COPD in 2020 were lower than the preceding 5 years. In both countries, a reduction was associated with the introduction of lockdown (Scotland = 48% reduction, Wales 38%). In Wales, introduction of lockdown saw an instantaneous reduction (of 39%) of primary care consultations, compared to the preceding 5 years. Also in Wales, there were lower emergency department attendances for COPD compared with the preceding 5 years and introduction of lockdown was associated with a 46% reduction.	Reduced hospitalisations. Reduced A&E attendances Reduced Primary Care consultations	
Tan et al, 2021 (24)	N/A	Electronic databases	Singapore	Monthly averages of hospital admissions for COPD exacerbation pre / during the pandemic	There was a reduction in the average number of admissions for COPD exacerbation, comparing pre-pandemic (January 2018-January 2020) and during (February 2020 -July 2020), with pre-pandemic having an average of 92 (SD 18) and during 36 (SD 6)	Reduced hospitalisations	No data on demographics or disease characteristics provided.
Chan et al, 2020	N/A	Electronic databases	Hong Kong	Monthly averages of hospital admissions for COPD	The average total of admissions from January to March from 2015 to 2019 (n=92 ranging 81-105) were more than double the amount of the	Reduced hospitalisations	

(30)				exacerbation pre / during the pandemic	total admissions in January to February 2020 (n =41).		
Kyriakopoulos et al, 2021 (31)	1,307	Electronic medical records	Greece	Number of hospital admissions for a COPD exacerbation pre / during the pandemic	Admissions for COPD were half the number compared to the same period the year before (2019 n=302, 2020 n=146)	Reduced hospitalisations	
Huh et al, 2021 (32)	N/A	Electronic databases	Republic of Korea	Incidences of unspecified hospital admissions for people with COPD, as well as admissions with pneumonia for people with COPD pre / during the pandemic	A reduction was observed in both hospital admissions for people with COPD (2016-2019 rate = 435.11 per 100000 and 2020 n=251.7 per 100,000) as well as admissions for people with pneumonia and a background of COPD (2016-2019 rate 28304.95 per 100000 and 2020 363.33 per 100000)	Reduced hospitalisations	
Helgeland et al, 2021 (33)	N/A	Electronic databases	Norway	Daily hospital admission rates, including COPD related reasons, pre / during the pandemic	An overall reduction in admissions for all reasons (average admissions per day: January-March 2020 n=2300, March to April n=1500) but by July the admission rate had increased again to a comparable amount from the previous year, except for COPD-related admissions which remained low.	Reduced hospitalisations	COPD data was not explicitly reported
Stohr et al, 2020 (34)	N/A	Electronic databases	Germany	Incidences of hospital admissions for different reasons, including COPD exacerbations	There was an observed reduction in hospital admissions for a COPD exacerbation (-28%)	Reduced hospitalisations	Diagnosis was based on emergency care notes.
Mansfield	N/A	Electronic databases review	United Kingdom	To ascertain what had happened to general practice and primary care contacts for acute physical and mental health outcomes during the pandemic.	Primary care contacts for key physical and mental health conditions dropped considerably after the introduction of population-wide restriction measures in March, 2020 (April 26 -May 2 period 7863 without COVID-19 restrictions vs 4222 with COVID-19 restrictions and June 28 – July 4 period 6594 without COVID-19 restrictions vs 3367 with COVID-19 restrictions).	Reduced number of primary care contacts to treat COPD exacerbations	
Abbreviations:		COPD= Chronic Obstructive Pulmonary Disease					

5.0 Risk of Bias Assessment Qualitative Studies

Study ID	Congruity between stated philosophical perspective and research methodology?	Congruity between research methodology and the research question/objectives?	Congruity between research methodology and methods used to collect data?	Congruity between research methodology and the representation of analysis of data?	Congruity between the research methodology and the interpretation of results?	Is there a statement locating the researcher culturally or theoretically?	Is the influence of the researcher on the research and vice-versa, addressed?	Are participants and their voices adequately represented?	Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Overall appraisal
Mousing	YES Describes a philosophical perspective that fits with methods	YES Qualitative methodology, suitable for exploring experiences	YES Semi-structured interviews, open ended questions	YES Quotes presented to demonstrate themes	YES Approach seeks to explore experiences and meaning of these to patients.	NO No statement found	NO No statement found	YES A good range of quotes from most of the participants and the conclusions are reflected in the quotes	UNCLEAR No evidence of ethical approval by an appropriate body however they show some steps taken to comply with Helsinki Declaration and data protection laws	YES Conclusion matches with the quotes	INCLUDE
Ekdahl	NO No theoretical or philosophical perspective stated	YES Qualitative methodology, suitable for exploring experiences	YES Semi-structured interviews, open ended questions	UNSURE Only one example of a theme, but they did not show how this theme was made.	YES Even though the interpretation is rather superficial, the interpretation is plausible	NO No statement found	UNCLEAR There is some discussion on the researcher's background, experience, education, and the way the researcher engages in data collection and analysis.	YES Good range of quotes and the conclusions they draw from the data are reflected in the quotes they choose.	YES Approval for the study was obtained from the Ethical Review Agency in Sweden	UNCLEAR There was a change in aims/objectives of the study from the start to when the study was conducted (due to pandemic starting) and this is reflected in the change in planned questions. they included COVID	INCLUDE
Phillip	YES Describes the critical realist paradigm as their methodology.	YES Qualitative methodology, suitable for exploring experiences	YES Using open-ended questions. They used a survey which could reach a wide-range of people	YES The authors have shown how they have coded the data (thematic analysis, as stated)	YES The authors are being descriptive, rather than trying to interpret or explain as they say they are taking a critical realist approach.	NO No statement found	NO No statement found	YES Good range of quotes and the conclusions they draw from the data are reflected in the quotes they choose.	YES Ethical statement included in paper	YES The conclusions made by the authors reflect the data (quotes)	INCLUDE

6.0 Risk of bias assessment quantitative studies

Study ID	Confounding factors identified?	Strategies to deal with confounding factors stated?	Outcomes measured in valid and reliable way?		Appropriate statistical analysis used?		Overall appraisal
Zhang,	YES Confounding factors like age, gender, smoking history, exacerbation frequency, engagement with doctors, medications, possible depression were identified	UNCLEAR Some strategies described for particular analysis,, but not all analyses.	UNCLEAR	Recognised/replicable tools like CAT, MRC were used for symptom burden/QoL. Exacerbation frequencies were measured but not defined. Possible anxiety and depression symptoms scales were not clearly defined.	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Pedrozo-Pupo,	NO Essentially a convenience sample and the authors do not really discuss confounding such as baseline depression status	NO No strategies described	YES	Used scales for the different scores which have been used for other patient cohorts(so comparable) and these scales have also been critiqued by others	UNCLEAR	The authors did not discuss any statistical analysis - they have calculated an odds ratio comparing the results (COPD vs asthma) but no details on how they did this	INCLUDE
McAuley	YES Rich data collated through survey to detail confounding factors	YES Strategies described	YES	Good detail of methodology	UNCLEAR	Good detail of methodology however not sufficiently powered to give definitive statistical significance	INCLUDE
Hu	YES Co morbidities identified and multivariate analysis looking at confounding variables	NO No strategies described	YES	Details of hospitalisation, death rates, exacerbation rates	UNCLEAR	Yes, although could be looked at as "fishing" with such wide analysis between groups	INCLUDE
Gonzalez	YES Time line includes same time frame to allow for season variation	YES Strategies described	YES	CAT and MRC, not just the number but type of COPD exacerbation described	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Faria	YES Time line includes same time frame to allow for season variation	YES Strategies described	YES	Electronic systems- although risk of poor coding or inputting. Used national databases to avoid overlooking patients at other hospital sites.	UNCLEAR	Yes to an extent, with multiple confounding variables a multivariate analysis may have been more appropriate than a paired t-test	INCLUDE
Pleguezuelos	NO	NO	YES	Using validated mMRC, CAT,	UNCLEAR	Only descriptive	INCLUDE

	No discussion about confounding factors. Patients were recruited/identified consecutively	No strategies described		EuroQ5D, HAD scores and simple yes/no questions for COVID specific		statistics were performed. Data are reported as mean and standard deviations (SD) or number of observations and percentages.	
Imeri	NO Essentially a convenience sample and the authors do not really discuss confounding such as baseline depression status.	NO No strategies described	YES	the questionnaires used were already established questionnaires used and critiqued by others	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Alsallakh	YES Time line includes same time frame to allow for season variation	YES Strategies described	YES	Only difficulty is variation in coding used	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Boyce	NO "We did not collect data on age or other demographic characteristics, so it was impossible to control for confounders."	NO No strategies described	UNCLEAR	Not clear	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Tan	NO Different times of year as comparison, not allowing for seasonal variation, although shown graphically	NO No strategies described	YES	Simple admissions data recorded	YES	Basic t-test, but this could have been improved with different testing at various time points	INCLUDE
Wu	YES They identify confounding factors and list limitations these cause the interpretation	YES Strategies described	UNCLEAR	Unclear on outcomes	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Wankowicz	NO No time points explained, other than mid pandemic	NO No strategies described	YES	Validated questionnaires	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Liang	NO No allowance for seasonal variation or other confounding variables	NO No strategies described	YES		NO	Statistical comparison could have been more robust- haven't provided enough information	INCLUDE
Mansfield	NO Within discussion but not accounted for in study	NO No strategies described	YES	GP coding system and prescription to validate exacerbation	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Chan	NO	YES	YES	Admission rate using hospital	YES	In depth statistical	INCLUDE

	Lack of study subject characteristics limits the ability to decide this but seasonal variation was managed by identifying patterns and adapting the model to reflect this. Statistical analysis reflected differences in time frames and between populations	Strategies described		coding, a weakness may be due to poor clinical coding of AECOPD		analysis and justification for methodology provided	
Kyriakopoulos	UNCLEAR Only factor accounted for was time (using same months in previous years), did not account for other factors in methodology	NO No strategies described	UNCLEAR	Difficult to ascertain	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Huh	UNCLEAR Did not discuss whether there were other code systems or other ways how patients could receive healthcare. But they did identify the limitation which was: the coding system in itself and how they defined COPD was not known	NO No strategies described	YES	It used a database which was the national database and I cant see any reason why information from there would be unreliable and/or invalid	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Helgeland	YES Identified that the analysis is restricted to "somatic" inpatients only and that other types of care may have had different experiences of COVID-19	NO No strategies described	YES	Using national database	YES	In depth statistical analysis and justification for methodology provided	INCLUDE
Stohr	YES Identified that the population studied is relatively homogeneous and therefore, may not be representative of the entire population as well as the time period within the course of the pandemic and the results generated may not be applicable to a different context.	NO No strategies described	YES	Using official records from 9 consecutive hospitals	YES	In depth statistical analysis and justification for methodology provided	INCLUDE

