

Appendix 1**Dialysis and transplant services during the COVID-19 pandemic: a systematic review of impact in a diverse population**

Search topics: Chronic Kidney Disease, Renal Dialysis or Kidney Transplant, Covid-19, Ethnicity

PubMed (searched on 21/12/2022)		
1	"Renal Dialysis"[Mesh]	124,296
2	"Kidney Transplantation"[Mesh]	103,875
3	"Renal Insufficiency, Chronic"[Mesh]	131,366
4	"Renal dialysis"[Title/Abstract]	2,197
5	"Hemodialysis"[Title/Abstract]	70,895
6	"Haemodialysis"[Title/Abstract]	16,509
7	"Peritoneal dialysis"[Title/Abstract]	28,085
8	"Kidney transplant*"[Title/Abstract]	50,486
9	"Renal transplant*"[Title/Abstract]	49,038
10	"Chronic kidney disease*"[Title/Abstract]	69,202
11	"Chronic renal disease*"[Title/Abstract]	4,228
12	"Chronic kidney insufficienc*"[Title/Abstract]	242
13	"Chronic renal insufficienc*"[Title/Abstract]	5,392
14	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13	353,024
15	"COVID-19"[Mesh]	198,152
16	"SARS-CoV-2"[Mesh]	143,474
17	"Covid*"[Title/Abstract]	286,765
18	"Coronavirus*"[Title/Abstract]	120,091
19	#15 OR #16 OR #17 OR #18	328,622
20	"Ethnicity"[Mesh]	104,435
21	"Racial Groups"[Mesh]	102,560
22	"Ethnic and Racial Minorities"[Mesh]	431

23	"Racism"[Mesh]	5,914
24	"ethnic*"[Title/Abstract]	176,478
25	"race*"[Title/Abstract]	169,714
26	"racial"[Title/Abstract]	55,633
27	"BAME"[Title/Abstract]	346
28	"minorit*"[Title/Abstract]	87,981
29	"marginalised"[Title/Abstract]	1,581
30	"marginalized"[Title/Abstract]	6,597
31	#20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30	492,185
32	#14 AND #19 AND #31	198
33	((humans[Filter]) AND (english[Filter]) AND (2019:2022[pdat]))	151

EMBASE Ovid (searched on 21/12/2022)		
1	exp *hemodialysis/	60,156
2	exp *kidney graft/	26,362
3	exp *chronic kidney failure/	59,746
4	"Renal dialysis".ab,ti.	1,674
5	"Hemodialysis".ab,ti.	102,945
6	"Haemodialysis".ab,ti.	23,010
7	"Peritoneal dialysis".ab,ti.	36,979
8	"Kidney transplant*".ab,ti.	81,450
9	"Renal transplant*".ab,ti.	71,528
10	"Chronic kidney disease*".ab,ti.	106,149
11	"Chronic renal disease*".ab,ti.	6,028
12	"Chronic kidney insufficienc*".ab,ti.	187
13	"Chronic renal insufficienc*".ab,ti.	6,502

14	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13	402,190
15	exp *coronavirus disease 2019/	232,512
16	exp *Severe acute respiratory syndrome coronavirus 2/	35,843
17	"Covid*".ab,ti.	305,796
18	"Coronavirus*".ab,ti.	112,760
19	15 or 16 or 17 or 18	357,435
20	exp *ethnicity/	9,898
21	exp *ethnic group/ or exp *minority group/	44,273
22	exp *racial disparity/	1,155
23	exp *racism/	5,573
24	"ethnic*".ab,ti.	242,975
25	"race*".ab,ti.	248,871
26	"racial".ab,ti.	71,833
27	"BAME".ab,ti.	510
28	"minorit*".ab,ti.	114,830
29	"marginalised".ab,ti.	1,914
30	"marginalized".ab,ti.	7,113
31	20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30	568,310
32	14 and 19 and 31	377
33	limit 32 to (human and english language and yr="2019 - 2023" and article)	124

CINAHL (searched on 21/12/2022)		
1	(MM "Renal Insufficiency+") OR (MM "Dialysis Patients") OR (MM "Kidney Failure, Chronic+") OR (MM "Renal Insufficiency, Chronic+")	40,888
2	TI Renal dialysis OR AB Renal dialysis	1,282
3	TI Hemodialysis OR AB Hemodialysis	18,079

4	TI Haemodialysis OR AB Haemodialysis	18,079
5	TI Peritoneal dialysis OR AB Peritoneal dialysis	4,428
6	TI Kidney transplant* OR AB Kidney transplant*	7,710
7	TI Renal transplant* OR AB Renal transplant*	5,873
8	TI Chronic kidney disease* OR AB Chronic kidney disease*	21,486
9	TI Chronic renal disease* OR AB Chronic renal disease*	871
10	TI Chronic kidney insufficienc* OR AB Chronic kidney insufficienc*	15
11	TI Chronic renal insufficienc* OR AB Chronic renal insufficienc*	642
12	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11	72,945
13	(MM "COVID-19+")	31,322
14	(MM "SARS-CoV-2")	733
15	TI Covid* OR AB Covid*	99,840
16	TI Coronavirus* OR AB Coronavirus*	27,718
17	S13 OR S14 OR S15 OR S16	109,701
18	(MM "Ethnic Groups+") OR (MM "Minority Groups") OR (MM "Intersectionality")	89,036
19	(MM "Racism+")	5,943
20	TI ethnic* OR AB ethnic*	76,894
21	TI race* OR AB race*	59,297
22	TI racial OR AB racial	29,893
23	TI BAME OR AB BAME	225
24	TI minorit* OR AB minorit*	39,487
25	TI marginalised OR AB marginalised	1,321
26	TI marginalized OR AB marginalized	4,147
27	S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26	212,082
28	S12 AND S17 AND S27	52
29	English, articles	48

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	3
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	3
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Table 1, page 18
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	4
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	4, Appendix 1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	4
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	4-5
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	5
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	5, Figure 1
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	4-5
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	5
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	4-5
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	4-5, Figure 1
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	5, Table 2
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	-
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	-
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	5
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	5
Certainty	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	4-5

assessment		
RESULTS		
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.
Study characteristics	17	Cite each included study and present its characteristics.
Risk of bias in studies	18	Present assessments of risk of bias for each included study.
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.
	20c	Present results of all investigations of possible causes of heterogeneity among study results.
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.
DISCUSSION		
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.
	23b	Discuss any limitations of the evidence included in the review.
	23c	Discuss any limitations of the review processes used.
	23d	Discuss implications of the results for practice, policy, and future research.
OTHER INFORMATION		
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.
	24c	Describe and explain any amendments to information provided at registration or in the protocol.
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.
Competing interests	26	Declare any competing interests of review authors.
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.

PRISMA 2020 Checklist

From: Page MJ, Mckenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71