Supplementary Materials

Contents

Supplementary S1: Search strategy

1. "Continental Population Groups"[Mesh]

2. "Ethnic Groups"[Mesh]

3. "Ethnicity"[Mesh]

4. "Racial Groups"[Mesh]

5. "Race Factors"[Mesh]

6. "Asians"[Mesh]

7. "Whites"[Mesh]

8. "Native Hawaiian or Other Pacific Islander"[Mesh]

9. "Blacks"[Mesh]

10. "Hispanic or Latino"[Mesh]

11. "Minority Groups"[Mesh]

12. (race* OR racial OR ethnic* OR white* OR black* OR asian* OR native* OR indigenous* OR hispanic* OR latin* OR minorit*) [tiab]

13. OR/1-12

14. "Gender Equity"[Mesh]

15. "Sex"[Mesh]

16. "Sexual and Gender Minorities"[Mesh]

17. (gender OR sex*) [tiab]

18. OR/15-17

19. "Socioeconomic Factors"[Mesh]

20. "Poverty"[Mesh]

21. "Income"[Mesh]

22. "Education"[Mesh]

23. "Educational Status"[Mesh]

24. "Unemployment"[Mesh]

25. (social* OR economic* OR socioeconomic OR socio-economic OR income OR education* OR occupation* OR employ* OR unemploy* OR poverty OR poor) [tiab]

26. OR/19-25

27. 13 OR 18 OR 26

28. "Health Disparity, Minority and Vulnerable Populations"[Mesh]

29. "Healthcare Disparities"[Mesh]

30. (disparit* OR inequit* OR inequality* OR discrepan* OR inconsisten*) [tiab]

31. OR/28-30

32. "Kidney Failure, Chronic"[Mesh]

33. "Renal Dialysis"[Mesh]

34. "Kidney Transplantation"[Mesh]

35. (“end-stage renal disease” OR “end-stage kidney disease” OR dialysis OR hemodialysis OR “peritoneal dialysis” OR “kidney transplant*” OR “renal transplant*” OR “arteriovenous fistula” OR “AV fistula” OR “arteriovenous graft” OR “AV graft”) [tiab]

36. OR/32-35

37. 27 AND 31 AND 36

PubMed search

("Continental Population Groups"[Mesh] OR "Ethnic Groups"[Mesh] OR "Ethnicity"[Mesh] OR "Racial Groups"[Mesh] OR "Race Factors"[Mesh] OR "Asians"[Mesh] OR "Whites"[Mesh] "Native Hawaiian or Other Pacific Islander"[Mesh] OR "Blacks"[Mesh] OR "Blacks"[Mesh] OR "Hispanic or Latino"[Mesh] OR (race* OR racial OR ethnic* OR white* OR black* OR asian* OR native* OR indigenous* OR hispanic* OR latin* OR minorit*) [tiab]) OR ("Gender Equity"[Mesh] OR "Sex"[Mesh] OR "Sexual and Gender Minorities"[Mesh] OR(gender OR sex*) [tiab]) OR ("Socioeconomic Factors"[Mesh] OR"Poverty"[Mesh] OR "Income"[Mesh] OR "Education"[Mesh] OR "Educational Status"[Mesh] OR "Unemployment"[Mesh] OR (social* OR economic* OR socioeconomic OR socio-economic OR income OR education* OR occupation* OR employ* OR unemploy* OR poverty OR poor) [tiab]) AND ("Health Disparity, Minority and Vulnerable Populations"[Mesh] OR "Healthcare Disparities"[Mesh] OR (disparit* OR inequit* OR inequality* OR discrepan* OR inconsisten*) [tiab]) AND ("Kidney Failure, Chronic"[Mesh] OR "Renal Dialysis"[Mesh] OR "Kidney Transplantation"[Mesh] OR (“end-stage renal disease” OR “end-stage kidney disease” OR dialysis OR hemodialysis OR “peritoneal dialysis” OR “kidney transplant*” OR “renal transplant*” OR “arteriovenous fistula” OR “AV fistula” OR “arteriovenous graft” OR “AV graft”) [tiab])

Result (20 Feb 2022): 3,315 records

Scopus search

(race* OR racial OR ethnic* OR white* OR black* OR asian* OR native* OR indigenous* OR hispanic* OR latin* OR minorit* OR gender OR sex OR social* OR economic* OR socioeconomic OR socio-economic OR income OR education* OR occupation* OR employ* OR unemploy* OR poverty OR poor) AND (disparit* OR inequit* OR inequality* OR discrepan* OR inconsisten*) AND (“end-stage renal disease” OR “end-stage kidney disease” OR dialysis OR hemodialysis OR “peritoneal dialysis” OR “kidney transplant*” OR “renal transplant*” OR “arteriovenous fistula” OR “AV fistula” OR “arteriovenous graft” OR “AV graft”)

Result (20 Feb 2022): 2,416 records

Web of Science search

(race* OR racial OR ethnic* OR white* OR black* OR asian* OR native* OR indigenous* OR hispanic* OR latin* OR minorit* OR gender OR sex OR social* OR economic* OR socioeconomic OR socio-economic OR income OR education* OR occupation* OR employ* OR unemploy* OR poverty OR poor) AND (disparit* OR inequit* OR inequality* OR discrepan* OR inconsisten*) AND (“end-stage renal disease” OR “end-stage kidney disease” OR dialysis OR hemodialysis OR “peritoneal dialysis” OR “kidney transplant*” OR “renal transplant*” OR “arteriovenous fistula” OR “AV fistula” OR “arteriovenous graft” OR “AV graft”)

Result (20 Feb 2022): 2,657 records

CENTRAL search

(race* OR racial OR ethnic* OR white* OR black* OR asian* OR native* OR indigenous* OR hispanic* OR latin* OR minorit* OR gender OR sex OR social* OR economic* OR socioeconomic OR socio-economic OR income OR education* OR occupation* OR employ* OR unemploy* OR poverty OR poor) AND (disparit* OR inequit* OR inequality* OR discrepan* OR inconsisten*) AND ("end-stage renal disease" OR "end-stage kidney disease" OR dialysis OR hemodialysis OR "peritoneal dialysis" OR "kidney transplant*" OR "renal transplant*" OR "arteriovenous fistula" OR "AV fistula" OR "arteriovenous graft" OR "AV graft")

Result (20 Feb 2022): 100 records

Supplementary S2: Excluded studies

Suppl. Table S1. List of excluded studies with reasons

Study	Reason for exclusion
2021; Garcia-Garcia	Descriptive study
2021; van Amstel	Different exposure
2021; Wong	No outcome of interest
2021; Ku	Different exposure
2021; Seipp	No outcome of interest
2021; Davidovits	Different exposure
2021; Anand	No outcome of interest
2021; Plumb	Pediatric population
2020; Grossi	Evaluation of immigration
2020; Dunlop	No outcome of interest
2020; Golestaneh	No outcome of interest
2020; Weigert	No outcome of interest
2020; Nguyen	Different exposure
2020; Williams	Overlapping populations
2020; Bailey	No outcome of interest
2020; Patzer	Different exposure
2020; Ku	Descriptive study
2020; Riad	Pediatric population
2020; Bonthuis	Pediatric population
2020; Amaral	Pediatric population
2019; Godara	No outcome of interest
2019; Mıhçıokur	No outcome of interest
2019; Mustian	Different exposure
2019; Pletcher	Different exposure
2019; Schouten	Evaluation of immigration
2019; Shah	Descriptive study
2019; Hamoda	No outcome of interest
2019; Vedadi	No outcome of interest
2019;Yan	Different exposure
2019; Lee	Overlapping populations
2019; Arvelakis	No outcome of interest
2019; Kim	No outcome of interest
2019; Ahearn	Pediatric population
2018; Markell	Overlapping populations
2018; Wilkins	No outcome of interest
2018; Khanal	Overlapping populations
2018; Gillis	Different exposure
2018; Gander	Overlapping populations

2018; Matter	No outcome of interest
2018; Miller	Different exposure
2017; Derrett	No outcome of interest
2017; Woo	No outcome of interest
2017; Laster	Overlapping populations
2017; Pecoits-Filho	Overlapping populations
2017; Kwan	No outcome of interest
2017; Tahir	No outcome of interest
2017; Wu	Different exposure
2017; Taber	Overlapping populations
2017; Ku	Pediatric population
2016; Nogueira	Different exposure
2016; Peracha	No outcome of interest
2016; Taber	No outcome of interest
2016; Ng	No outcome of interest
2016; Tjaden	Pediatric population
2016; Hogan	Pediatric population
2015; Zarkowsky	Overlapping populations
2015; Vogelzang	No outcome of interest
2015; Tang	No outcome of interest
2015; Patzer	No outcome of interest
2015; Saunders	Different exposure
2015; Monson	No outcome of interest
2015; Patzer	Pediatric population
2015; Francis	Pediatric population
2014; Vavallo	Different exposure
2014; Rhee	Overlapping populations
2014; Goldfarb-Rumyantzev	Overlapping populations
2014; Siracuse	Overlapping populations
2014; Hogan	No outcome of interest
2014[a]; Grace	Pediatric population
2014[b]; Grace	Pediatric population
2013; Fissell	No outcome of interest
2013; Prakash	No outcome of interest
2013; Gill	Overlapping populations
2013; Grams	Overlapping populations
2013; Joshi	No outcome of interest
2013; Andreoni	Different exposure
2013; Mitsnefes	Pediatric population
2013; Patzer	Pediatric population
2012; Liu	No outcome of interest
2012; Schaefer	Different exposure
2012; Arce	Overlapping populations

2012; Johansen	Overlapping populations
2012; Hall	Overlapping populations
2012; Myaskovsky	No outcome of interest
2012; Molnar	Different exposure
2012; Goldfarb-Rumyantzev	Overlapping populations
2012; Kutner	No outcome of interest
2012; Amaral	Overlapping populations
2012; Shatat	Pediatric population
2012; Patzer	Pediatric population
2011; Kucirka	Overlapping populations
2011[a]; Schold	No outcome of interest
2011[b]; Schold	Overlapping populations
2011; Nguyen	Pediatric population
2010; Kalantar-Zadeh	Different exposure
2010; Walker	No outcome of interest
2010; Fan	Overlapping populations
2009; Frankenfield	Different exposure
2009; Gore	Overlapping populations
2009; Segev	Different exposure
2009; Dudley	Different exposure
2009; Chavers	Pediatric population
2008; van den Beukel	Evaluation of immigration
2008; Naghibi	No outcome of interest
2008; Peterson	No outcome of interest
2008; Keith	Overlapping populations
2005; Murthy	Overlapping populations
2005; Hall	Different exposure
2004; Prasad	No outcome of interest
2003; Drukker	No outcome of interest
2003; Frankenfield	Overlapping populations
2002; Pisoni	No outcome of interest
2000; Epstein	No outcome of interest
1999; Korbet	No outcome of interest
1999; Isaacs	No outcome of interest
1997; Bloembergen	No outcome of interest
1996; Bloembergen	No outcome of interest
1995; Nee	Overlapping populations
1990; Port	No outcome of interest

Excluded studies

1. Ahearn P, Johansen KL, Tan JC, McCulloch CE, Grimes BA, Ku E. Sex Disparity in Deceased-Donor Kidney Transplant Access by Cause of Kidney Disease. Clin J Am Soc Nephrol [Internet]. 2021 Feb 8 [cited 2022 May 29];16(2):241–50. Available from: https://pubmed.ncbi.nlm.nih.gov/33500250/

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Supplementary S3: Study characteristics

Suppl. Table S2. Methodological characteristics of the included studies

Study	Country	Design	Data source	Sample size	Time period	Population	Male sex (%)	Peritoneal dialysis (%)	Diabetes mellitus (%)
2021; Qian	USA	Retrospective cohort	USRDS	14,077	2010-2012	Hemodialysis, start with CVC, age ≥67 years	53	0	65
2021; MacRae	Canada	Prospective cohort	5 Canadian dialysis programs	2,375	2004-2012	Hemodialysis	60.9	0	56.1
2021; Pisoni	International	Prospective cohort	DOPPS study	2,040	2009-2015	Hemodialysis	60.8	0	60
2021; Schellartz	Germany	Retrospective cohort	Health insurance data	4,727	2012-2016	Hemodialysis/ Peritoneal dialysis	58	3.7	N/A
2021; Barth	Hungary	Retrospective cohort	Study data	254	2020	ESKD, age ≤75 years	65	11	20
2021; Wesselman	USA	Prospective cohort	Study data	1,056	2010-2012	ESKD	62	10	N/A
2021; Cirillo	Italy	Retrospective cohort	Campania province data	11,716	2014-2018	ESKD	61.5	1.4	N/A
2021; Ahearn	USA	Retrospective cohort	USRDS	1,478,037	2005-2017	ESKD	57	N/A	33.4
2021; Rita	Switzerland	Prospective cohort	Swiss Transplant Cohort Study	1,985	2008-2017	Living/deceased-donor transplantation	64	-	N/A
2021; Wiley	USA	Retrospective cohort	Study data	623	2000-2018	Living/deceased-donor transplantation	60	-	33
2021; Belyaev	New Zealand	Retrospective cohort	ANZDATA	837	2008-2018	Living/deceased-donor transplantation	63.3	-	35.2
2021; Park	South Korea	Retrospective cohort	Health insurance data	12,564	2007-2015	ESKD, age ≤70 years	59.1	15.6	33.9
2020; Arya	USA	Retrospective cohort	USRDS	74,194	2010-2013	Hemodialysis, start with CVC, age ≥66 years	53	0	49
2020; Arhuidese	USA	Retrospective cohort	USRDS	359,942	2007-2014	Hemodialysis	57.2	0	54
2020; Copeland	USA	Retrospective cohort	Optum Clinformatics Data Mart	7,584	2012-2016	Hemodialysis, start with CVC	57	0	83
2020; Krishnasamy	Australia	Retrospective cohort	ANZDATA	11,844	2002-2012	Hemodialysis	62.2	0	31.2

2020; Yolgosteren	Turkey	Retrospective cohort	Study data	349	2008	Hemodialysis, start with AVF	57.5	0	34.8
2020; Ku	USA	Prospective cohort	CRIC study	678	2003-2013	Hemodialysis/ Peritoneal dialysis	60.6	13.9	70.4
2020; Hayat	New Zealand	Prospective cohort	New Zealand Peritoneal Dialysis Registry	6,379	1995-2014	Peritoneal dialysis	54.7	100	47.5
2020; Vogel	USA	Retrospective cohort	USRDS	1,324,037	2000-2014	Hemodialysis/ Peritoneal dialysis	56.1	7.7	47.8
2020; Shen	USA	Retrospective cohort	USRDS	523,526	2005-2013	Hemodialysis/ Peritoneal dialysis/ Home dialysis	57.6	8	45.6
2020; Melk	Germany	Retrospective cohort	Health insurance data	8,921	2005-2013	ESKD	55.9	N/A	50.9
2020; Park	South Korea	Retrospective cohort	Health insurance data	12,889	2007-2015	ESKD, age ≤70 years	59.1	10.4	55.9
2020; Pruthi	United Kingdom	Prospective cohort	ATTOM study	2,676	2011-2013	ESKD, age ≤75 years	64	N/A	40
2020; Murphy	USA	Prospective cohort	Scientific Registry of Transplant Recipients	3,013	2009-2018	ESKD	61	11	40
2020; Ng	USA	Prospective cohort	Study data	1,055	2010-2018	ESKD	61.4	N/A	N/A
2019; Nee	USA	Retrospective cohort	USRDS	56,194	2007-2014	Hemodialysis/ Peritoneal dialysis	49.5	0.5	63.3
2019; Howson	Australia	Retrospective cohort	ANZDATA	616	2000-2010	Living/deceased-donor transplantation	62.8	-	15.1
2019; King	USA	Prospective cohort	Scientific Registry of Transplant Recipients	157,073	2000-2018	Living/deceased-donor transplantation	60.6	-	28.1
2019; Myaskovsky	USA	Prospective cohort	Veterans Affairs Kidney Transplant	611	2010-2012	ESKD	96.9	10.3	N/A
2019; Ke	Canada	Retrospective cohort	Health insurance data	396,593	1997-2011	ESKD	47.9	N/A	100
2019; Naylor	Canada	Retrospective cohort	CORR	4,414	2004-2014	Living/deceased-donor transplantation	63.5	28	32.8
2018; Shah	USA	Retrospective cohort	USRDS	885,699	2004-2014	Hemodialysis	56.3	0	57
2018; Huria	New Zealand	Retrospective cohort	ANZDATA	4,781	2002-2011	Hemodialysis/ Peritoneal dialysis/ Living/deceased-donor transplantation	59.7	32	45

2018; Lin	USA	Retrospective cohort	USRDS	5,295	2010-2013	Hemodialysis	53.6	0	60.2
2018; Krishnasamy	Australia	Retrospective cohort	ANZDATA	20,810	2004-2013	Hemodialysis/ Peritoneal dialysis	62.5	31.5	42.1
2018; Keddis	USA	Retrospective cohort	Study data	600	2012-2016	ESKD	59.2	16.9	60.2
2018; Williams	United Kingdom	Retrospective cohort	Study data	1,066	2007-2017	Living/deceased-donor transplantation	59.8	-	N/A
2018; Sypek	Australia	Retrospective cohort	ANZDATA	21,213	2006-2015	ESKD	61.8	N/A	35.1
2018; Liu	USA	Retrospective cohort	Study data	483	2006-2012	Living/deceased-donor transplantation	61.2	-	31.4
2018; Chatelet	France	Retrospective cohort	Cristal database	8,701	2010-2014	Living/deceased-donor transplantation	63.8	10.6	16.8
2018[a]; Zhang	USA	Retrospective cohort	USRDS	1,253,100	2005-2015	ESKD	56.9	N/A	52.5
2018[b]; Zhang	Sweden	Retrospective cohort	Swedish Renal Register	13,982	1995-2013	ESKD	65.6	N/A	33.2
2018; Peng	USA	Retrospective cohort	USRDS	3,775	2005-2009	ESKD	55.7	N/A	47.9
2018; Purnell	USA	Retrospective cohort	Scientific Registry of Transplant Recipients	453,162	1995-2014	ESKD	61	N/A	N/A
2017; Trivedi	USA	Retrospective cohort	Medicare Limited Data Set	2,693	2009	Hemodialysis, start with AVF/AVG	56	0	N/A
2017; McGill	USA	Retrospective cohort	USRDS	18,883	2010-2011	Hemodialysis, start with CVC, age ≥67 years	51.8	0	45.6
2017; McKercher	Australia	Retrospective cohort	ANZDATA	21,832	2001-2013	Hemodialysis	59.9	0	37.7
2017; Pisoni	International	Prospective cohort	DOPPS study	4,692	1996-2015	Hemodialysis	61	0	52.4
2017; Wilmink	United Kingdom	Retrospective cohort	PROTON	500	2003-2011	Hemodialysis	N/A	0	N/A
2017; Gulcan	Turkey	Retrospective cohort	Study data	322	2000-2012	Peritoneal dialysis	48.4	100	N/A
2017; Kim	South Korea	Retrospective cohort	Seoul National University Hospital registry	655	2000-2012	Peritoneal dialysis	60.9	100	35.6
2017; Chan	Australia	Retrospective cohort	ANZDATA	9,766	1994-2013	Peritoneal dialysis	57	100	29
2017; Wallace	USA	Retrospective cohort	Centers for Medicare/ Medicaid Services	369,164	2012	Hemodialysis/ Peritoneal dialysis	N/A	N/A	N/A

2017; Trinh	Canada	Retrospective cohort	CORR	61,237	1996-2012	Hemodialysis/ Peritoneal dialysis	59	15	24
2017; Imanishi	Japan	Prospective cohort	DOPPS	7,974	1999-2011	Hemodialysis	62	100	31
2017; Gill	USA	Retrospective cohort	Scientific Registry of Transplant Recipients	77,607	2006-2016	Living/deceased-donor transplantation	61.9	-	23.3
2017; Zhang	Sweden	Retrospective cohort	Swedish Renal Register	16,215	1995-2013	Hemodialysis/ Peritoneal dialysis	65.4	N/A	31.3
2017; Choi	South Korea	Retrospective cohort	Korean National Health Insurance Cohort Data	1,792	2002-2013	Hemodialysis/ Peritoneal dialysis	56.8	87.4	53.5
2017; Taber	USA	Retrospective cohort	USRDS, Veteran Affairs	4,918	2001-2007	Living/deceased-donor transplantation	97.6	-	38.1
2016; Tamayo Isla	South Africa	Retrospective cohort	PKDC	340	2007-2014	Hemodialysis/ Peritoneal dialysis	52.1	42.9	10.3
2016; Liu	China	Retrospective cohort	Study data	1,778	2006-2013	Peritoneal dialysis	59.5	100	25.3
2016; Shabankhani	Iran	Retrospective cohort	Study data	500	2007-2013	Hemodialysis	53.6	100	46.2
2016; Mucsi	Canada	Retrospective cohort	Study data	1,769	2003-2012	ESKD	60	N/A	38
2016; Kihal-Talantikite	France	Retrospective cohort	REIN registry	2,006	2004-2009	Hemodialysis/ Peritoneal dialysis	60.6	12.5	26
2016; Molmenti	USA	Retrospective cohort	United Network for Organ Sharing	88,284	1999-2006	Living/deceased-donor transplantation	60.2	-	28.6
2015; Nee	USA	Retrospective cohort	USRDS	669,206	2007-2012	Hemodialysis	46.7	0	50.4
2015; Lawton	Australia	Retrospective cohort	ANZDATA	15,984	1995-2004	Hemodialysis/ Peritoneal dialysis	58.3	25.2	27.7
2015; van den Beukel	Denmark	Retrospective cohort	Danish Nephrology Registry	9,170	1995-2010	Hemodialysis/ Peritoneal dialysis	63.6	30.8	23.4
2015; Park	South Korea	Prospective cohort	26 centers	946	2009-2013	Hemodialysis	61.4	0	58.1
2015; Wang	China	Prospective cohort	Study data	564	2008-2011	Continuous ambulatory peritoneal dialysis, age <80 years	52.8	100	13.5
2015; Ward	Ireland	Prospective cohort	Study data	1,794	1990-2009	Hemodialysis	61.2	100	11.9
2015; Ilori	USA	Retrospective cohort	United Network for Organ Sharing	44,013	1996-2010	Living/deceased-donor transplantation, age ≥60 years	62.5	-	33.7

2015; Matsuoka	USA	Retrospective cohort	Study data	720	2004-2013	Living/deceased-donor transplantation	63.3	-	27.2
2015; Ward	Ireland	Retrospective cohort	Irish national transplantation center	1,944	1990-2009	Living/deceased-donor transplantation	62.6	-	N/A
2015; Arce	USA	Retrospective cohort	USRDS	105,520	1996-2010	ESKD	62.2	17.4	36
2014; Goldfarb-Rumyantzev	USA	Retrospective cohort	USRDS	109,390	2005-2008	Hemodialysis	53.1	0	40.2
2014; Cole	United Kingdom	Retrospective cohort	Renalware	1,340	1996-2008	Hemodialysis/ Peritoneal dialysis	61	1.6	28.4
2014; Burrows	USA	Retrospective cohort	USRDS	510,666	1995-2009	Hemodialysis	51.2	0	100
2014; Prasad	India	Prospective cohort	Study data	328	2005-2009	Peritoneal dialysis, age <75 years	73.8	100	53.7
2014; Grace	Australia	Retrospective cohort	ANZDATA	23,281	2000-2011	Hemodialysis/ Peritoneal dialysis	61.7	47.7	38.4
2014; Kim	South Korea	Prospective cohort	Study data	495	2009	Peritoneal dialysis	61.4	100	55.2
2014; Yang	China	Retrospective cohort	SSOP study	2,264	2011	Peritoneal dialysis	49.9	100	38.8
2014; de Moraes	Brazil	Prospective cohort	Study data	3,311	2004-2011	Peritoneal dialysis	47	100	41
2014; Teixeira	Brazil	Retrospective cohort	Study data	162	2007-2011	Hemodialysis	55.6	100	33.3
2013; Yan	USA	Retrospective cohort	USRDS	1,282,201	1995-2009	Hemodialysis/ Peritoneal dialysis	54.6	N/A	49.7
2013; Chang	South Korea	Prospective cohort	Study data	441	2000-2005	Peritoneal dialysis	54.4	100	51.5
2013; Ros	Sweden	Retrospective cohort	Andalusian SICATA Registry	1,458	1999-2010	Peritoneal dialysis	57.1	100	19.4
2013; Fernades	Brazil	Prospective cohort	BRAZPD	2,159	2004-2007	Peritoneal dialysis	36.3	100	34.1
2013; Kimmel	USA	Retrospective cohort	USRDS	589,036	2000-2008	Hemodialysis	54.9	0	55.2
2013; Arce	USA	Retrospective cohort	USRDS	417,801	1995-2007	ESKD age ≤75 years	56.9	10.4	55.9
2013; Purnell	USA	Retrospective cohort	USRDS, United Network for Organ Sharing	208,736	2005-2008	ESKD, age ≤70 years	57	N/A	55.8
2013; Waterman	USA	Prospective cohort	Study data	695	2004-2007	ESKD	58.7	N/A	30.6

2013; Promislow	Canada	Retrospective cohort	CORR	30,688	2000-2009	ESKD	59.4	21.5	36.8
2012; Sood	Canada	Retrospective cohort	CORR	31,576	2000-2009	Hemodialysis/ Peritoneal dialysis	60.7	23.9	45.7
2012; Woo	USA	Retrospective cohort	Southern California Permanente Medical Group Renal Database	5,821	2000-2008	Hemodialysis	59	0	61
2012; van den Beukel	Netherlands	Prospective cohort	NECOSAD-II	1,944	1997-2007	Hemodialysis/ Peritoneal dialysis	62.5	40	14.2
2012; Marinovich	Argentina	Retrospective cohort	National Registry of Chronic Dialysis	13,466	2004-2008	Hemodialysis	57.2	0	35.9
2012; Xu	China	Retrospective cohort	Study data	2,171	2011	Peritoneal dialysis	49.5	100	37.6
2012; Huang	Taiwan	Prospective cohort	Study data	935	2008	Hemodialysis	50.6	100	15.1
2012; Lockridge	Sweden	Prospective cohort	Study data	191	1996-2009	Home dialysis	62.3	100	22.5
2012; Neri	Italy	Retrospective cohort	MigliorDialisi dataset	1,238	2008-2011	ESKD	63.6	0	N/A
2012; Couchoud	France	Retrospective cohort	REIN registry	14,883	2002-2009	ESKD, age <75 years	63.8	N/A	37.4
2012; Goldfarb-Rumyantzev	USA	Retrospective cohort	USRDS, United Network for Organ Sharing	79,223	1990-2007	Living/deceased-donor transplantation	61.4	-	31
2012; Udayaraj	United Kingdom	Retrospective cohort	UK Renal Registry	12,282	1997-2004	Hemodialysis/ Peritoneal dialysis, age <70 years	60.6	N/A	N/A
2012; Patzer	USA	Retrospective cohort	USRDS, United Network for Organ Sharing	2,291	2005-2007	ESKD	57.3	N/A	38.4
2012; Garg	USA	Retrospective cohort	Organ Transplant Tracking Record	533	2001-2009	Living/deceased-donor transplantation	58.9	-	52.2
2011; Lopez-Vargas	Australia/New Zealand	Prospective cohort	9 centers	3,099	2008	Hemodialysis	64	0	45
2011; Carrero	9 European countries	Retrospective cohort	ERA-EDTA	108,963	1994-2004	Hemodialysis/ Peritoneal dialysis	60.9	17.7	20.9
2011; Chidambaram	Canada	Retrospective cohort	Ontario Health Insurance Plan	5,162	1995-2005	Peritoneal dialysis	56.2	100	52.5
2011; Bastos	Brazil	Prospective cohort	BRAZPD	1,952	2004-2007	Peritoneal dialysis	46	100	41
2011; Machado	Brazil	Prospective cohort	National Database for Renal Replacement Therapy	14,111	2000-2004	Hemodialysis/ Peritoneal dialysis	57.1	11.1	17.5
2011; Hall	USA	Retrospective cohort	USRDS	503,090	1995-2006	Hemodialysis/ Peritoneal dialysis, age <65 years	53.4	N/A	51.9

2010; Chung	South Korea	Retrospective cohort	Study data	213	1994-2005	Peritoneal dialysis	55.9	100	55.4
2010; Huang	Taiwan	Retrospective cohort	Study data	200	2001-2007	Hemodialysis/ Peritoneal dialysis	53	51	N/A
2010; Sood	Canada	Prospective cohort	Manitoba Renal Program	727	1997-2007	Peritoneal dialysis	55.3	100	44.6
2010; Sandhu	USA	Retrospective cohort	USRDS	3,396	1990-1999	ESKD	54.2	N/A	50.4
2010; Udayaraj	United Kingdom	Retrospective cohort	UK Renal Registry	11,299	1997-2004	Hemodialysis/ Peritoneal dialysis, age <70 years	61.3	N/A	N/A
2010; Ng	United Kingdom	Prospective cohort	Study data	555	1995-2006	Living/deceased-donor transplantation	53.4	-	N/A
2010; Ravanan	United Kingdom	Prospective cohort	UK Renal Registry	7,863	2003-2005	Hemodialysis/ Peritoneal dialysis	60.4	N/A	22.3
2009; Roderick	United Kingdom	Prospective cohort	UK Renal Registry	30,561	1997-2006	Hemodialysis/ Peritoneal dialysis	62	25.8	18.3
2009; de Mutsert	Netherlands	Prospective cohort	NECOSAD-II	700	1997-2007	Hemodialysis/ Peritoneal dialysis	60.5	35.1	15
2009; Eisenstein	USA	Retrospective cohort	USRDS	186,424	1996-1999	Hemodialysis	52.4	100	42.2
2009; Yeates	USA/ United Kingdom/ Australia/ New Zealand	Retrospective cohort	USRDS, CORR, ANZDATA	312,507	1995-2005	Hemodialysis/ Peritoneal dialysis	57.6	N/A	N/A
2009; Feyssa	USA	Retrospective cohort	Study data	2,130	1995-2003	Living/deceased-donor transplantation	60.8	-	38.8
2009; Patzer	USA	Retrospective cohort	United Network for Organ Sharing	35,346	1998-2002	Hemodialysis	50.1	0	44.5
2008; Wolf	USA	Prospective cohort	ArMORR study	9,303	2004-2005	Hemodialysis	54.7	0	42.7
2008; Sanabria	Colombia	Retrospective cohort	Dialysis outcomes in Colombia study	923	2001-2003	Hemodialysis/ Peritoneal dialysis	56.9	47.3	40.8
2008; Hall	USA	Retrospective cohort	USRDS	22,152	1995-2003	Hemodialysis/ Peritoneal dialysis	54.6	9.4	41.6
2008; Schaeffner	USA	Prospective cohort	Dialysis Morbidity and Mortality Study Wave 2	3,245	1996-1997	Hemodialysis/ Peritoneal dialysis	53.3	N/A	49.7
2007; Gill	USA	Retrospective cohort	USRDS	509,391	1995-2004	ESKD, age ≤70 years	54.7	N/A	48.1
2006; Robinson	USA	Prospective cohort	DOPPS study	6,677	1996-2001	Hemodialysis	54.6	0	40.4

2006; Caskey	United Kingdom	Retrospective cohort	UK Renal Registry	10,392	1997-2004	Hemodialysis/ Peritoneal dialysis	62.1	34.8	17.3
2006; Hemmelgarn	Canada	Retrospective cohort	CORR	10,338	1990-2000	Hemodialysis/ Peritoneal dialysis	60.4	29.3	6.9
2006; Bayat	France	Retrospective cohort	CRISTAL Registry	1,495	1997-2003	ESKD	58.6	15.8	34.1
2005; Chung	South Korea, Sweden	Retrospective cohort	Study data	238	1994-2000	Peritoneal dialysis	57	100	49
2005; Mircescu	Romania	Retrospective cohort	Study data	412	1989-2003	Peritoneal dialysis	50.2	100	22.6
2005; Kutner	USA	Retrospective cohort	DMMS Wave 2	868	1993-1994	Hemodialysis/ Peritoneal dialysis	52.8	47.6	44.3
2005; Press	USA	Retrospective cohort	United Network for Organ Sharing	4,471	1990	Living/deceased-donor transplantation	58.9	-	21.2
2005; Pallet	France	Retrospective cohort	Donnees Informatisees VAlidees En Transplantation	1,092	1987-2003	Living/deceased-donor transplantation	59.2	-	N/A
2005; Chakkera	USA	Retrospective cohort	Veterans Affairs Kidney Transplant, USRDS	79,361	1991-2001	Living/deceased-donor transplantation	60.3	-	33.8
2004; Prasad	United Kingdom	Prospective cohort	Study data	474	1996-2001	Hemodialysis/ Peritoneal dialysis	61.9	9.1	32.7
2004; Jager	Netherlands	Prospective cohort	NECOSAD study	1,347	1997-2001	Hemodialysis/ Peritoneal dialysis	61	34.6	15
2004; Yeates	Canada	Retrospective cohort	CORR	25,632	1990-1998	Hemodialysis/ Peritoneal dialysis	59.6	N/A	29.1
2004; Sequist	USA	Retrospective cohort	Intermountain ESRD Network #15	1,335	1994-1995	Hemodialysis/ Peritoneal dialysis	52.1	21	54.5
2004; Villar	France	Retrospective cohort	Study data	549	1995-1998	ESKD	63.2	20.2	31.9
2003; Wang	Canada	Retrospective cohort	Study data	116	1996-1999	Peritoneal dialysis	64.7	100	36.2
2003; Cass	Australia	Retrospective cohort	ANZDATA	5,322	1993-1998	Hemodialysis/ Peritoneal dialysis, age <65 years	56.7	N/A	22.1
2003; Oniscu	Scotland	Prospective cohort	Scottish Renal Registry	4,523	1989-1999	Hemodialysis/ Peritoneal dialysis	58.3	29.6	16.3
2002; Reddan	USA	Retrospective cohort	ESRD Core Indicators/ CPM Project	8,154	1999	Hemodialysis	53	0	40
2002; Pisoni	International	Prospective cohort	DOPPS study	2,073	1996-2000	Hemodialysis	55	0	36
2002; Iseki	Japan	Prospective cohort	Okinawa Dialysis Study	1,243	1991-2001	Hemodialysis	58.3	0	17.8

2002; Stack	USA	Retrospective cohort	USRDS	3,793	1996-1997	Hemodialysis/ Peritoneal dialysis	53	48.4	43
2001; Winkelmayer	USA	Retrospective cohort	New Jersey Medicare/Medicaid claims	3,014	1990-1996	Hemodialysis/ Peritoneal dialysis	56.2	22.2	29
2000; Stehman-Breen	USA	Prospective cohort	USRDS	1,449	1993-1994	Hemodialysis	53	0	51
2000; Allon	USA	Prospective cohort	HEMO study	1,824	1995-1999	Hemodialysis, age <80 years	48.6	0	43.6
2000; Schaubel	Canada	Retrospective cohort	CORR	33,589	1981-1996	Hemodialysis/ Peritoneal dialysis	59.9	35.2	23.8
2000; Garg	USA	Prospective cohort	United Network for Organ Sharing	7,594	1986-1993	ESKD	51.6	N/A	34.8
1999; Chandna	United Kingdom	Retrospective cohort	Study data	292	1992-1996	Hemodialysis/ Peritoneal dialysis	66	N/A	20
1996; Bleyer	USA	Retrospective cohort	Study data	550	1990-1993	Hemodialysis/ Peritoneal dialysis	N/A	21.8	44.2
1996; Medina	USA	Prospective cohort	32 centers	584	1988-1991	Hemodialysis, diabetic nephropathy	42.1	0	100
1995; Barker-Cummings	USA	Retrospective cohort	ESRD Network	10,726	1989-1991	Hemodialysis/ Peritoneal dialysis	49.6	21.8	32.9
1994; Cowie	USA	Retrospective cohort	Michigan Kidney Registry	594	1974-1983	Hemodialysis, age <65 years, diabetic nephropathy	54.4	0	100
1994; Puqh	USA	Retrospective cohort	Texas Kidney Health Program	11,978	1975-1985	Hemodialysis/ Peritoneal dialysis, age ≥20 years	N/A	6.1	27.2
1992; Soucie	USA	Prospective cohort	Study data	8,315	1989-1990	Hemodialysis	47	0	19.6

N/A: not applicable; ESKD: end-stage kidney disease; USRDS: United States Renal Data System; CORR: Canadian Organ Replacement Register; ANZDATA: Australia and New Zealand Dialysis and Transplant Register; BRAZPD: Brazilian Peritoneal Dialysis Multicenter Study; DMMS: Dialysis Morbidity and Mortality Study; DOPPS: Dialysis Outcomes and Practice Patterns Study; REIN: Renal Epidemiology and Information Network; SSOP: Socioeconomic Status on the Outcome of Peritoneal Dialysis; PKDC: Polokwane Kidney and Dialysis Centre; ATTOM: Access to Transplantation and Transplant Outcome Measures; NECOSAD: Netherlands Cooperative Study on the Adequacy of Dialysis; CPM: Clinical Performance Measures; ERDA-EDTA: European Renal Association-European Dialysis and Transplant Association; ATTOM: Access to Transplantation and Transplant Outcome Measures; ArMORR: Accelerated Mortality on Renal Replacement; CRIC: Chronic Renal Insufficiency Cohort; HEMO: Hemodialysis

Suppl. Table S3. Definitions of income, education and occupation in the included studies

Study	Income	Education	Occupation
1992; Soucie	-	>12 vs. <8 years	-
1995; Barker-Cummings	-	>12 vs. <8 years	Employed vs. unemployed
2000; Stehman-Breen	-	College vs. high school graduate	Employed vs. unemployed
2000; Allon	≥$7,500 vs. <$7,500 per year	College vs. high school graduate	-
2003; Oniscu	Area-level deprivation index		
2004; Jager	-	High vs. low	Employed vs. unemployed
2005; Kutner	-	College vs. high school graduate	Employed vs. unemployed
2006; Caskey	Area-level Townsend Index deprivation score		
2007; Gill	ZIP-code median household income	-	-
2008; Sanabria	Highest vs. lowest	Postgraduate vs. illiterate	-
2008; Schaeffner	-	College graduate vs. <high school	-
2009; Eisenstein	ZIP-code median household income	-	-
2009; Feyssa	-	-	Employed vs. unemployed
2010; Huang	-	High vs. low	Employed vs. unemployed
2010; Sandhu	Social adaptability index	-	-
2011; Bastos	Family income	-	-
2011; Machado	Area-level Human Development Index		
2012; Marinovich	Income vs. no income	-	-
2012; Xu	>$6,320 vs. <$3,160	College vs. primary school	-
2012; Huang	-	≥High-school vs. <high-school	-
2012; Lockridge	-	>High-school vs. <high-school	-
2012; Neri	-	-	Employed vs. unemployed
2012; Udayaraj	Area-level Townsend Index	-	-
2012; Goldfarb-Rumyantzev	-	College graduate vs. <high-school	-
2012; Garg	Social adaptability index	-	-

2013; Kimmel	ZIP-code median household income	-	-
2014; Goldfarb-Rumyantzev	-	-	Full time vs. unemployed
2014; Grace	Area-level Index of Relative Socio-Economic Advantage and Disadvantage		
2014; Yang	-	>High-school vs. primary school	-
2014; Teixeira	-	>8 vs. ≤8 years	-
2015; Nee	ZIP-code median household income	-	-
2015; Wang	-	≥ Primary school vs. illiterate	-
2015; Ward	Area-level 2011 Pobal Haase Pratschke Deprivation Index		
2015b; Ward	Area-level 2011 Pobal Haase Pratschke Deprivation Index		
2016; Shabankhani	-	-	Employed vs. unemployed
2016; Kihal-Talantikite	-	-	Employed vs. unemployed
2016; Molmenti	-	College graduate vs. <high-school	-
2017; Wimink	Area-level deprivation index		
2017; Gulcan	-	-	Employed vs. unemployed
2017; Kim	-	≥High-school vs. <middle-school	-
2017; Chan	Area-level Index of Relative Socio-Economic Advantage and Disadvantage		
2017; Imanishi	-	University graduate vs. <high-school	Employed vs. unemployed
2017; Zhang	Disposable income	>12 vs. ≤9 years	-
2017; Choi	High vs. medical aid	-	-
2017; Taber	-	College graduate vs. <high-school	-
2018; Lin	-	-	Employed vs. unemployed
2018; Krishnashamy	Area-level Index of Relative Socio-Economic Advantage and Disadvantage		
2018; Keddis	Above vs. below poverty	≥High-school vs. <high-school	
2018; Peng	-	-	Employed vs. unemployed
2018b; Zhang	Individual disposable income	>High school vs. <high school	-
2018; Chatelet	European Deprivation Index		
2019; Nee	ZIP-code median household income	-	-

2019; Ke	Area-level household income	-	-
2019; King	-	>High-school vs. ≤high-school	-
2019; Naylor	Area-level median household income	-	-
2020; Krishnashamy	Area-level Index of Relative Socio-Economic Advantage and Disadvantage		
2020; Yolgosteren	-	College vs. primary school	-
2020; Hayat	Area-level Zealand Deprivation Index		
2020; Pruthi	-	≥High-school vs. <high-school	Full/part time vs. unemployed
2020; Ng	Household ≥$25,000 vs. <$25,000 per year	≥High-school vs. <high-school	-
2020; Park	-	-	Employed vs. unemployed
2021; Barth	Active vs. inactive	-	-
2021; Wesselman	Household ≥$50,000 vs. <$50,000 per year	-	-
2021; Belyaev	Area-level Zealand Deprivation Index		
2021; Rita	-	>High-school vs. ≤high-school	-
2021; Park	Highest income vs. aided	-	-

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Supplementary S4: Risk of bias assessment

Suppl. Table S4. Outcomes of the ROBINS-I evaluation

Study	*Confounding*	*Selection of participants*	*Classification of exposures*	*Deviations from intended exposures*	*Missing data*	*Measurement of outcomes*	*Selection of the reported result*	*Overall*
2021; Qian	Low	Low	Low	Low	Low	Low	Low	**Low**
2021; MacRae	Low	Low	Low	Low	Low	Low	Low	**Low**
2021; Pisoni	Low	Low	Low	Low	Low	Low	Low	**Low**
2021; Schellartz	Moderate	Low	Moderate	Low	NI	Low	Low	**Moderate**
2021; Barth	Low	Low	Low	Low	Low	Low	Low	**Low**
2021; Wesselman	Low	Low	Low	Low	NI	Low	Low	**Low**
2021; Cirillo	Low	Low	Low	Low	NI	Low	Low	**Low**
2021; Ahearn	Low	Low	Low	Low	Low	Low	Low	**Low**
2021; Rita	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2021; Wiley	Low	Low	Low	Low	Low	Low	Low	**Low**
2021; Belyaev	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2021; Park	Low	Low	Low	Low	NI	Low	Low	**Low**
2020; Arya	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Arhuidese	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Copeland	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Krishnasamy	Low	Low	Low	Low	NI	Low	Low	**Low**
2020; Yolgosteren	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2020; Ku	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Hayat	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Vogel	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Shen	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Melk	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**

2020; Park	Low	Low	Moderate	Low	Low	Low	Low	**Moderate**
2020; Pruthi	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Murphy	Low	Low	Low	Low	Low	Low	Low	**Low**
2020; Ng	Low	Low	Low	Low	Low	Low	Low	**Low**
2019; Nee	Low	Low	Low	Low	Low	Low	Low	**Low**
2019; Howson	Low	Low	Low	Low	Low	Low	Low	**Low**
2019; King	Low	Low	Low	Low	NI	Low	Low	**Low**
2019; Myaskovsky	Low	Low	Low	Low	Low	Low	Low	**Low**
2019; Ke	Low	Low	Low	Low	Low	Low	Low	**Low**
2019; Naylor	Low	Low	Moderate	Low	Low	Low	Low	**Moderate**
2018; Shah	Low	Low	Low	Low	Low	Low	Low	**Low**
2018; Huria	Low	Low	Low	Low	Low	Low	Low	**Low**
2018; Lin	Low	Moderate	Low	Low	Low	Low	Low	**Moderate**
2018; Krishnasamy	Low	Low	Low	Low	Low	Low	Low	**Low**
2018; Keddis	Low	Moderate	Low	Low	Low	Low	Low	**Moderate**
2018; Williams	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2018; Sypek	Low	Low	Low	Low	Low	Low	Low	**Low**
2018; Liu	Low	Low	Low	Low	Low	Low	Low	**Low**
2018; Chatelet	Low	Low	Low	Low	Low	Low	Low	**Low**
2018[a]; Zhang	Low	Low	Low	Low	NI	Low	Low	**Low**
2018[b]; Zhang	Low	Low	Low	Low	NI	Low	Low	**Low**
2018; Peng	Low	Low	Low	Low	Low	Low	Low	**Low**
2018; Purnell	Low	Low	Low	Low	NI	Low	Low	**Low**
2017; Trivedi	Low	Low	Low	Low	Low	Low	Low	**Low**
2017; McGill	Low	Low	Low	Low	Low	Low	Low	**Low**
2017; McKercher	Low	Low	Low	Low	Low	Low	Low	**Low**
2017; Pisoni	Low	Low	Low	Low	NI	Low	Low	**Low**
2017; Wilmink	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2017; Gulcan	Moderate	Moderate	Low	Low	Low	Low	Low	**Moderate**
2017; Kim	Low	Low	Low	Low	Low	Low	Low	**Low**
2017; Chan	Low	Low	Low	Low	Low	Low	Low	**Low**
2017; Wallace	Moderate	Low	Moderate	Low	Low	Low	Low	**Moderate**

2017; Trinh	Low	Low	Low	Low	NI	Low	Low	**Low**
2017; Imanishi	Low	Low	Low	Low	NI	Low	Low	**Low**
2017; Gill	Low	Low	Low	Low	Low	Low	Low	**Low**
2017; Zhang	Low	Low	Low	Low	NI	Low	Low	**Low**
2017; Choi	Low	Low	Low	Low	Low	Low	Low	**Low**
2017; Taber	Low	Low	Low	Low	Low	Low	Low	**Low**
2016; Tamayo Isla	Serious	Low	Low	Low	NI	Low	Low	**Serious**
2016; Liu	Low	Low	Low	Low	Low	Low	Low	**Low**
2016; Shabankhani	Moderate	Moderate	Low	Low	Low	Low	Low	**Moderate**
2016; Mucsi	Low	Low	Low	Low	Low	Low	Low	**Low**
2016; Kihal-Talantikite	Low	Moderate	Moderate	Low	Low	Low	Low	**Moderate**
2016; Molmenti	Low	Moderate	Low	Low	NI	Low	Low	**Moderate**
2015; Nee	Low	Low	Low	Low	NI	Low	Low	**Low**
2015; Lawton	Low	Low	Low	Low	NI	Low	Low	**Low**
2015; van den Beukel	Low	Low	Low	Low	Low	Low	Low	**Low**
2015; Park	Serious	Low	Low	Low	NI	Low	Low	**Serious**
2015; Wang	Moderate	Moderate	Low	Low	Low	Low	Low	**Moderate**
2015; Ward	Low	Low	Low	Low	Low	Low	Low	**Low**
2015; Ilori	Low	Low	Low	Low	Low	Low	Low	**Low**
2015; Matsuoka	Low	Moderate	Low	Low	Low	Low	Low	**Moderate**
2015; Ward	Low	Low	Low	Low	Low	Low	Low	**Low**
2015; Arce	Low	Low	Low	Low	Low	Low	Low	**Low**
2014; Goldfarb-Rumyantzev	Low	Low	Low	Low	NI	Low	Low	**Low**
2014; Cole	Low	Low	Low	Low	NI	Low	Low	**Low**
2014; Burrows	Low	Low	Low	Low	Low	Low	Low	**Low**
2014; Prasad	Serious	Low	Low	Low	NI	Low	Low	**Serious**
2014; Grace	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2014; Kim	Serious	Low	Low	Low	Low	Low	Low	**Serious**
2014; Yang	Low	Low	Low	Low	Low	Low	Low	**Low**

2014; de Moraes	Low	Low	Low	Low	NI	Low	Low	**Low**
2014; Texeira	Low	Moderate	Low	Low	Low	Low	Low	**Moderate**
2013; Yan	Low	Low	Low	Low	Low	Low	Low	**Low**
2013; Chang	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2013; Ros	Low	Low	Low	Low	Low	Low	Low	**Low**
2013; Fernadez	Low	Low	Moderate	Low	Low	Low	Low	**Moderate**
2013; Kimmel	Low	Low	Low	Low	Low	Low	Low	**Low**
2013; Arce	Low	Low	Low	Low	NI	Low	Low	**Low**
2013; Purnell	Low	Low	Low	Low	Low	Low	Low	**Low**
2013; Waterman	Low	Moderate	Low	Low	Low	Low	Low	**Moderate**
2013; PromisLow	Low	Low	Low	Low	Low	Low	Low	**Low**
2012; Sood	Moderate	Low	Moderate	Low	Low	Low	Low	**Moderate**
2012; Woo	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2012; van den Beukel	Low	Low	Low	Low	Low	Low	Low	**Low**
2012; Marinovich	Low	Low	Low	Low	NI	Low	Low	**Low**
2012; Xu	Low	Low	Low	Low	NI	Low	Low	**Low**
2012; Huang	Low	Low	Low	Low	Low	Low	Low	**Low**
2012; Lockridge	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2012; Neri	Low	Moderate	Low	Low	Low	Low	Low	**Moderate**
2012; Couchoud	Low	Low	Low	Low	Low	Low	Low	**Low**
2012; Goldfarb-Rumyantzev	Low	Low	Low	Low	NI	Low	Low	**Low**
2012; Udayaraj	Low	Low	Moderate	Low	Low	Low	Low	**Moderate**
2012; Patzer	Low	Low	Moderate	Low	Low	Low	Low	**Moderate**
2012; Garg	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2011; Lopez-Vargas	Low	Low	Low	Low	NI	Low	Low	**Low**
2011; Carrero	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2011; Chidambaram	Low	Low	Low	Low	Low	Low	Low	**Low**
2011; Bastos	Low	Low	Low	Low	Low	Low	Low	**Low**
2011; Machado	Low	Low	Low	Low	Low	Low	Low	**Low**

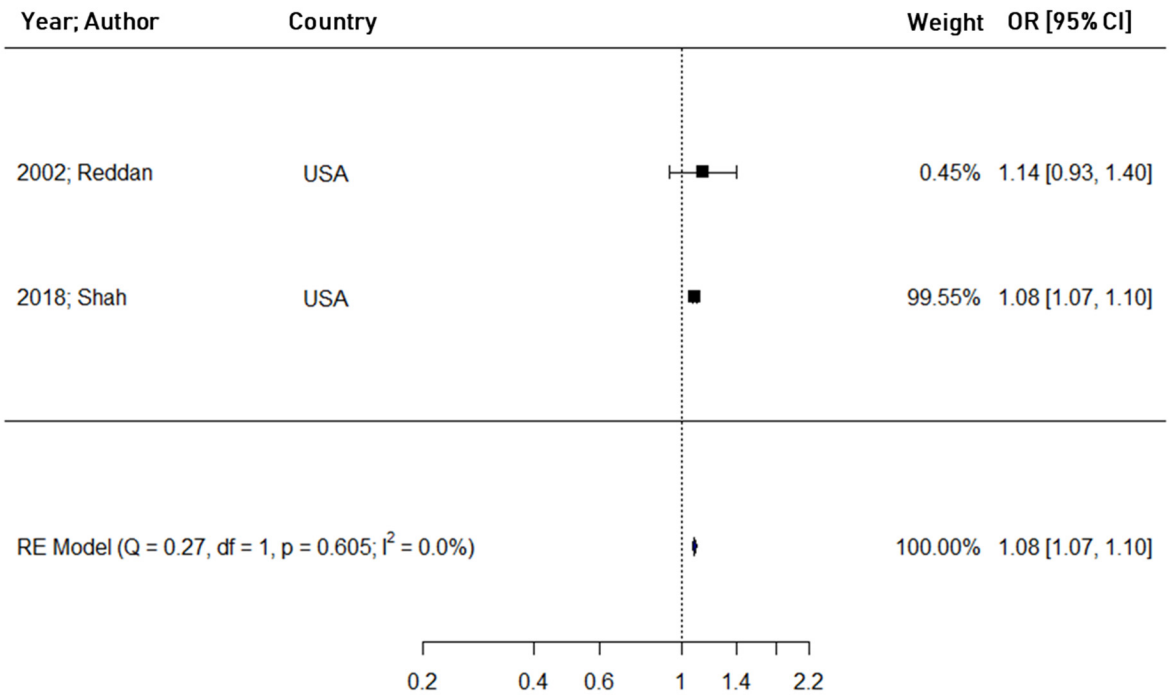
2011; Hall	Low	Low	Low	Low	NI	Low	Low	**Low**
2010; Chung	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2010; Huang	Moderate	Moderate	Low	Low	Low	Low	Low	**Moderate**
2010; Sood	Low	Low	Low	Low	Low	Low	Low	**Low**
2010; Sandhu	Low	Low	Low	Low	NI	Low	Low	**Low**
2010; Udayaraj	Low	Low	Moderate	Low	Low	Low	Low	**Moderate**
2010; Ng	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2010; Ravanan	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2009; Roderick	Low	Low	Low	Low	Low	Low	Low	**Low**
2009; de Mutsert	Serious	Low	Low	Low	Low	Low	Low	**Serious**
2009; Eisenstein	Low	Low	Low	Low	Low	Low	Low	**Low**
2009; Yeates	Low	Low	Low	Low	Low	Low	Low	**Low**
2009; Feyssa	Serious	Low	Low	Low	Low	Low	Low	**Serious**
2009; Patzer	Low	Low	Moderate	Low	Low	Low	Low	**Moderate**
2008; Wolf	Low	Low	Low	Low	Low	Low	Low	**Low**
2008; Sanabria	Low	Low	Low	Low	Low	Low	Low	**Low**
2008; Hall	Low	Low	Moderate	Low	Low	Low	Low	**Moderate**
2008; Schaeffner	Low	Low	Low	Low	Low	Low	Low	**Low**
2007; Gill	Low	Low	Low	Low	NI	Low	Low	**Low**
2006; Robinson	Low	Low	Low	Low	Low	Low	Low	**Low**
2006; Caskey	Low	Low	Low	Low	Low	Low	Low	**Low**
2006; Hemmelgarn	Low	Low	Low	Low	Low	Low	Low	**Low**
2006; Bayat	Low	Low	Low	Low	Low	Low	Low	**Low**
2005; Chung	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2005; Mircescu	Low	Low	Low	Low	Low	Low	Low	**Low**
2005; Kutner	Serious	Low	Low	Low	Low	Low	Low	**Serious**
2005; Press	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2005; Pallet	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2005; Chakkera	Low	Low	Low	Low	Low	Low	Low	**Low**
2004; Prasad	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2004; Jager	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**
2004; Yeates	Low	Low	Low	Low	Low	Low	Low	**Low**

2004; Sequist	Low	Low	Low	Low	Low	Low	Low	**Low**
2004; Villar	Low	Low	Low	Low	Low	Low	Low	**Low**
2003; Wang	Serious	Low	Low	Low	NI	Low	Low	**Serious**
2003; Cass	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2003; Oniscu	Low	Low	Low	Low	Low	Low	Low	**Low**
2002; Reddan	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2002; Pisoni	Low	Low	Low	Low	NI	Low	Low	**Low**
2002; Iseki	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2002; Stack	Low	Low	Low	Low	Low	Low	Low	**Low**
2001; Winkelmayer	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
2000; Stehman-Breen	Low	Low	Low	Low	NI	Low	Low	**Low**
2000; Allon	Low	Low	Low	Low	NI	Low	Low	**Low**
2000; Schaubel	Low	Low	Low	Low	Low	Low	Low	**Low**
2000; Garg	Low	Low	Low	Low	NI	Low	Low	**Low**
1999; Chandna	Low	Moderate	Low	Low	NI	Low	Low	**Moderate**
1996; Bleyer	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
1996; Medina	Moderate	Moderate	Low	Low	NI	Low	Low	**Moderate**
1995; Barker-Cummings	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
1994; Cowie	Moderate	Low	Low	Low	NI	Low	Low	**Moderate**
1994; Puqh	Low	Low	Low	Low	Low	Low	Low	**Low**
1992; Soucie	Moderate	Low	Low	Low	Low	Low	Low	**Moderate**

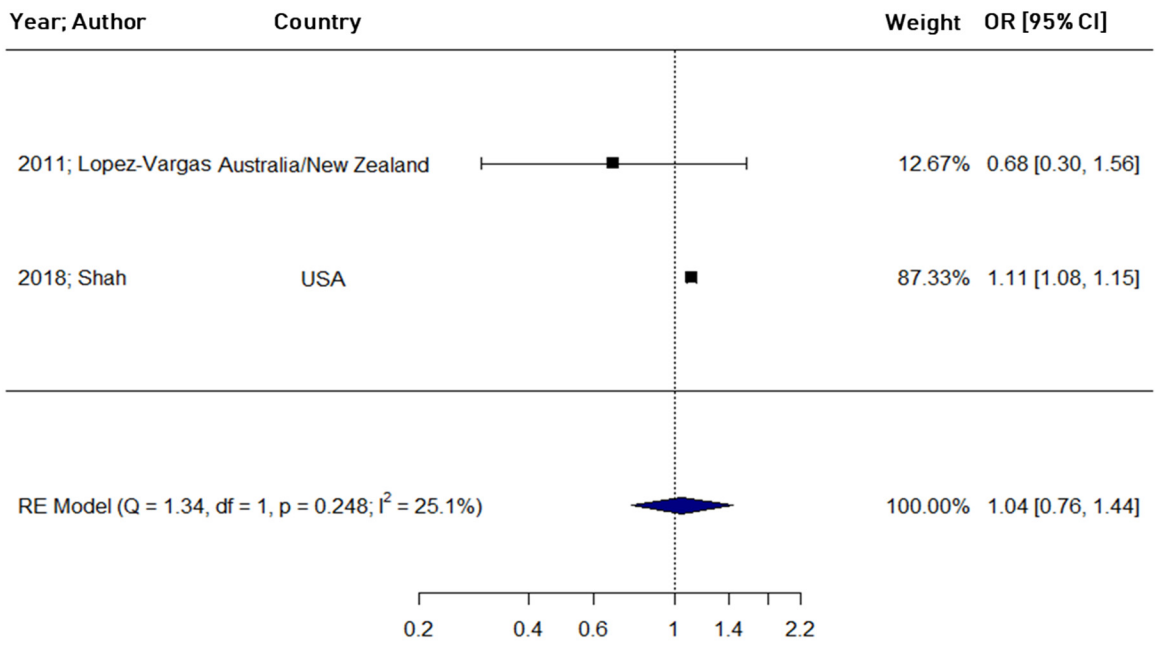
NI: no information

Supplementary S5: Forest plots

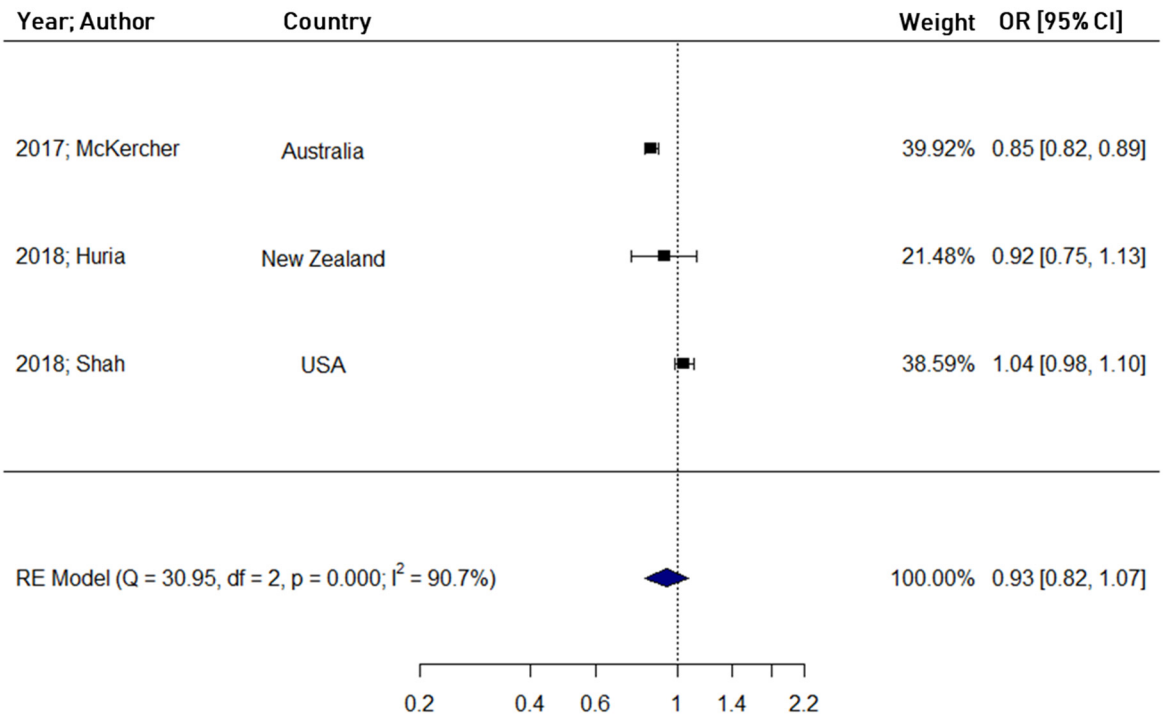
5.1. Arteriovenous fistula/graft *vs.* Central venous catheter



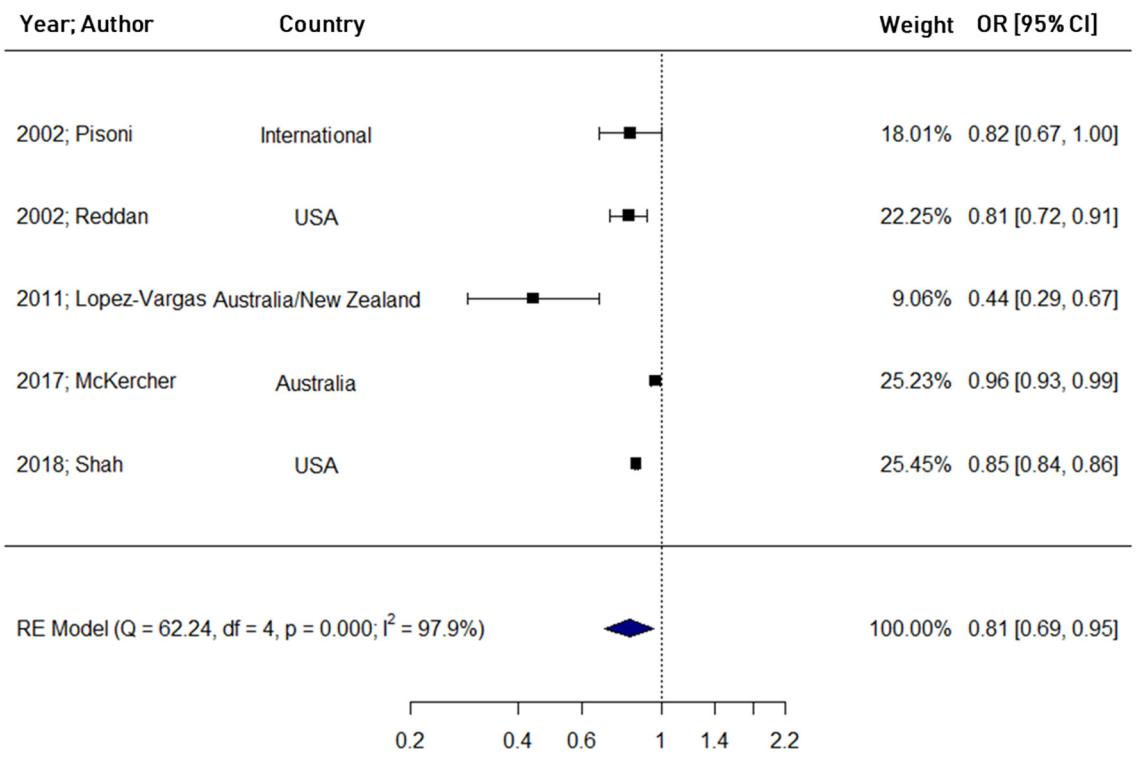
Suppl. Figure S1. Forest plot comparing Black and White patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.



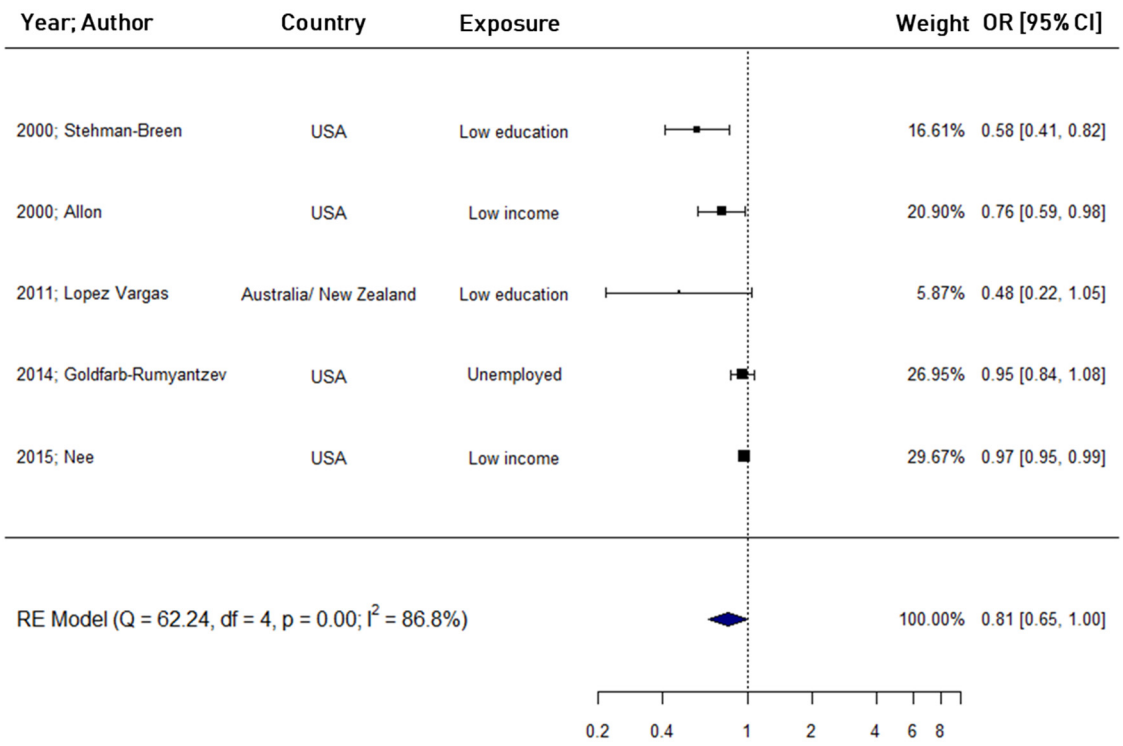
Suppl. Figure S2. Forest plot comparing Asian and White patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.



Suppl. Figure S3. Forest plot comparing Indigenous and White patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.

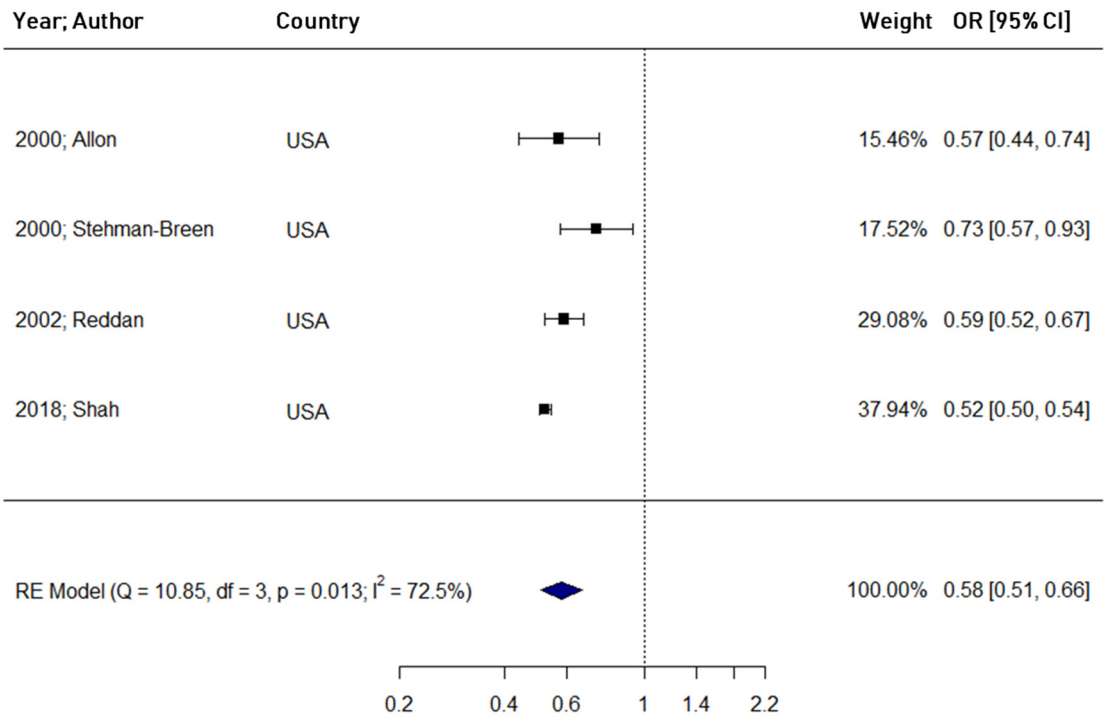


Suppl. Figure S4. Forest plot comparing female and male patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.

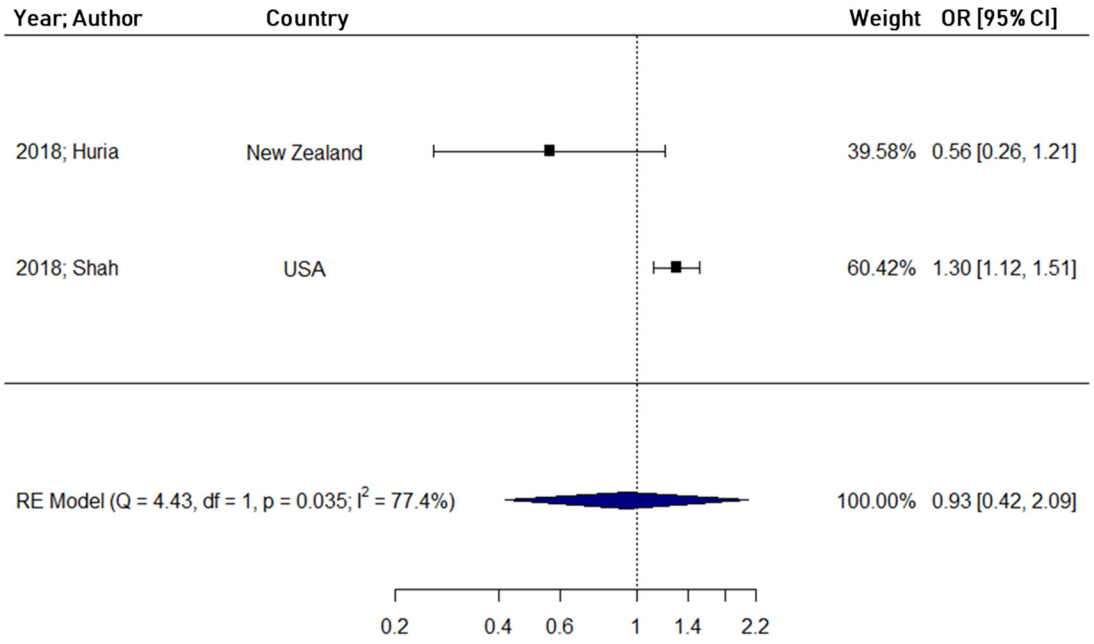


Suppl. Figure S5. Forest plot comparing low and high socioeconomic status patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.

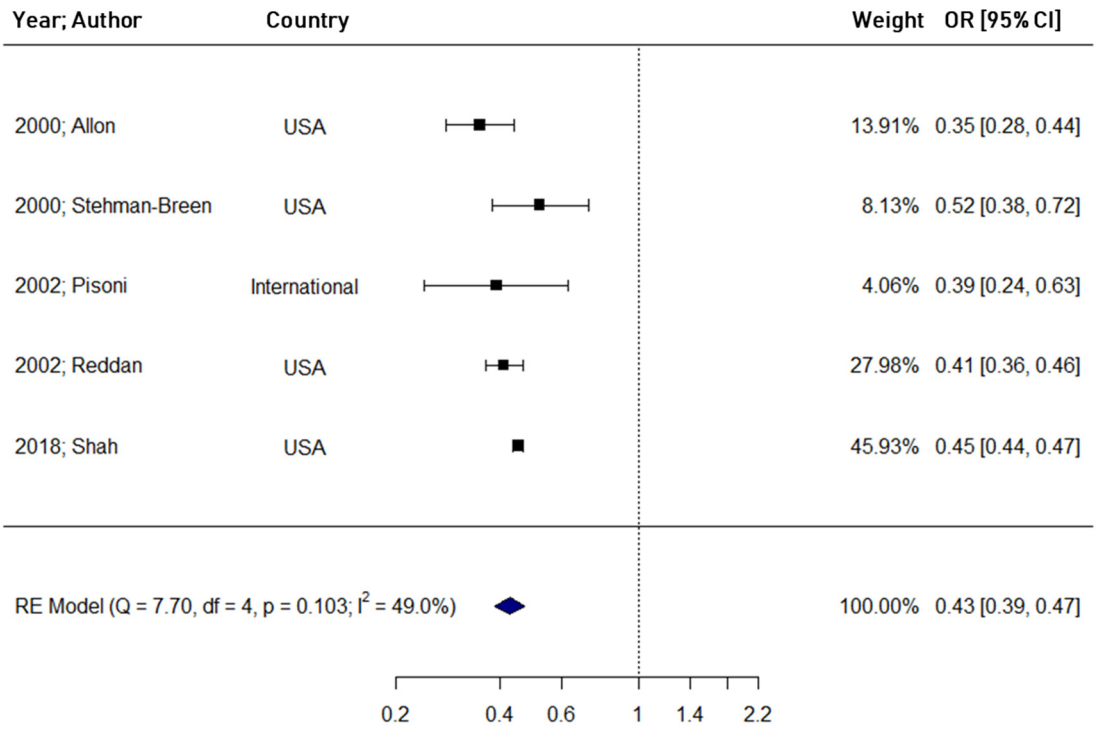
5.2. Arteriovenous fistula *vs*. Arteriovenous graft



Suppl. Figure S6. Forest plot comparing Black and White patients (reference) regarding dialysis initiation with arteriovenous fistula *vs*. arteriovenous graft.

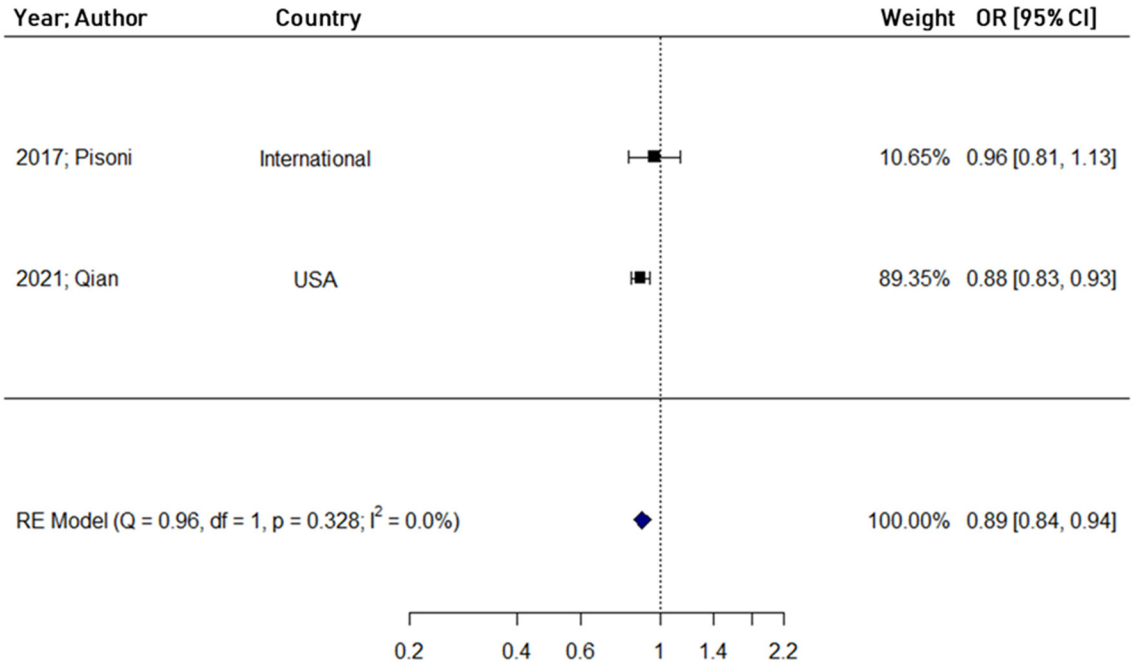


Suppl. Figure S7. Forest plot comparing Indigenous and White patients (reference) regarding dialysis initiation with arteriovenous fistula *vs*. arteriovenous graft.

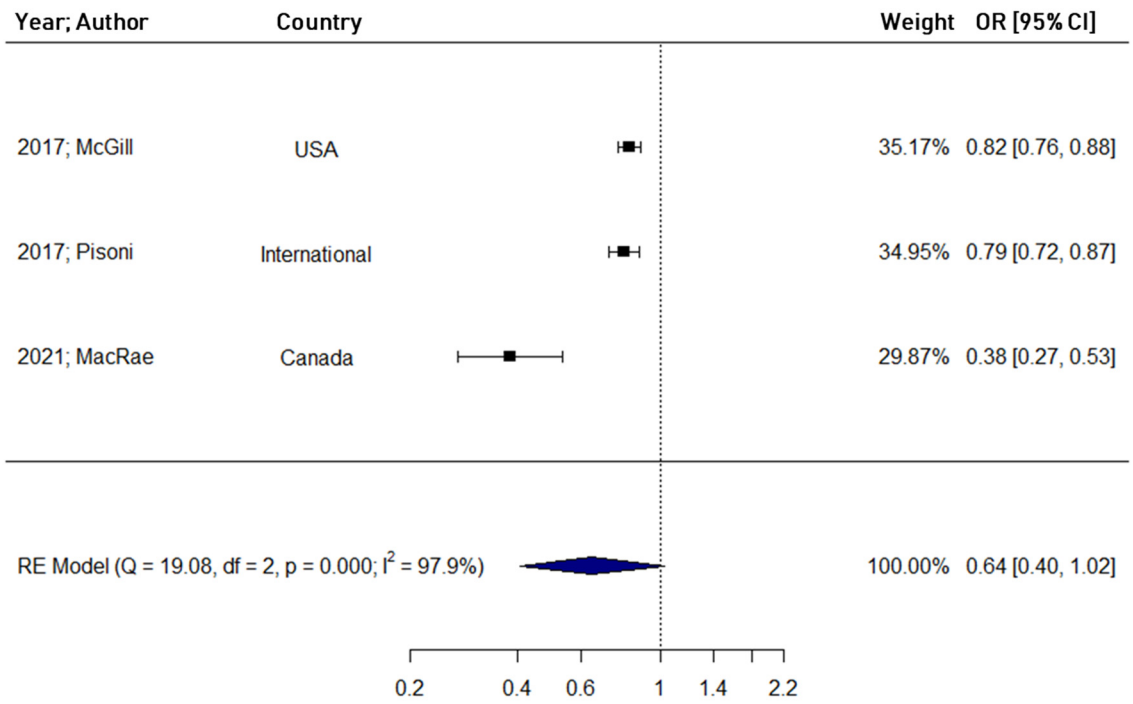


Suppl. Figure S8. Forest plot comparing female and male patients (reference) regarding dialysis initiation with arteriovenous fistula *vs*. arteriovenous graft.

5.3. Successful arteriovenous fistula use

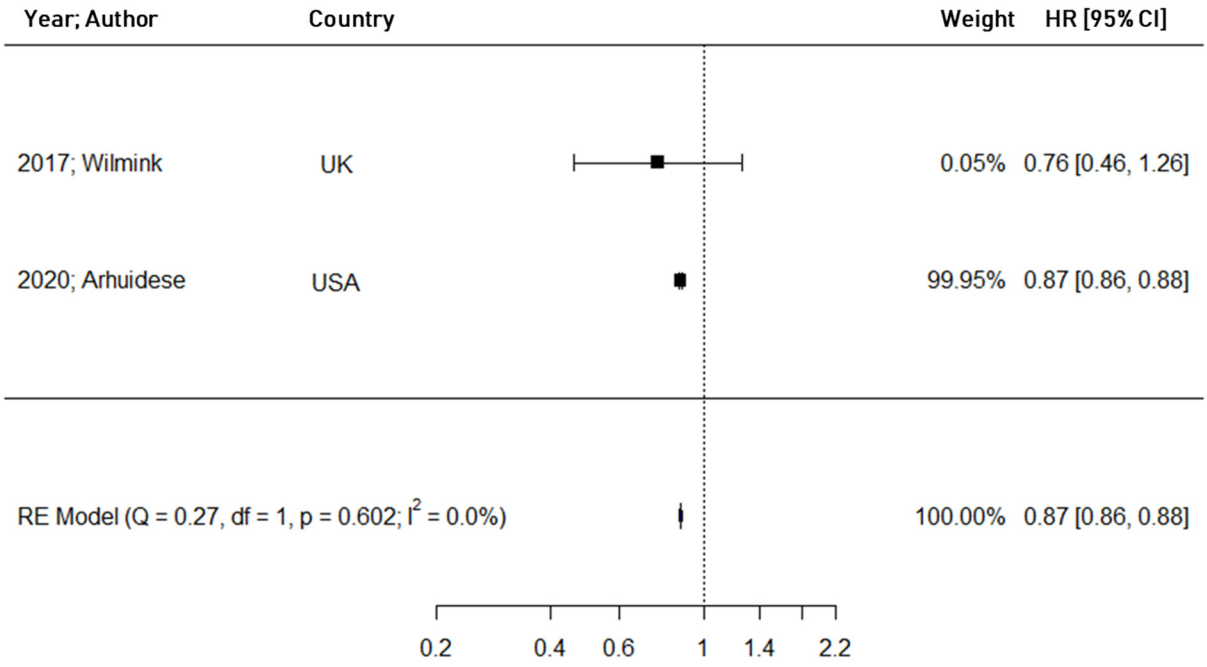


Suppl. Figure S9. Forest plot comparing Black and White patients (reference) regarding successful arteriovenous fistula use.

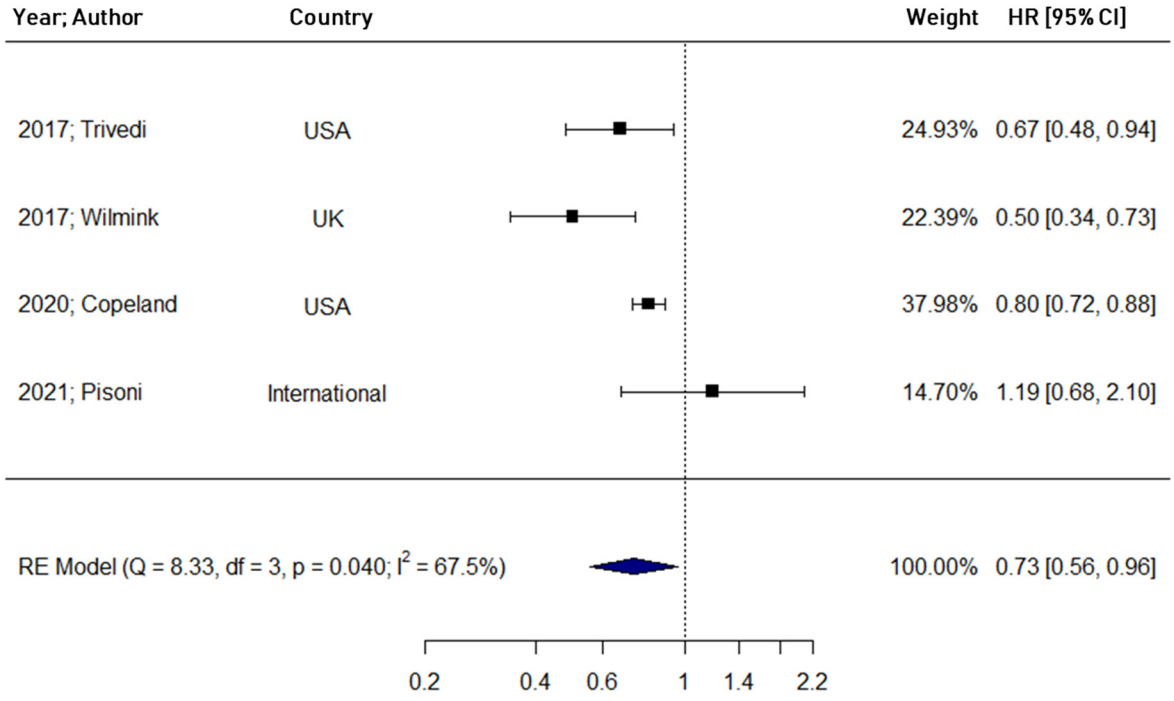


Suppl. Figure S10. Forest plot comparing female and male patients (reference) regarding successful arteriovenous fistula.

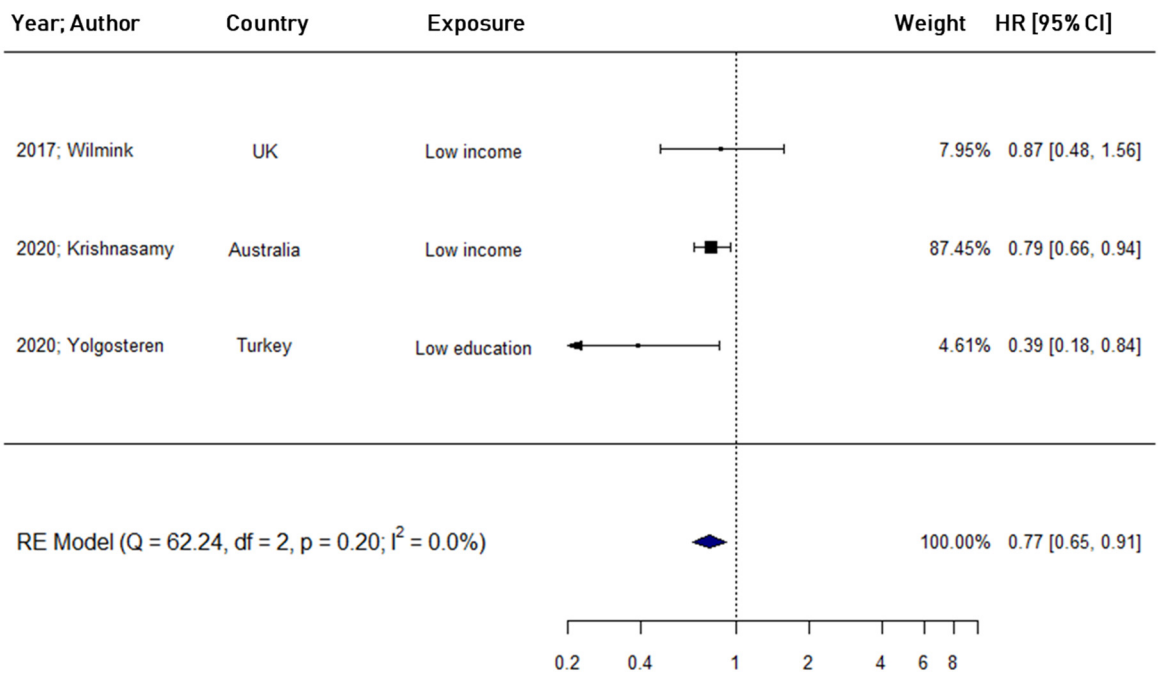
5.4. Primary arteriovenous fistula patency



Suppl. Figure S11. Forest plot comparing Black and White patients (reference) regarding primary arteriovenous fistula patency.

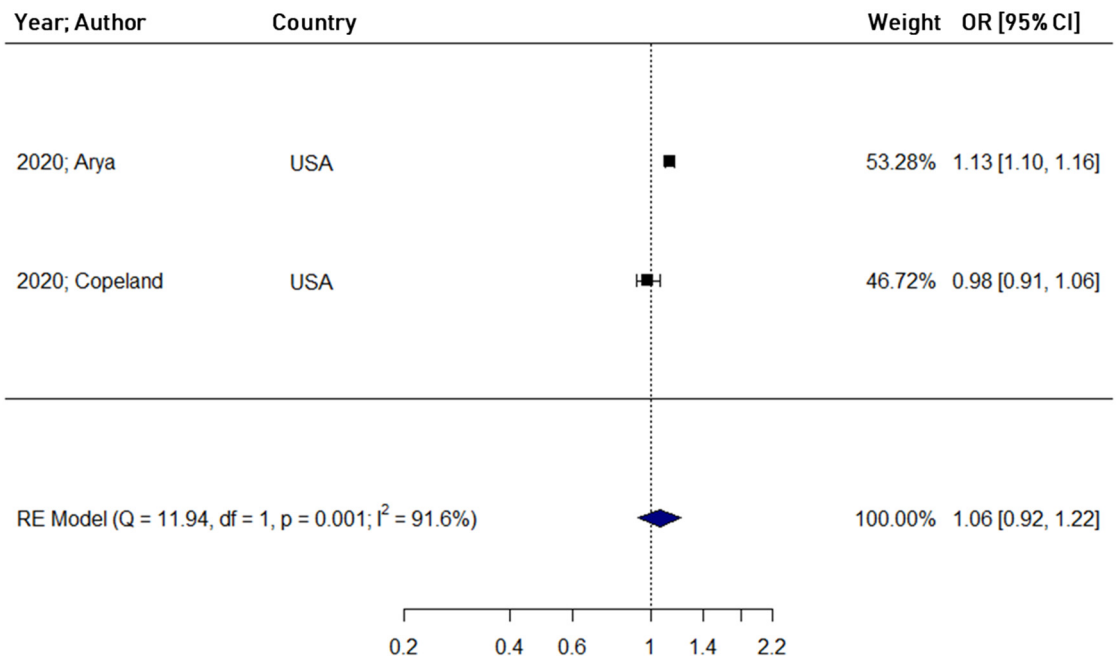


Suppl. Figure S12. Forest plot comparing female and male patients (reference) regarding primary arteriovenous fistula patency.

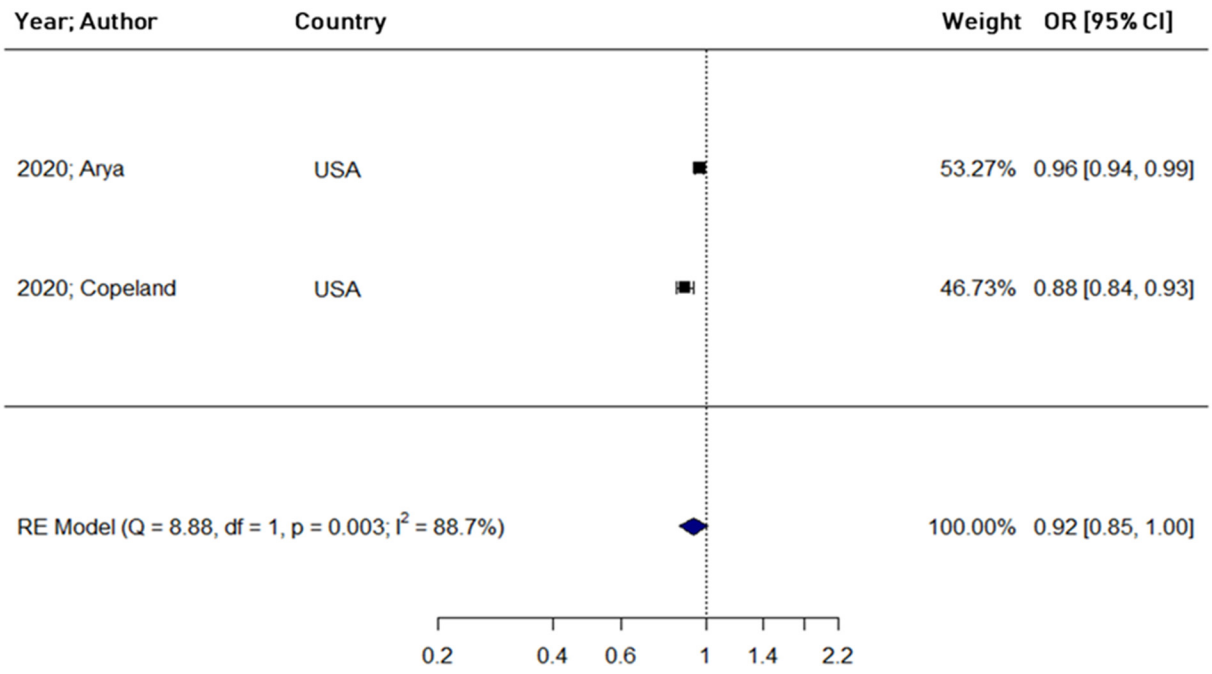


Suppl. Figure S13. Forest plot comparing low and high socioeconomic status patients (reference) regarding primary arteriovenous fistula patency.

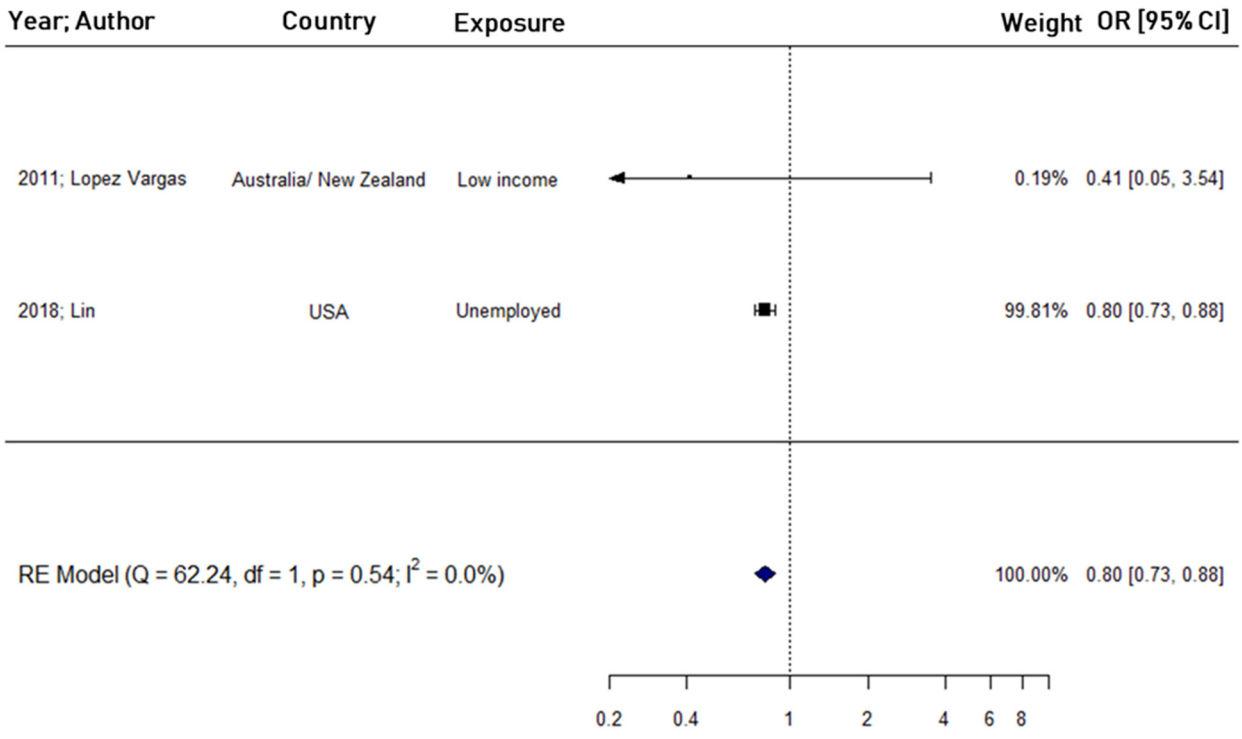
5.5. Transition from central venous catheter to arteriovenous fistula/graft



Suppl. Figure S14. Forest plot comparing Black and White patients (reference) regarding the transition from central venous catheter to arteriovenous fistula/graft.

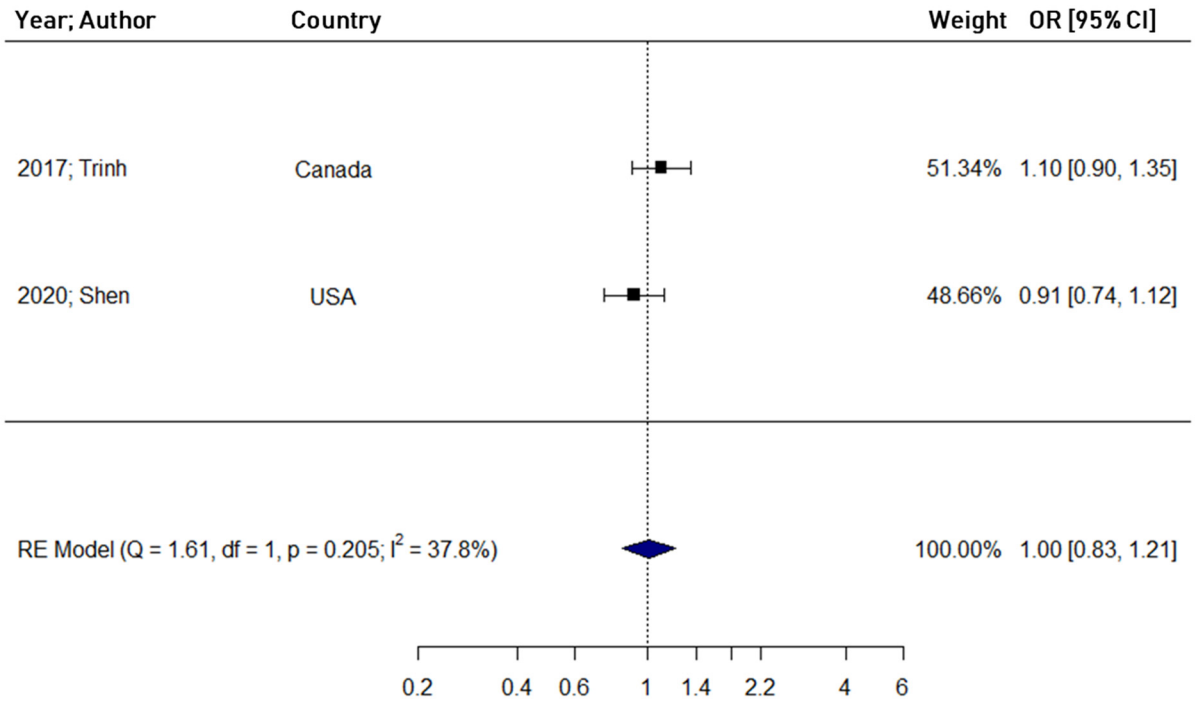


Suppl. Figure S15. Forest plot comparing female and male patients (reference) regarding the transition from central venous catheter to arteriovenous fistula/graft.

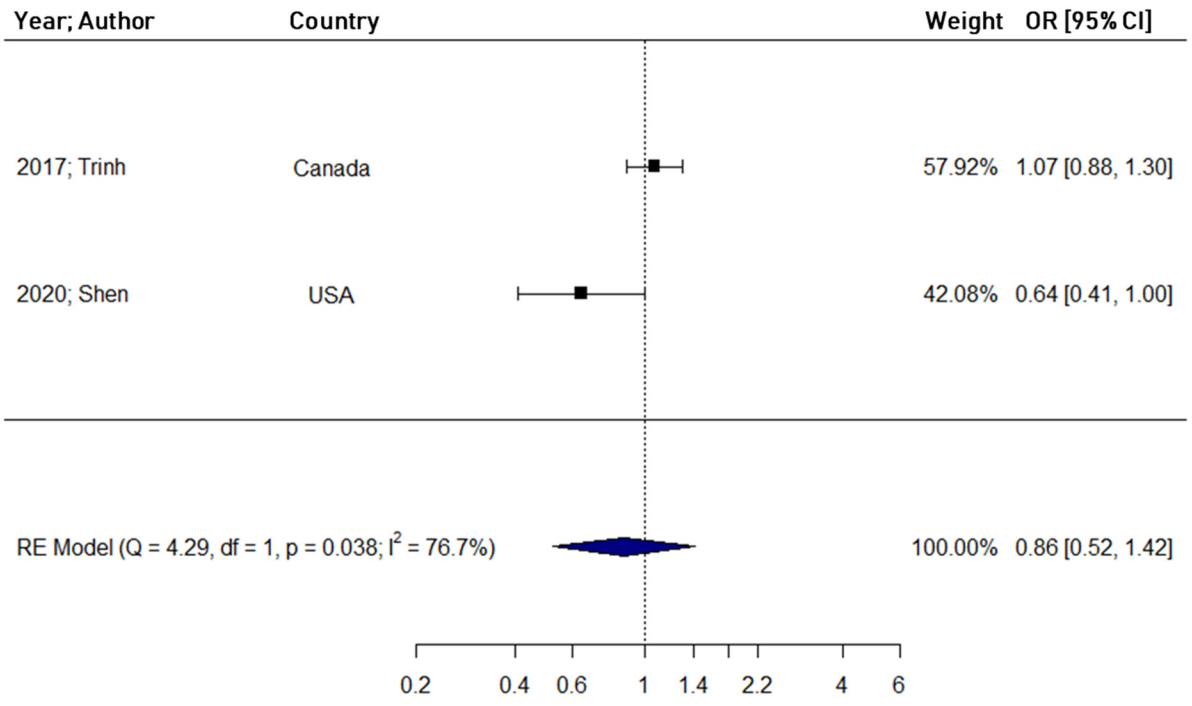


Suppl. Figure S16. Forest plot comparing low and high socioeconomic status patients (reference) the transition from central venous catheter to arteriovenous fistula/graft.

5.6. Home dialysis

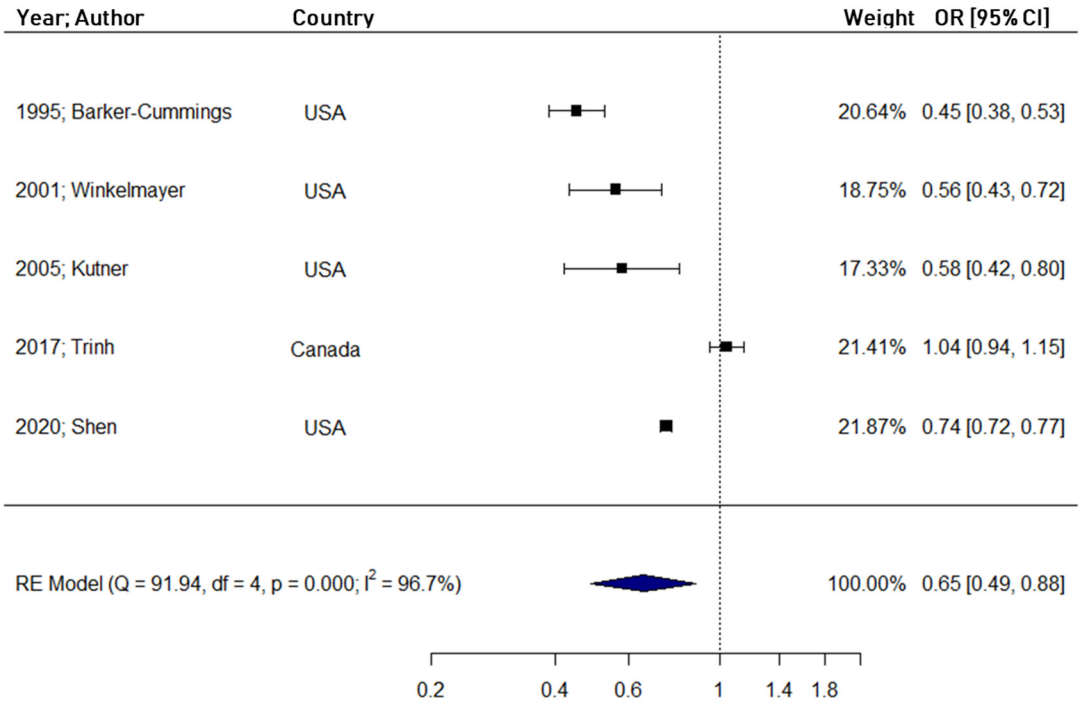


Suppl. Figure S17. Forest plot comparing Black and White patients (reference) regarding home dialysis.

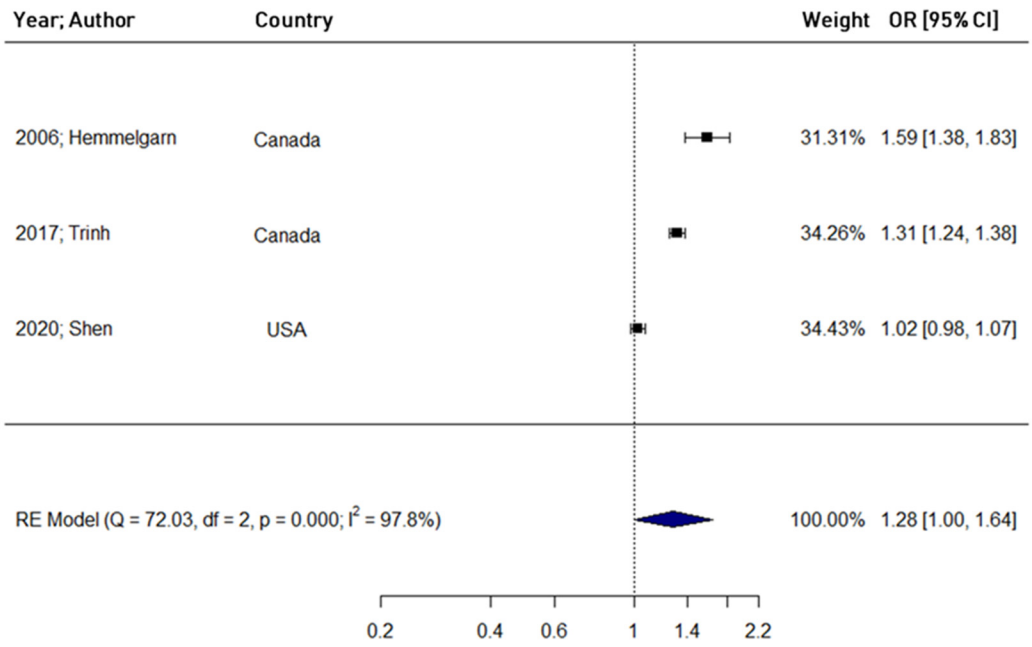


Suppl. Figure S18. Forest plot comparing Asian and White patients (reference) regarding home dialysis.

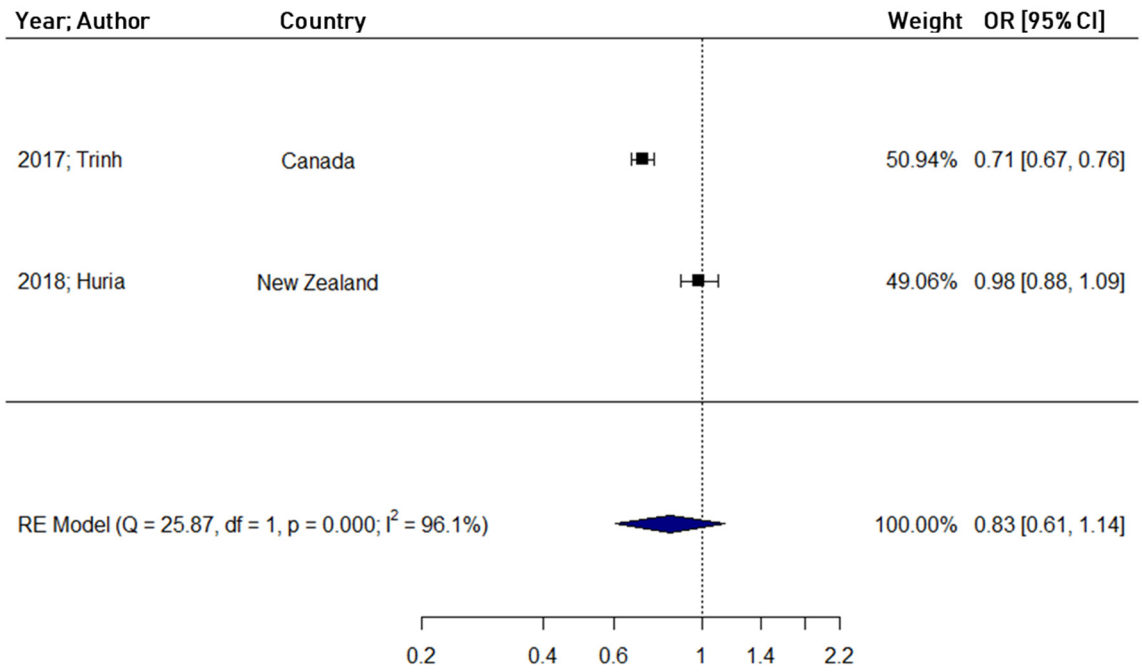
5.7. Peritoneal dialysis



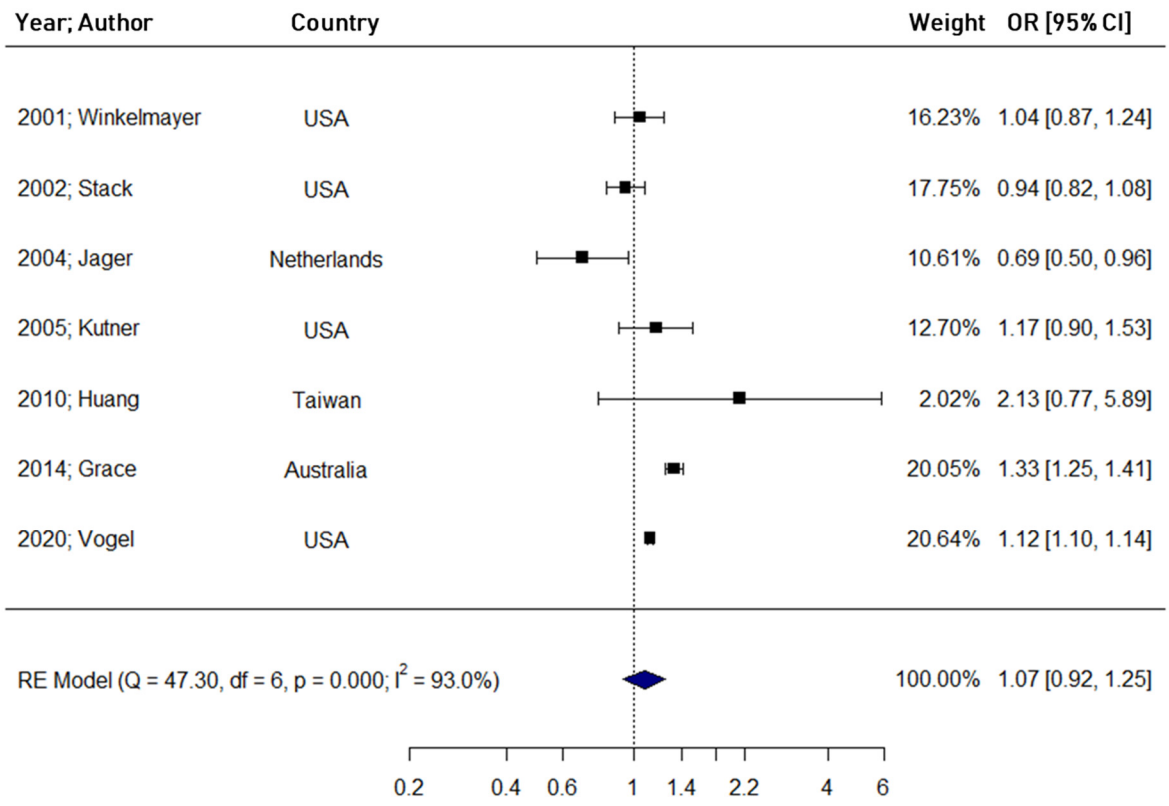
Suppl. Figure S19. Forest plot comparing Black and White patients (reference) regarding peritoneal dialysis use.



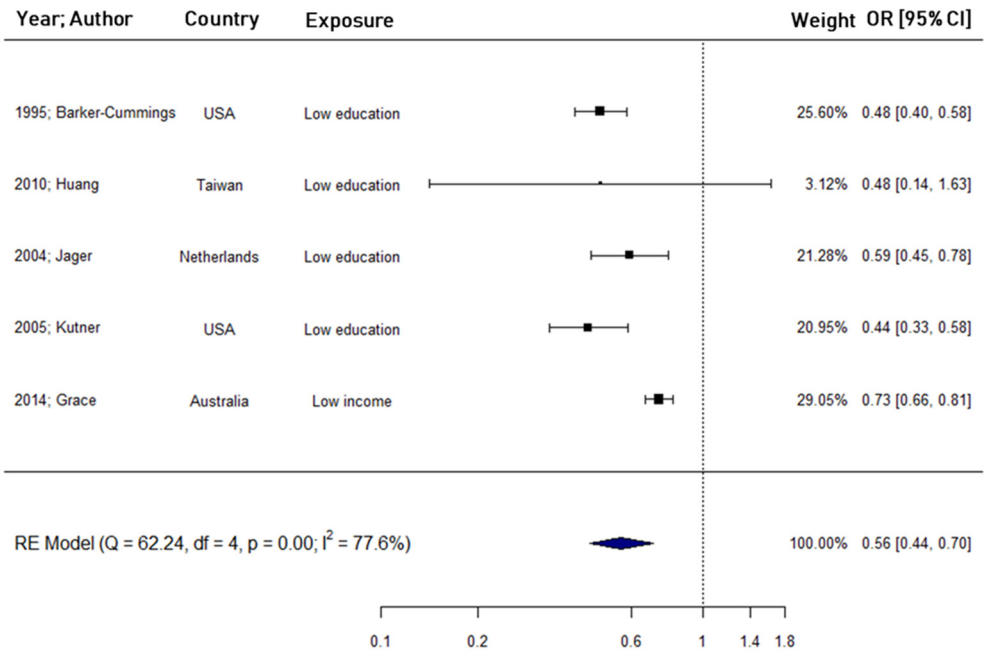
Suppl. Figure S20. Forest plot comparing Asian and White patients (reference) regarding peritoneal dialysis use.



Suppl. Figure S21. Forest plot comparing Indigenous and White patients (reference) regarding peritoneal dialysis use.

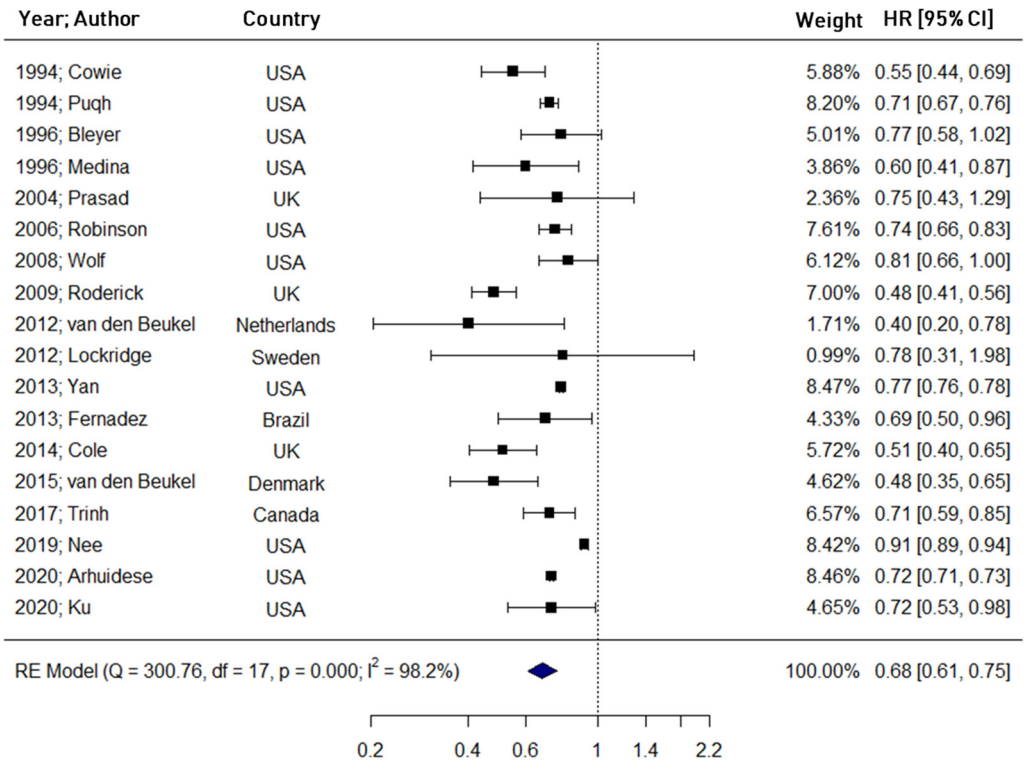


Suppl. Figure S22. Forest plot comparing female and male patients (reference) regarding peritoneal dialysis use.

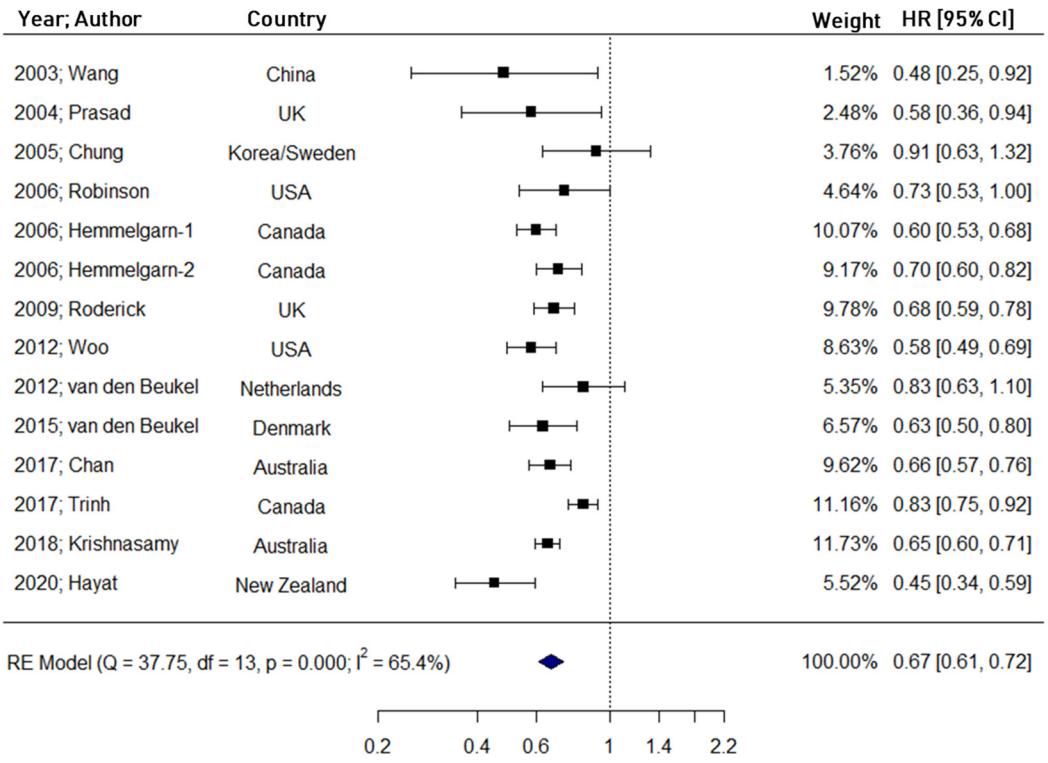


Suppl. Figure S23. Forest plot comparing low and high socioeconomic status patients (reference) regarding peritoneal dialysis use.

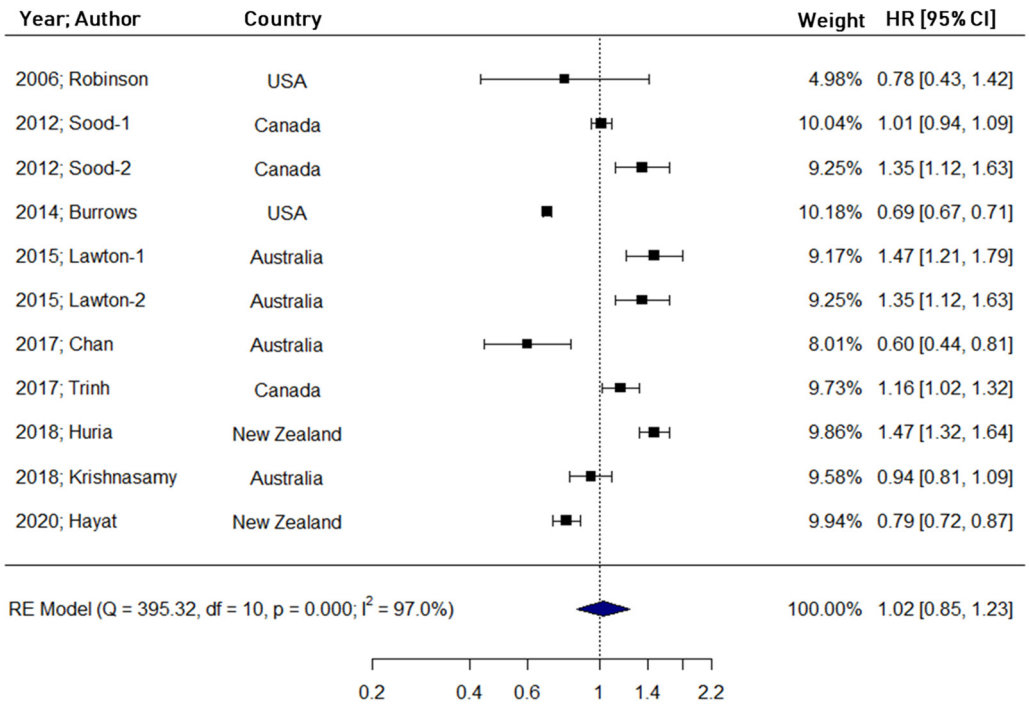
5.8. Dialysis survival



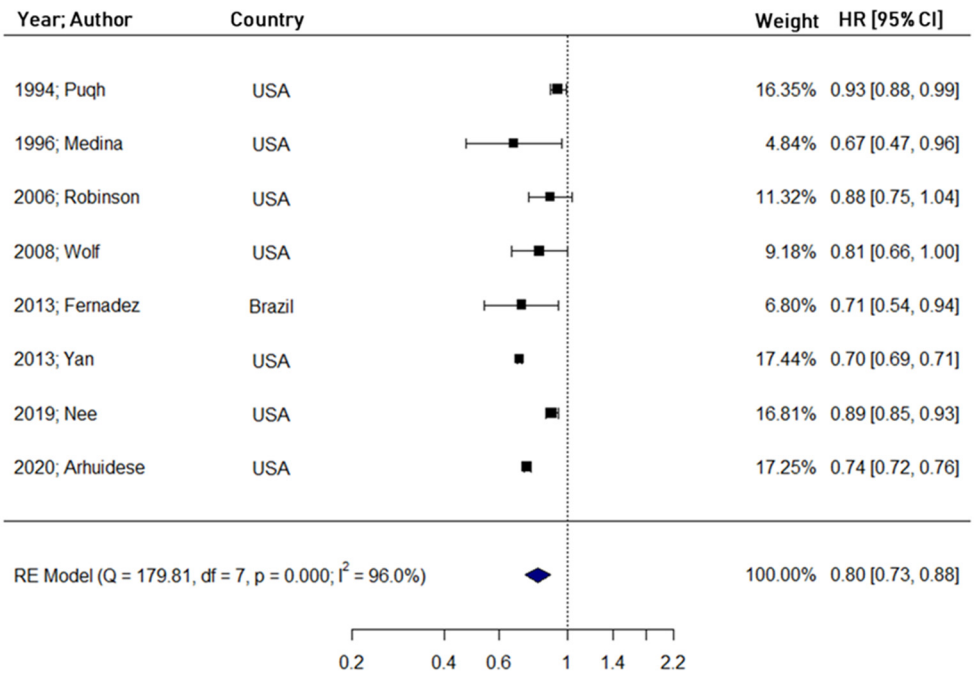
Suppl. Figure S24. Forest plot comparing Black and White patients (reference) regarding dialysis mortality.



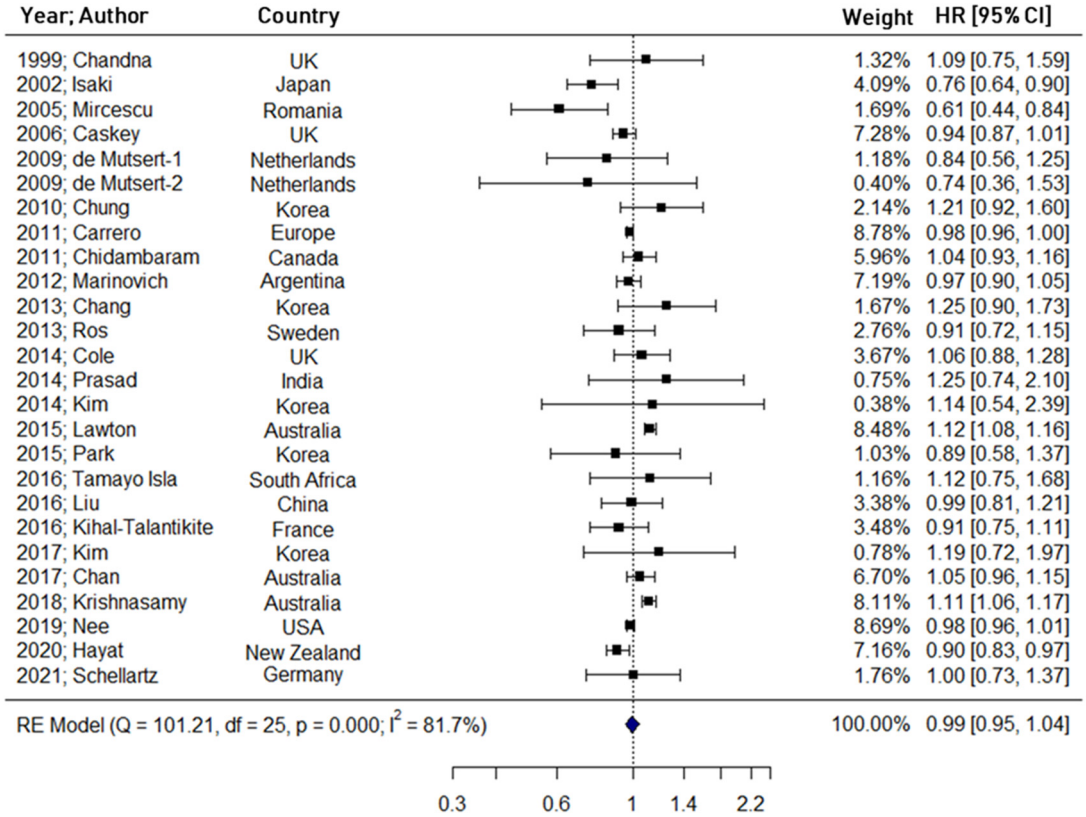
Suppl. Figure S25. Forest plot comparing Asian and White patients (reference) regarding dialysis mortality.



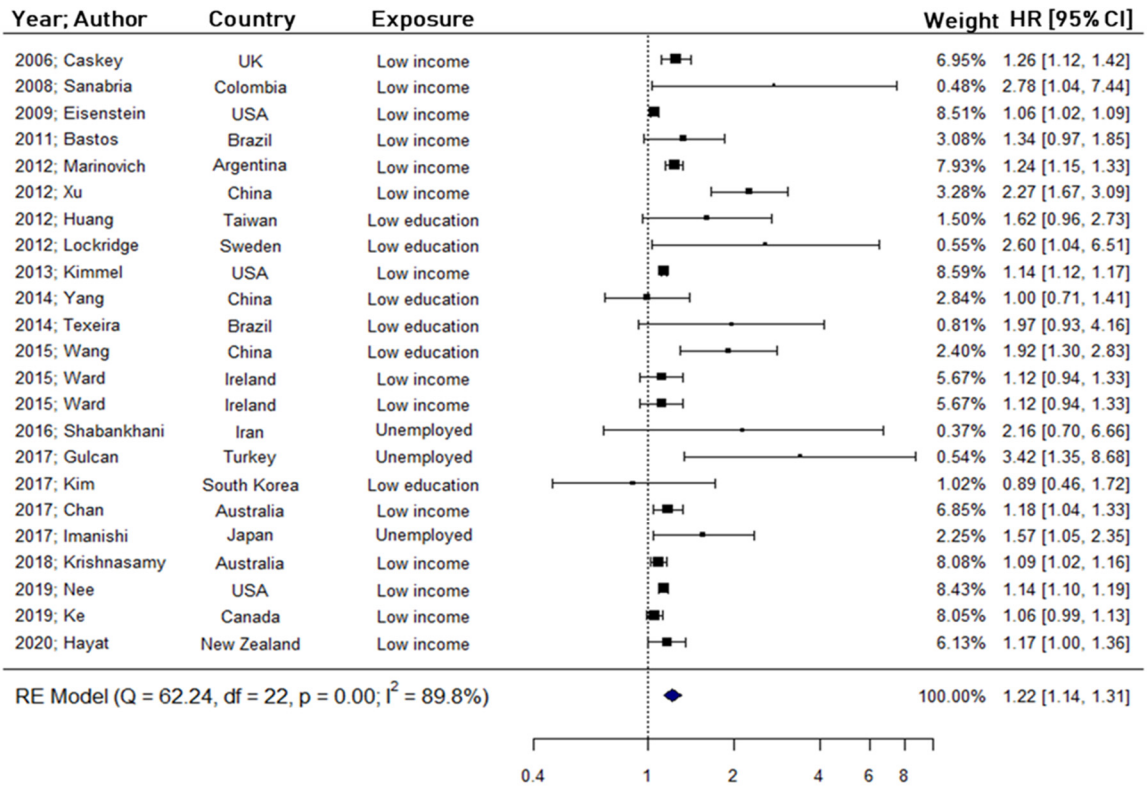
Suppl. Figure S26. Forest plot comparing Indigenous and White patients (reference) regarding dialysis mortality.



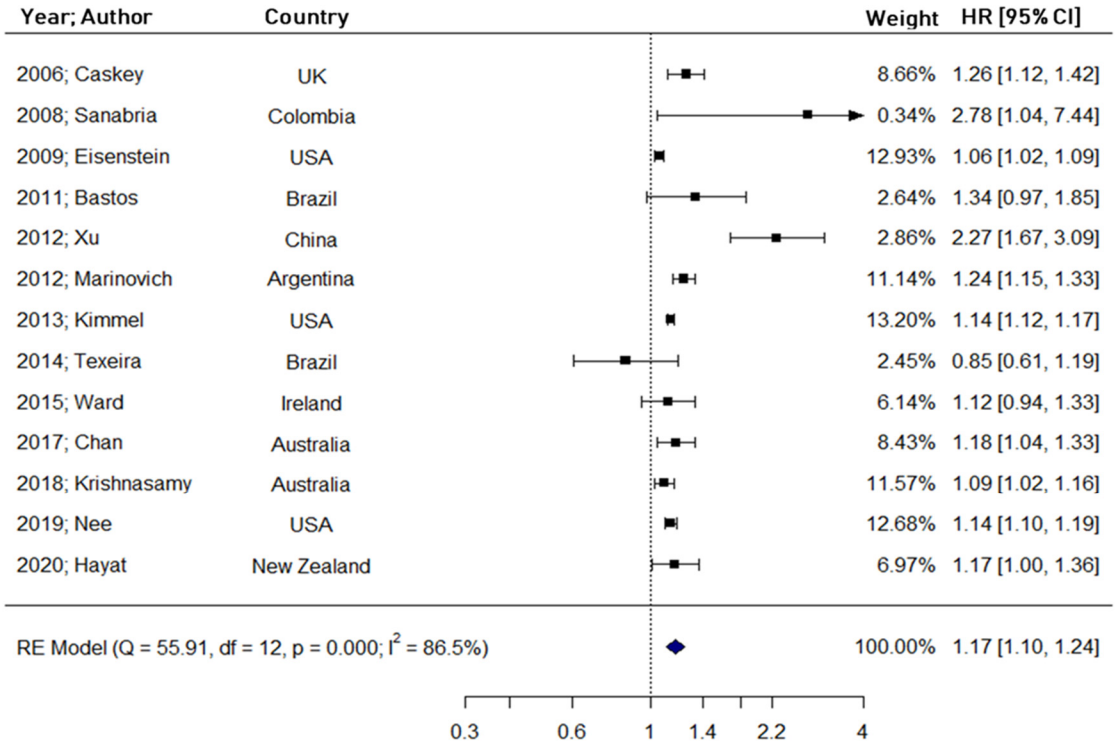
Suppl. Figure S27. Forest plot of comparing Hispanic and White patients (reference) regarding dialysis mortality.



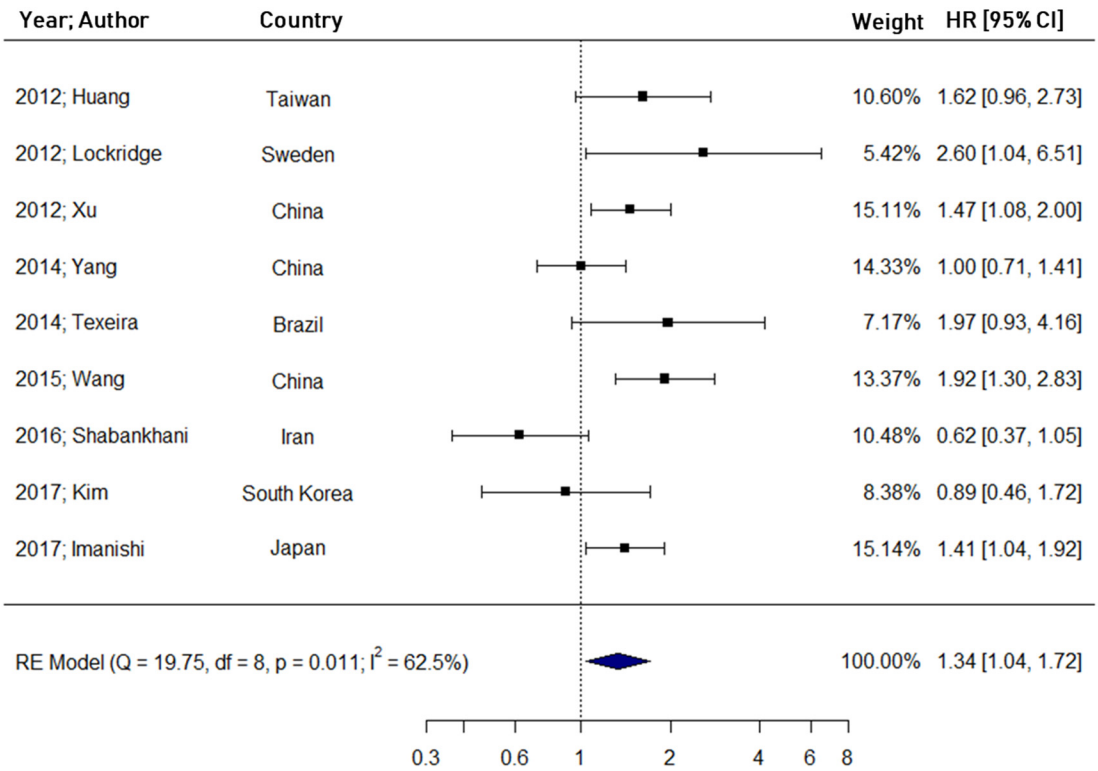
Suppl. Figure S28. Forest plot comparing female and male patients (reference) regarding dialysis mortality.



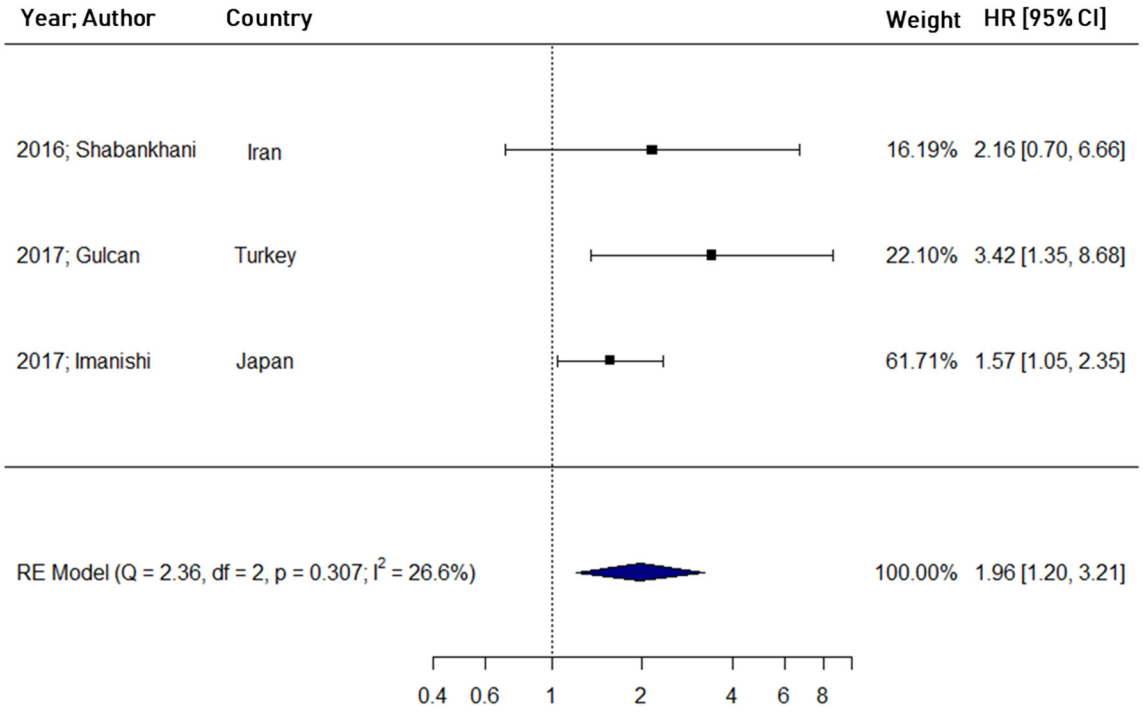
Suppl. Figure S29. Forest plot comparing low and high socioeconomic status patients (reference) regarding dialysis mortality.



Suppl. Figure S30. Forest plot comparing low- and high-income patients (reference) regarding dialysis mortality.

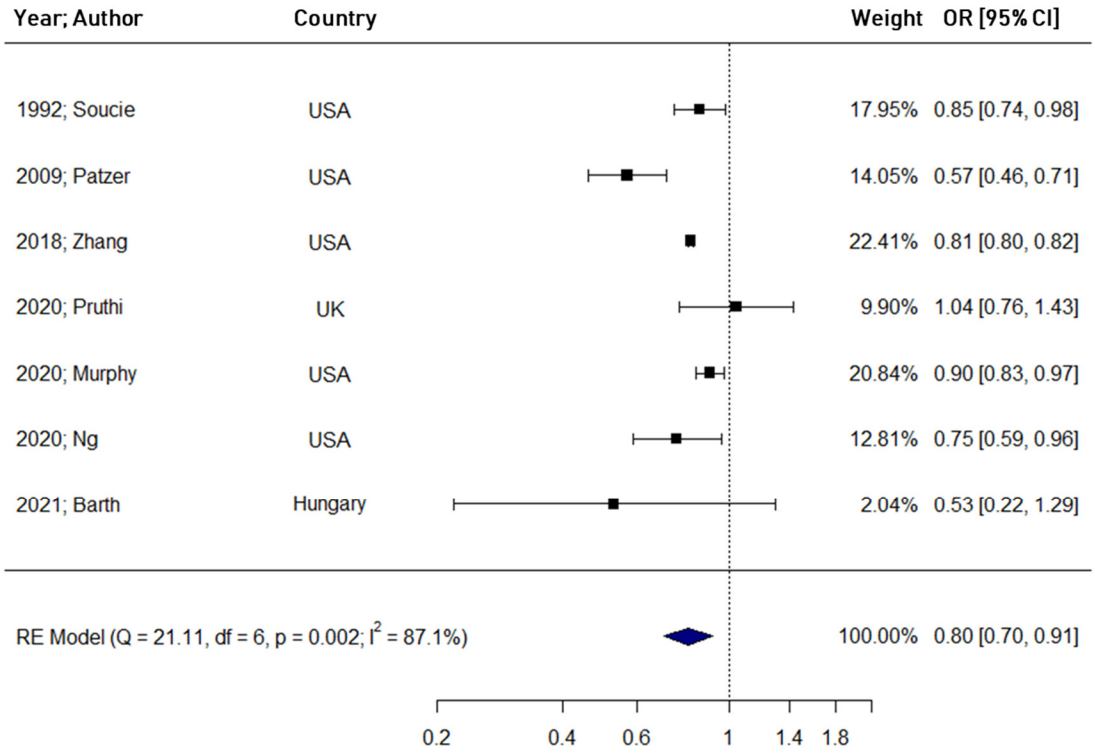


Suppl. Figure S31. Forest plot comparing low and high education patients (reference) regarding on dialysis mortality.

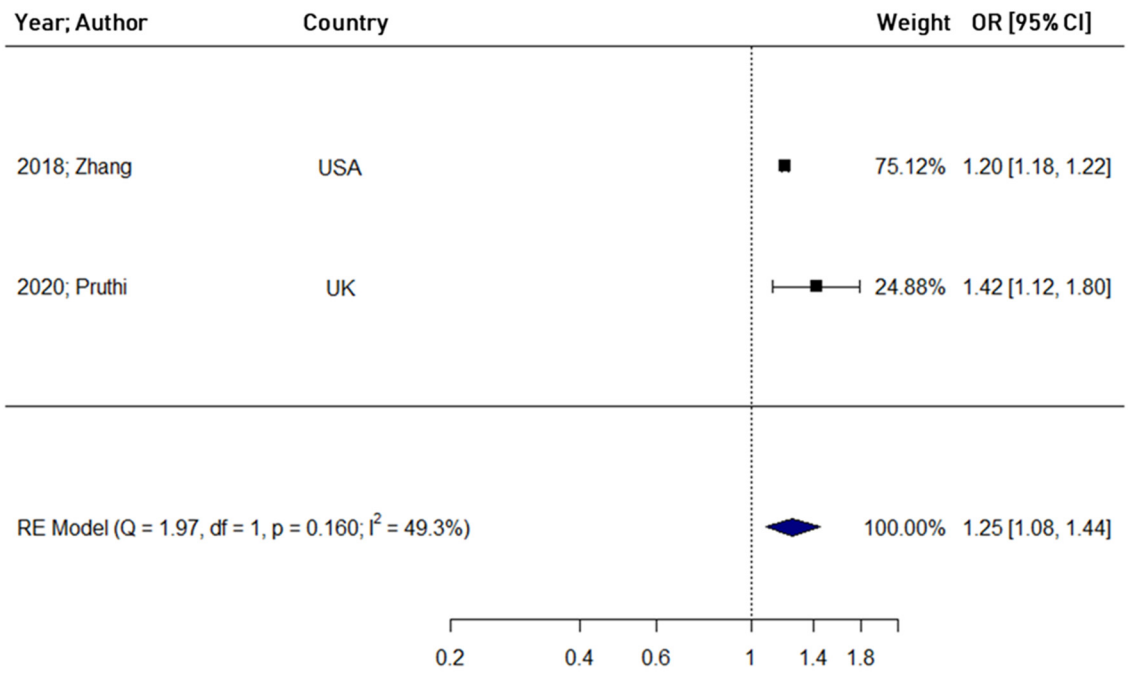


Suppl. Figure S32. Forest plot comparing unemployed and employed patients (reference) regarding dialysis mortality.

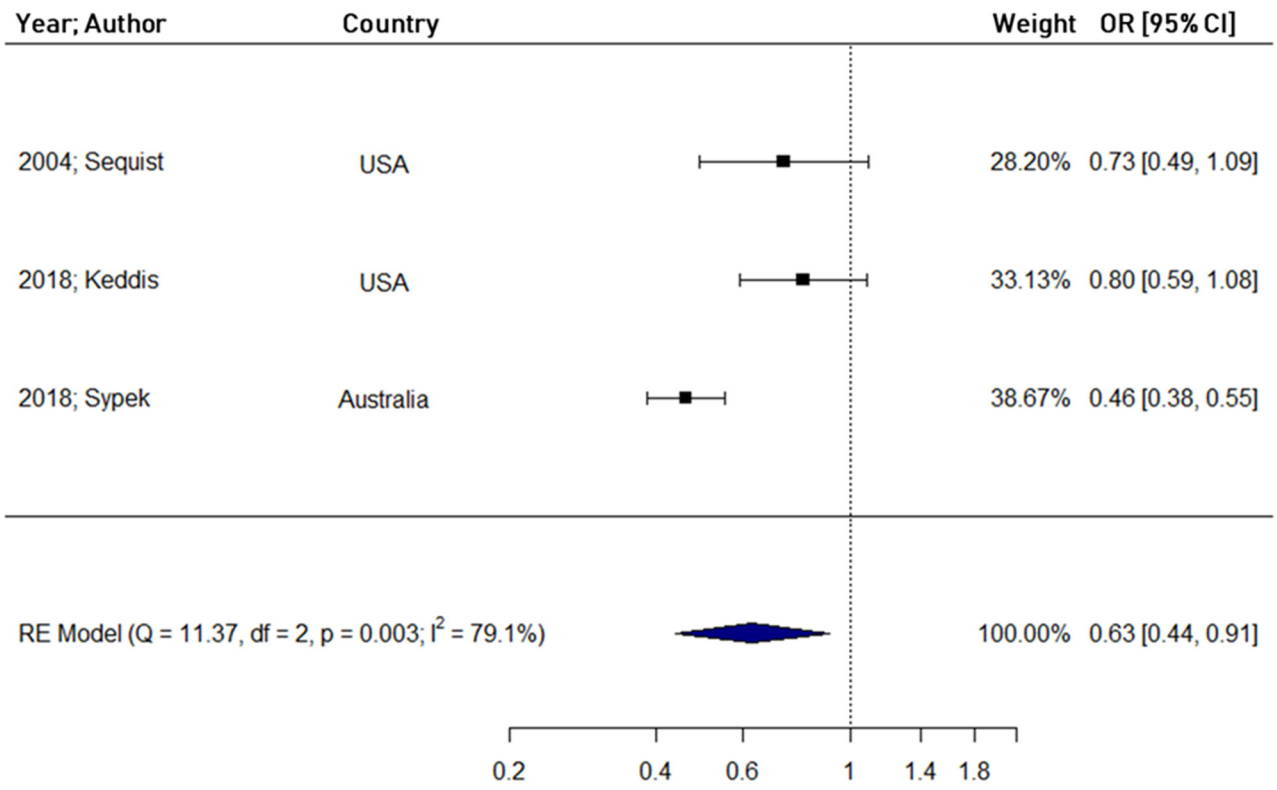
5.9. Waitlisting



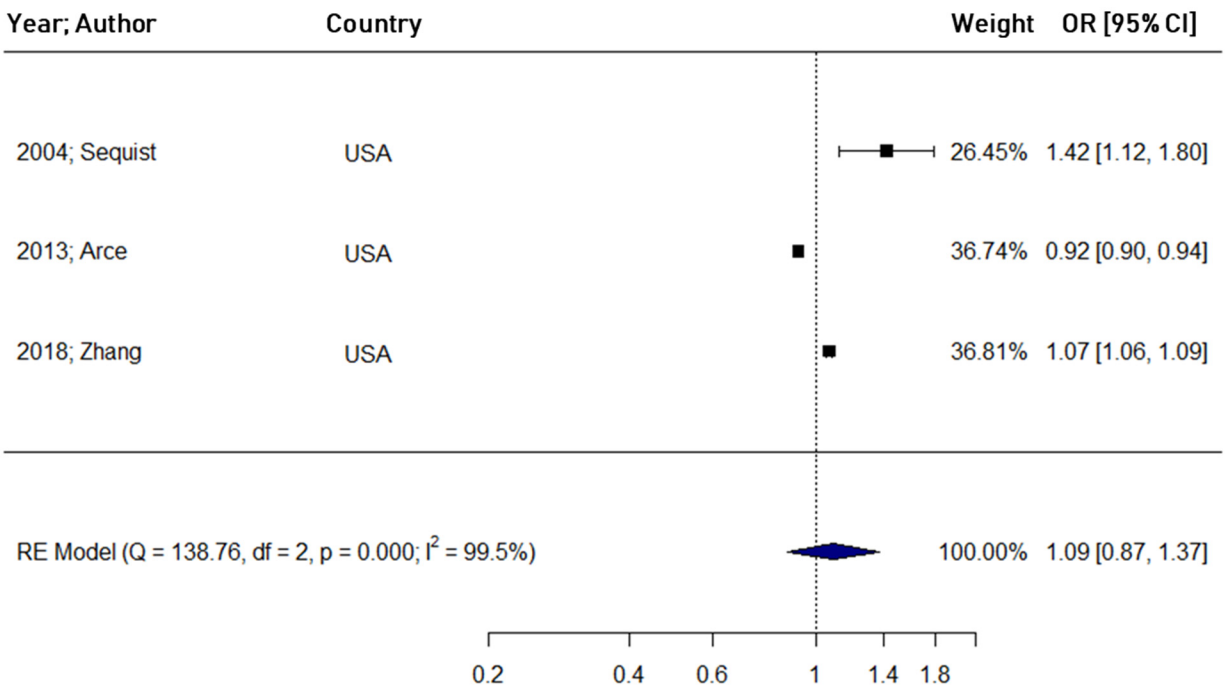
Suppl. Figure S33. Forest plot comparing Black and White patients (reference) regarding waitlisting.



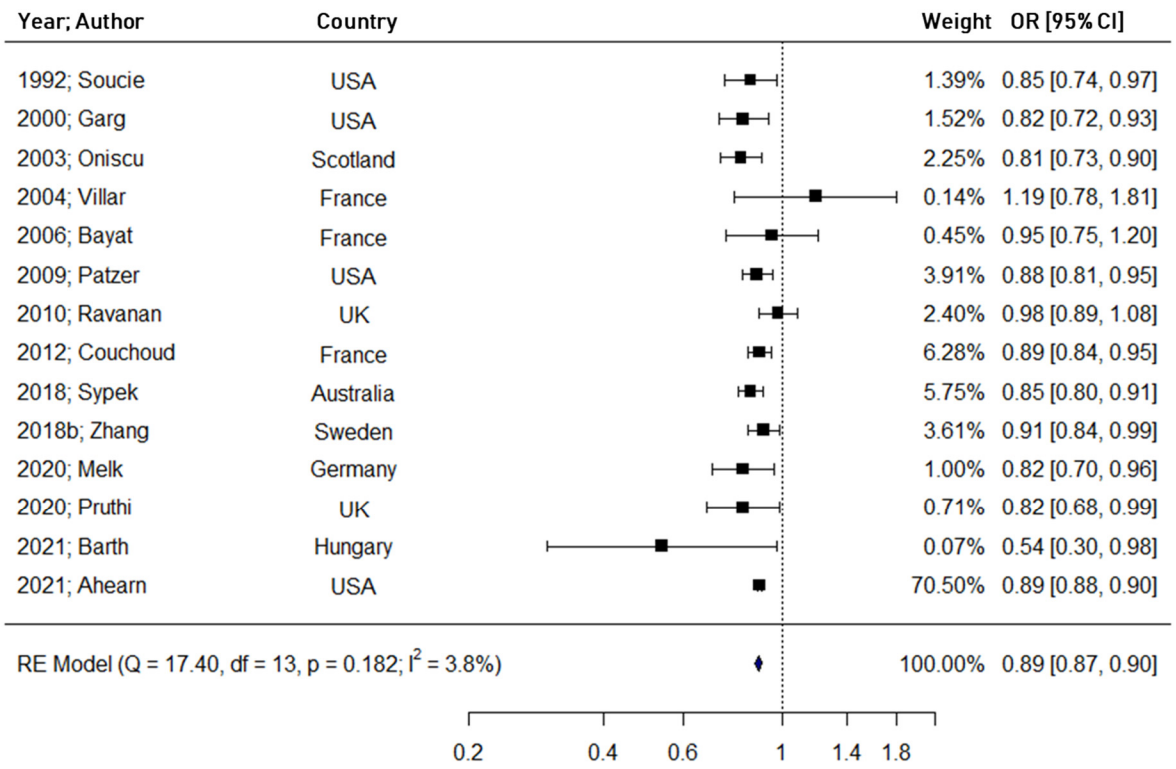
Suppl. Figure S34. Forest plot comparing Asian and White patients (reference) regarding waitlisting.



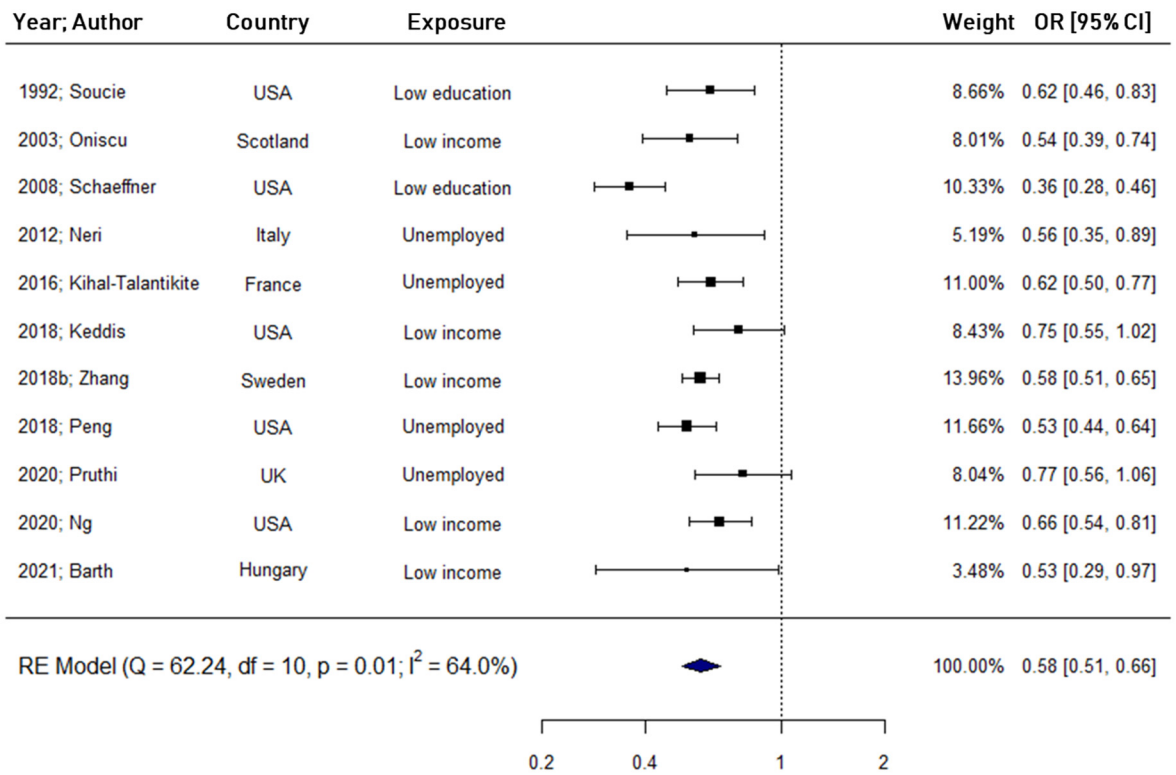
Suppl. Figure S35. Forest plot comparing Indigenous and White patients (reference) regarding waitlisting.



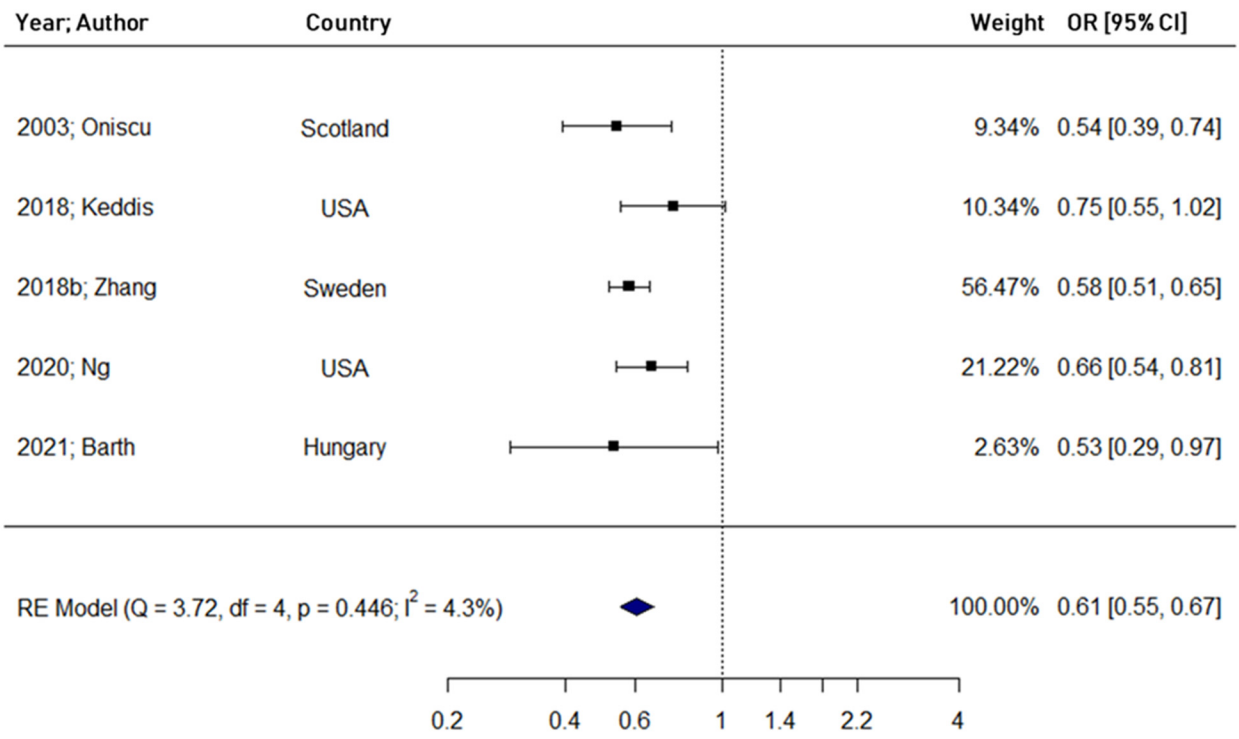
Suppl. Figure S36. Forest plot comparing Hispanic and White patients (reference) regarding waitlisting.



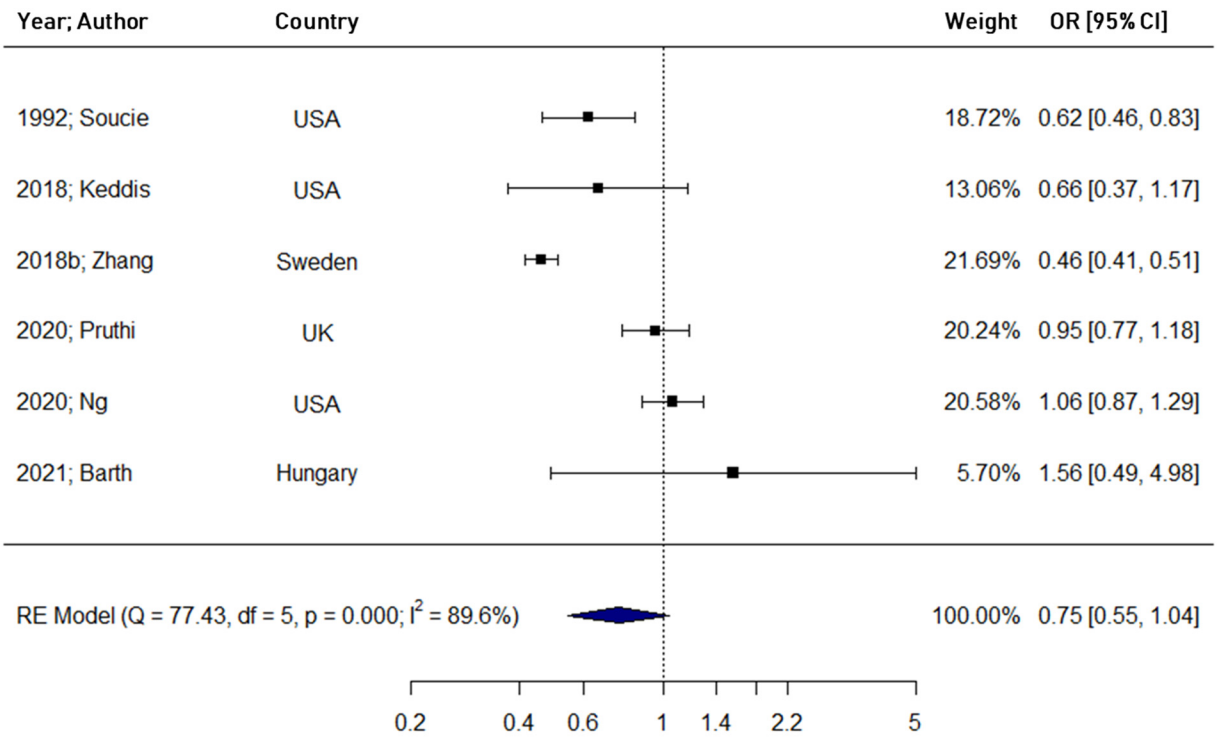
Suppl. Figure S37. Forest plot comparing female and male patients (reference) regarding waitlisting.



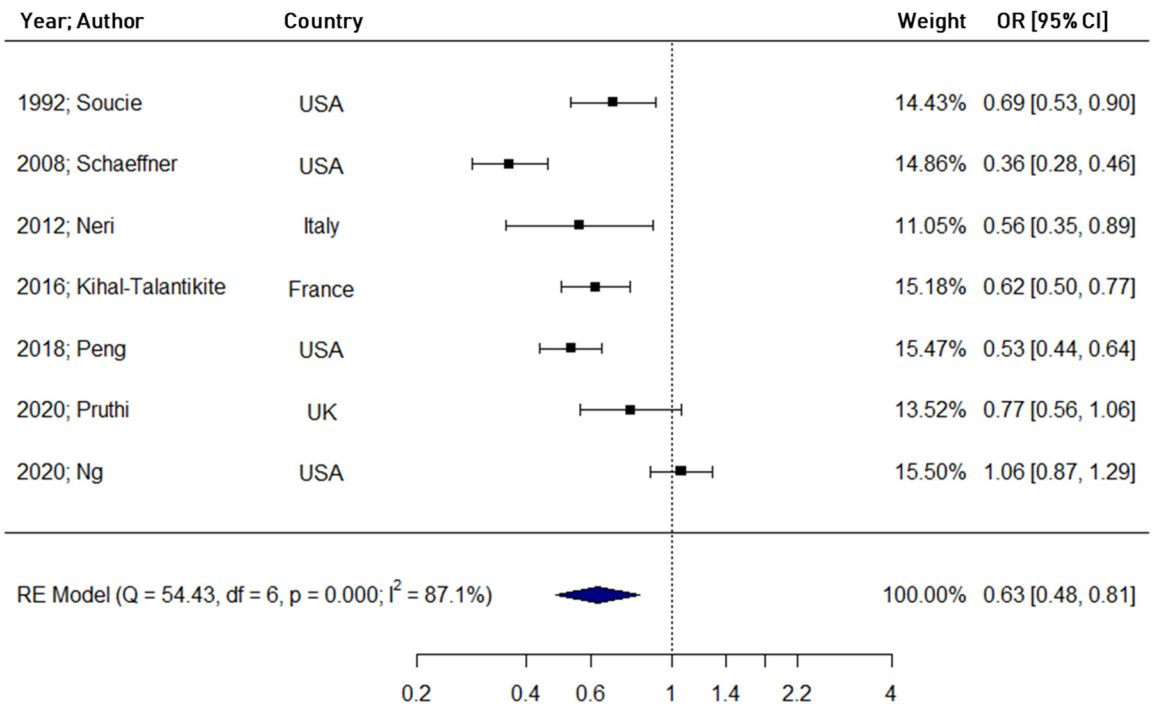
Suppl. Figure S38. Forest plot comparing low and high socioeconomic status patients (reference) regarding waitlisting.



Suppl. Figure S39. Forest plot comparing low- and high-income patients (reference) regarding waitlisting.

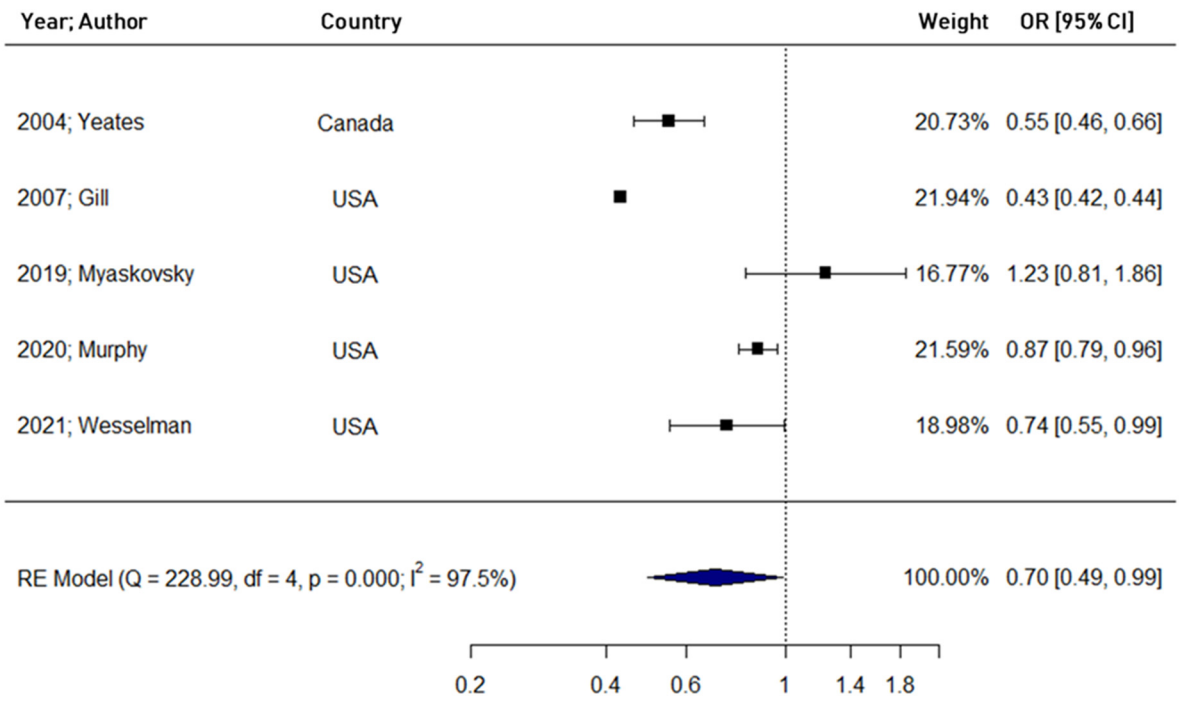


Suppl. Figure S40. Forest plot comparing low and high education patients (reference) regarding waitlisting.

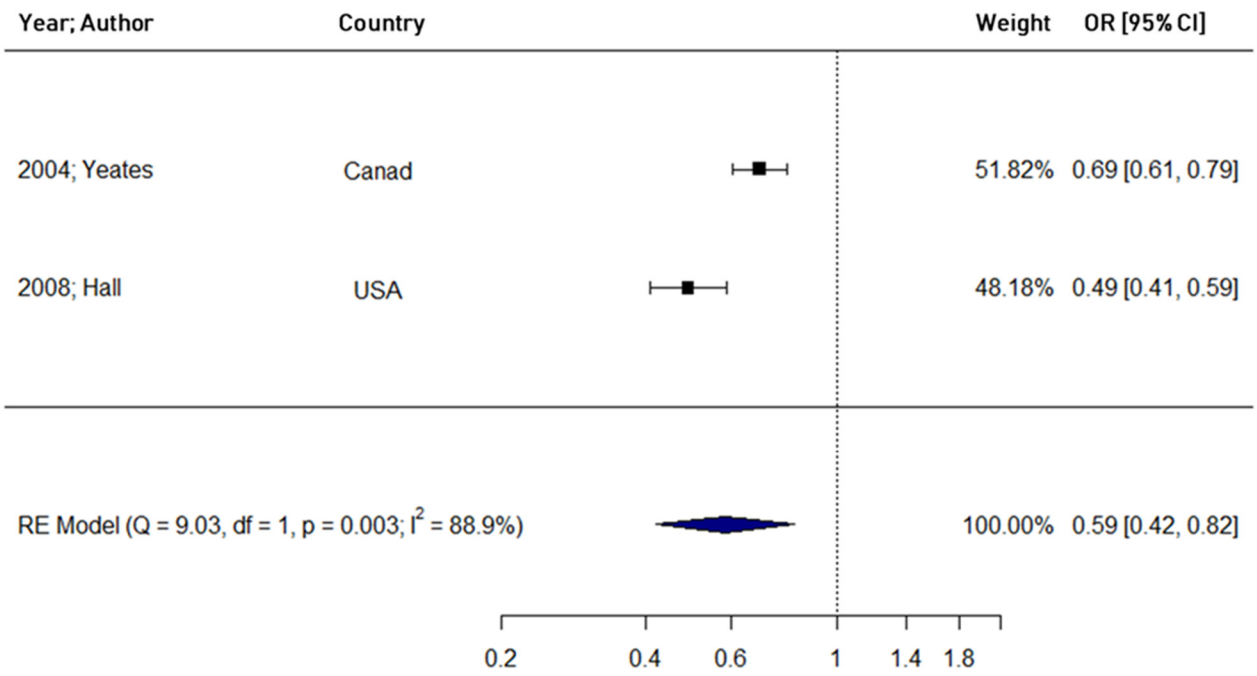


Suppl. Figure S41. Forest plot comparing unemployed and employed patients (reference) regarding on waitlisting.

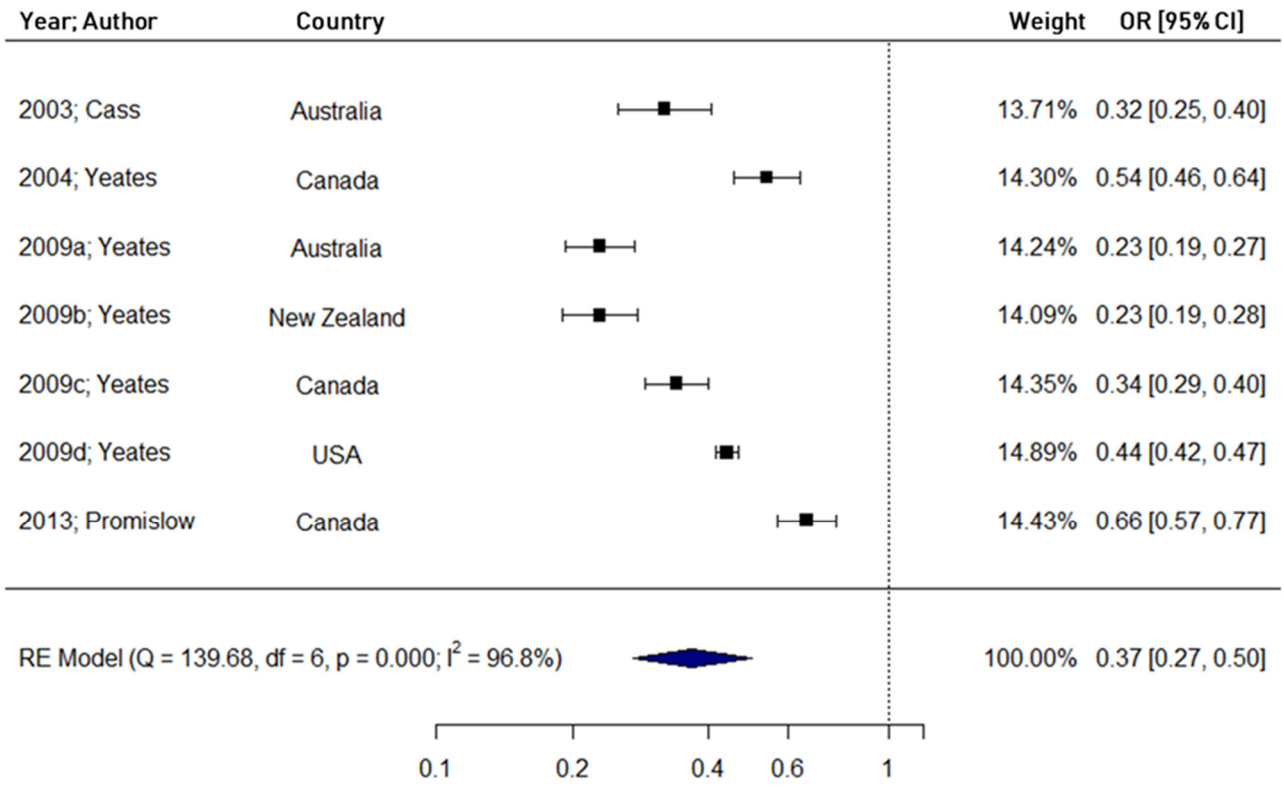
5.10. Kidney transplantation



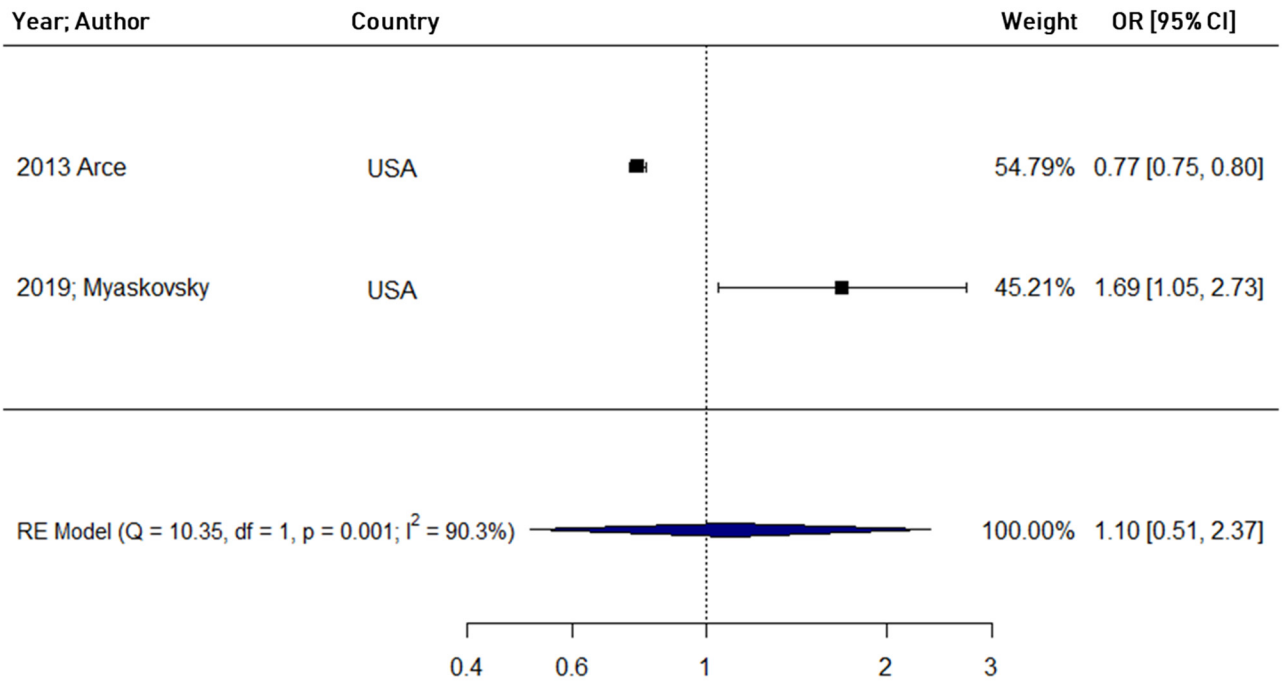
Suppl. Figure S42. Forest plot comparing Black and White patients (reference) regarding kidney transplantation.



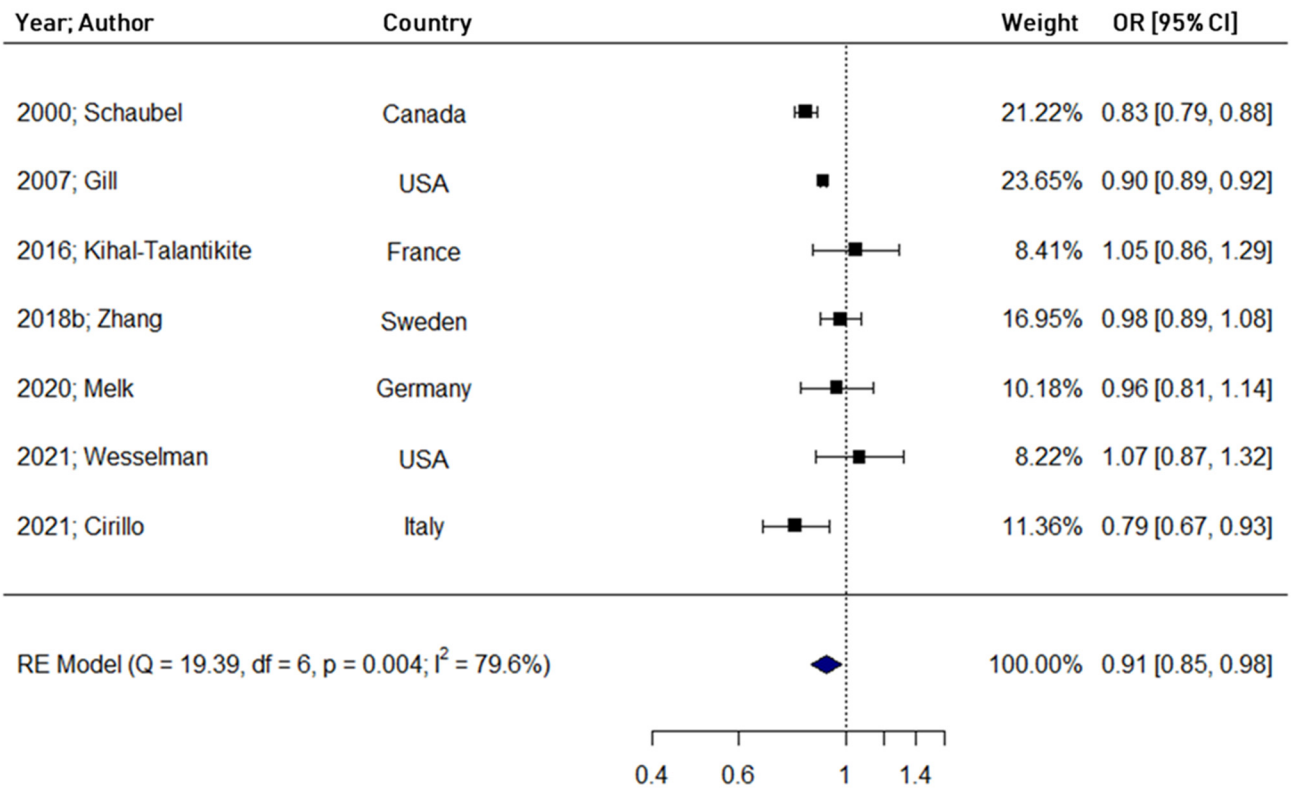
Suppl. Figure S43. Forest plot comparing Asian and White patients (reference) regarding kidney transplantation.



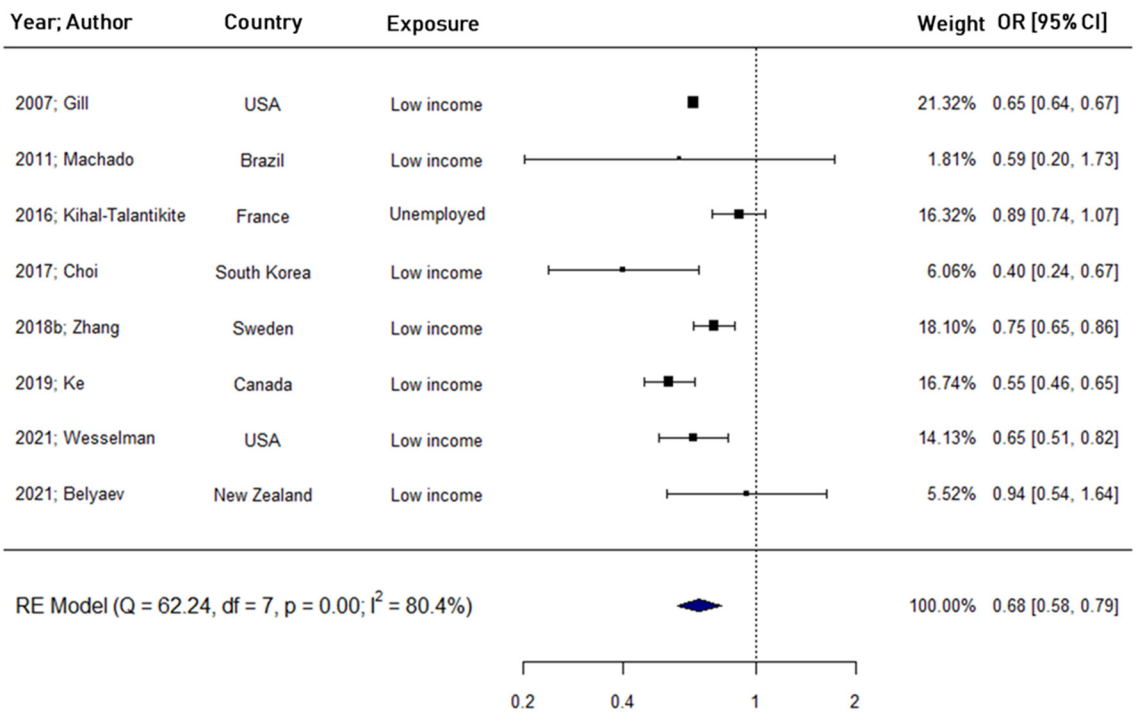
Suppl. Figure S44. Forest plot comparing Indigenous and White patients (reference) regarding kidney transplantation.



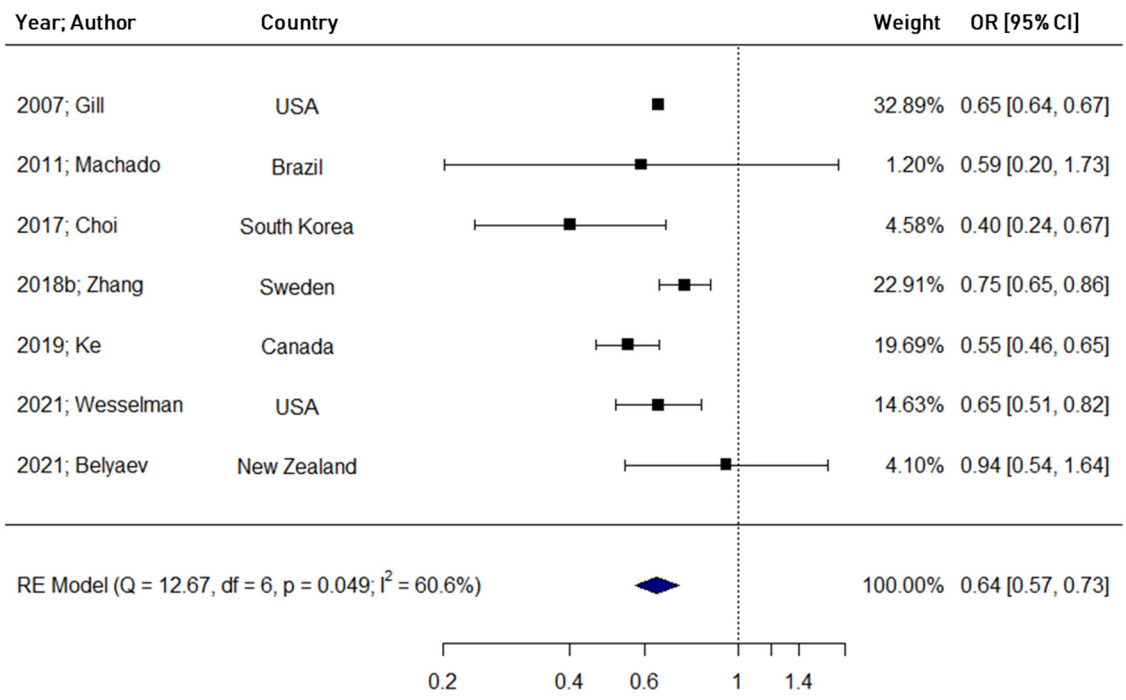
Suppl. Figure S45. Forest plot comparing Hispanic and White patients (reference) regarding kidney transplantation.



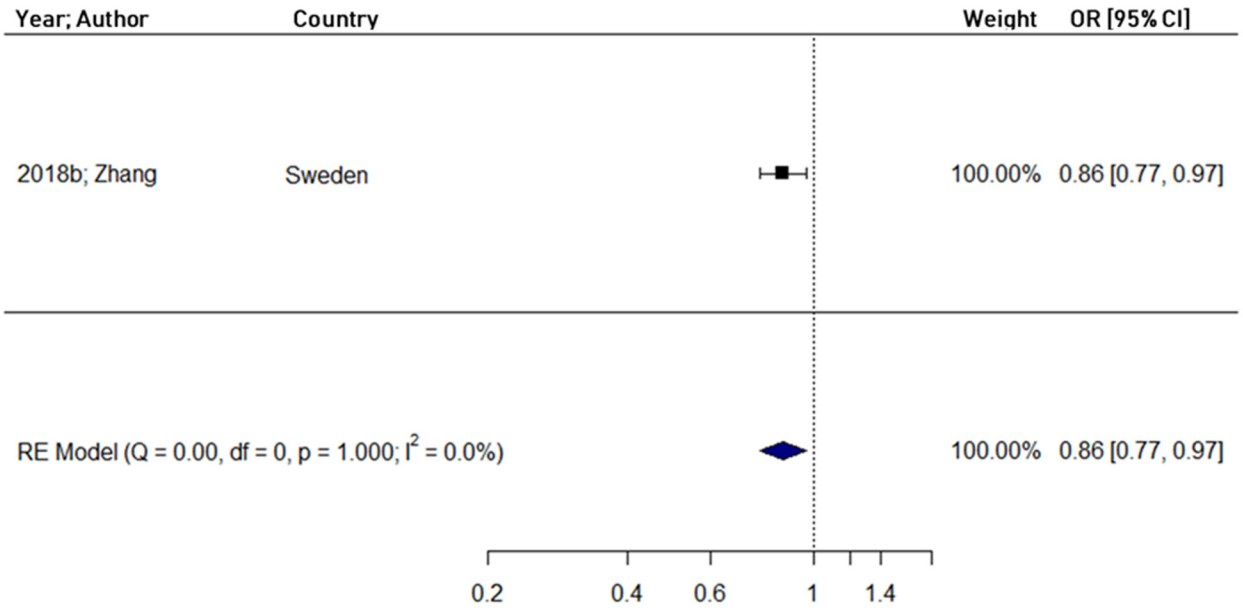
Suppl. Figure S46. Forest plot comparing female and male patients (reference) regarding kidney transplantation.



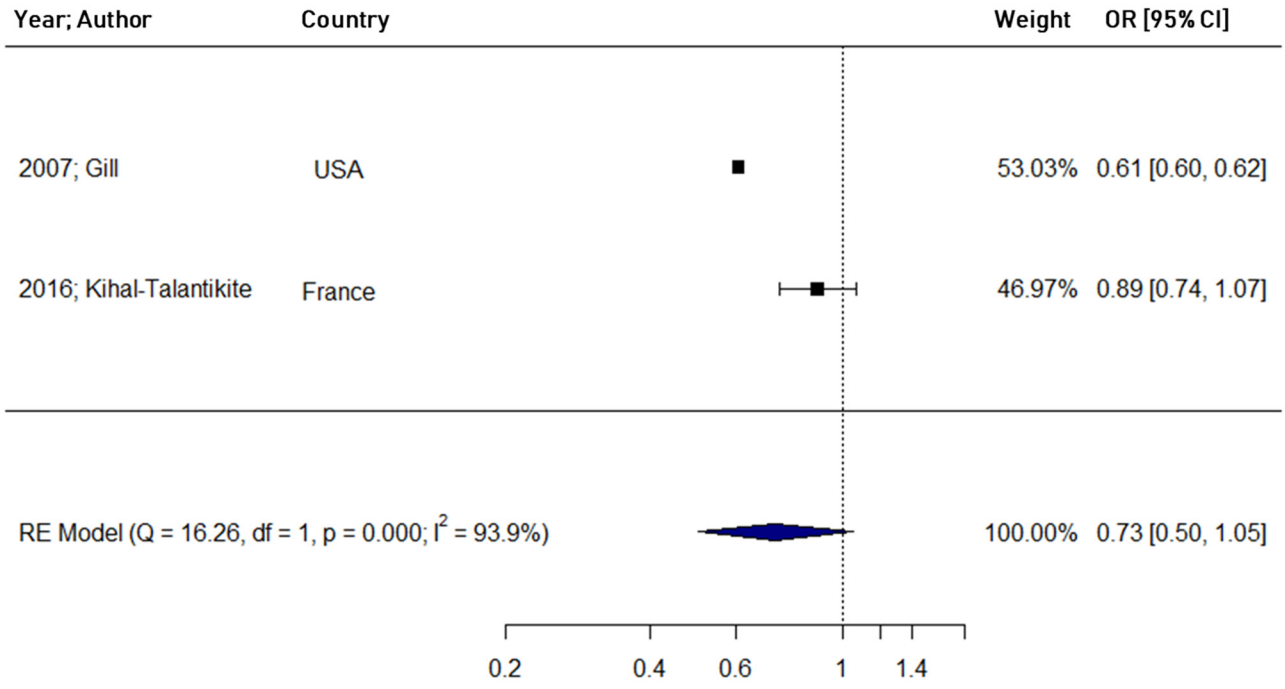
Suppl. Figure S47. Forest plot comparing low and high socioeconomic status patients (reference) regarding kidney transplantation.



Suppl. Figure S48. Forest plot comparing low- and high- income patients (reference) regarding kidney transplantation.

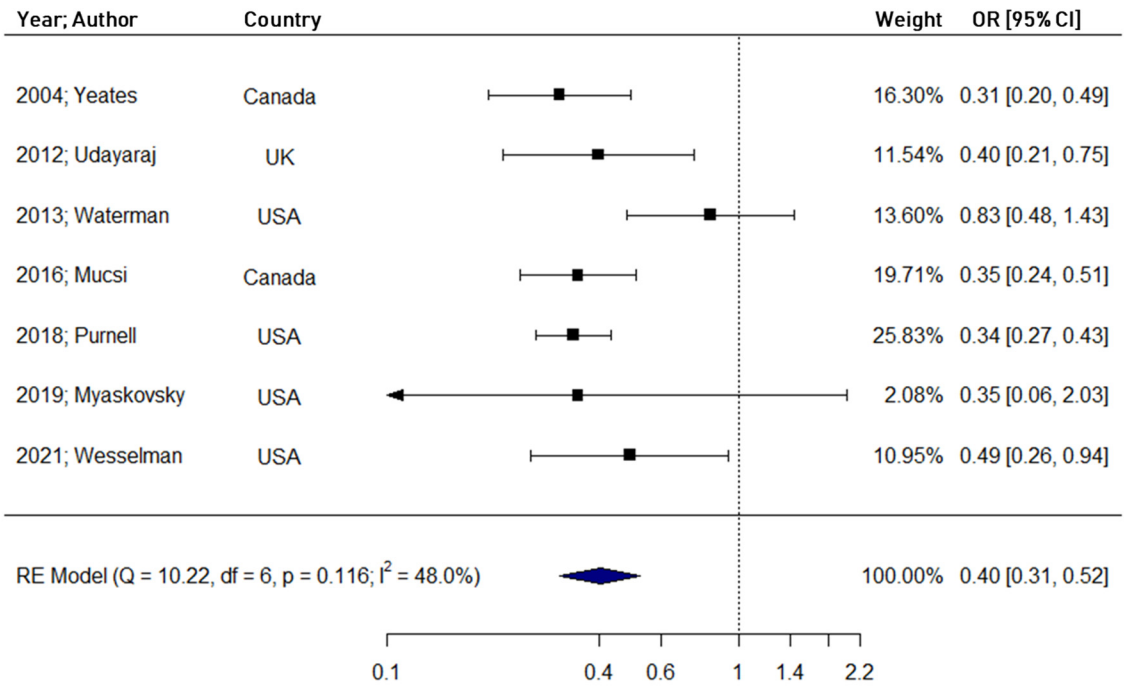


Suppl. Figure S49. Forest plot comparing low and high education patients (reference) regarding kidney transplantation.

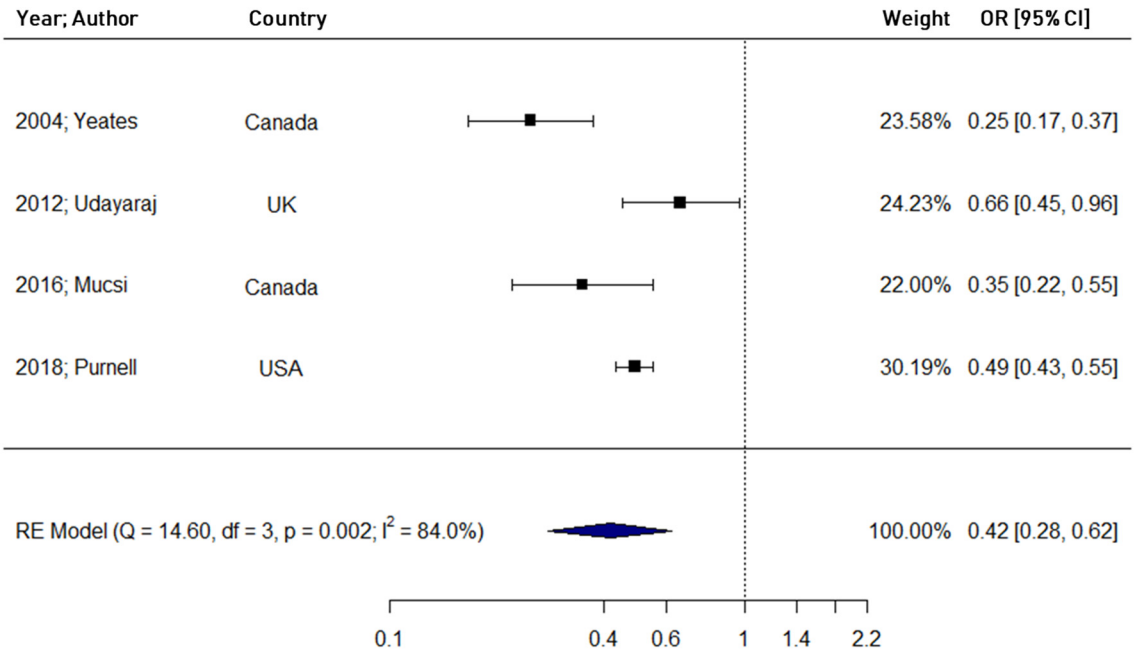


Suppl. Figure S50. Forest plot comparing unemployed and employed patients (reference) regarding kidney transplantation.

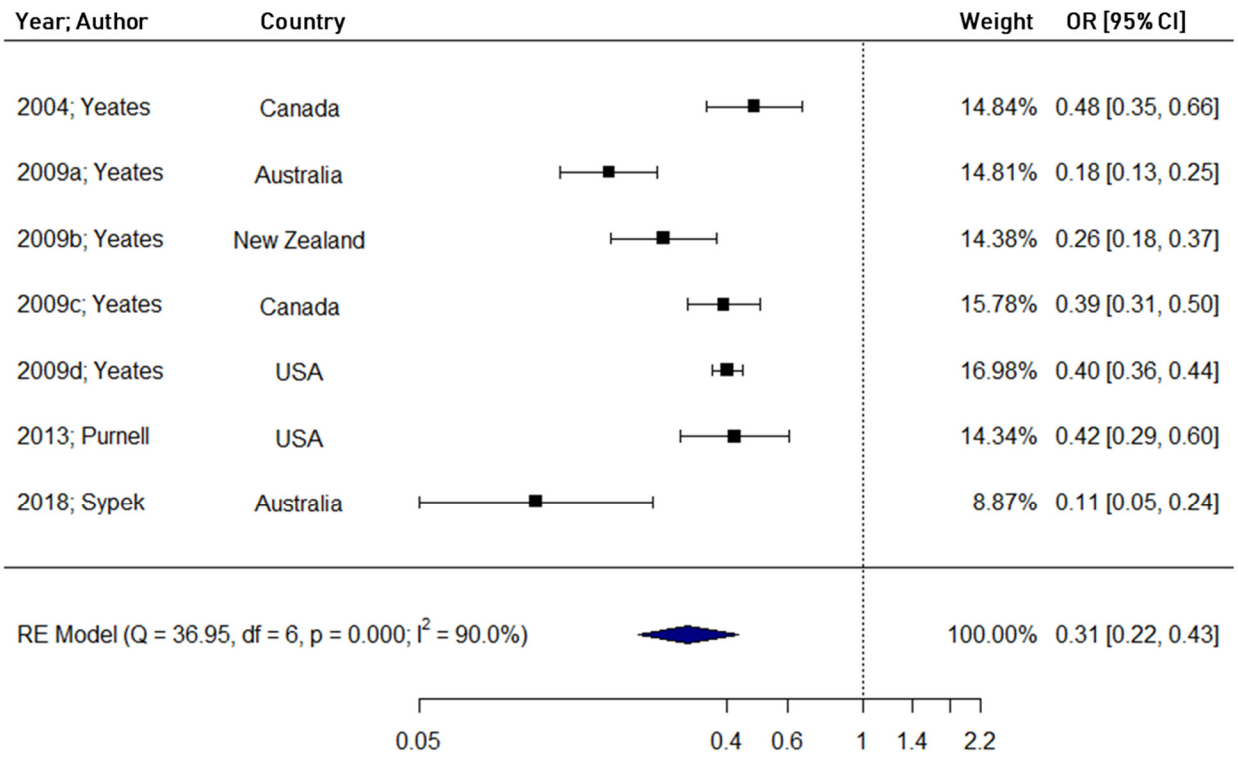
5.11. Living-donor transplantation



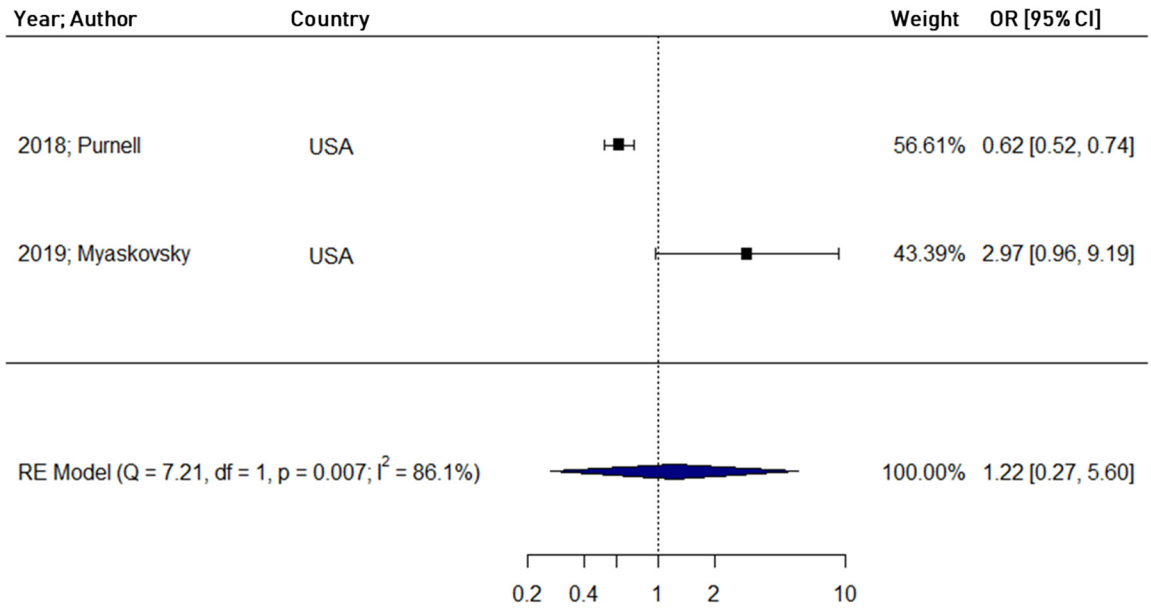
Suppl. Figure S51. Forest plot comparing Black and White patients (reference) regarding living-donor transplantation.



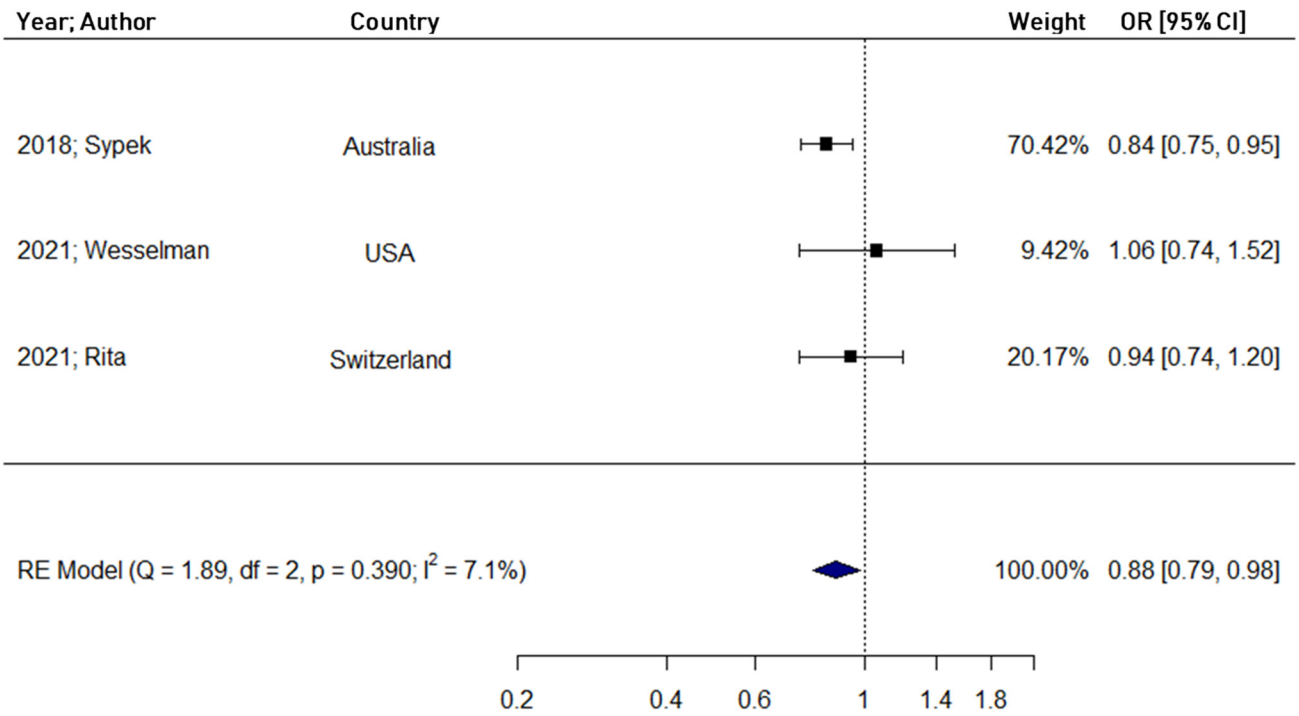
Suppl. Figure S52. Forest plot comparing Asian and White patients (reference) regarding living-donor transplantation.



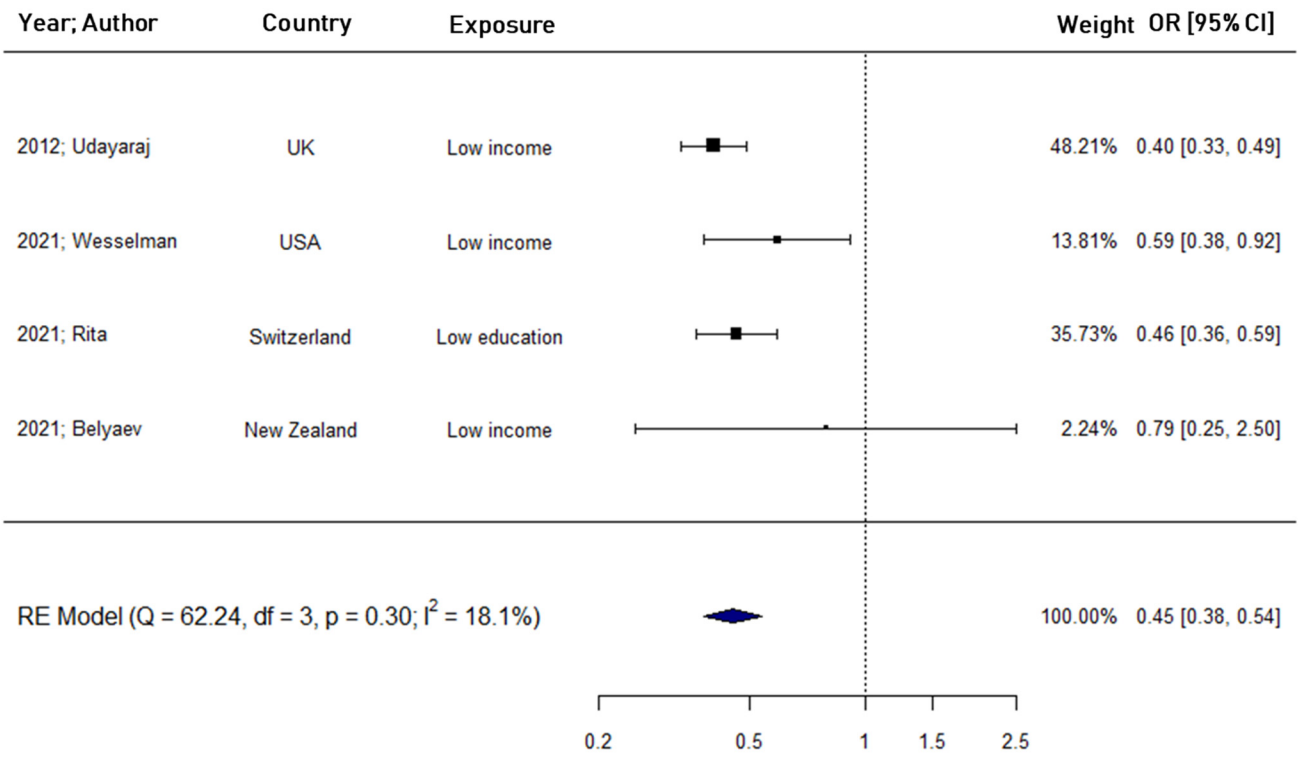
Suppl. Figure S53. Forest plot comparing Indigenous and White patients (reference) regarding living-donor transplantation.



Suppl. Figure S54. Forest plot comparing Hispanic and White patients (reference) regarding living-donor transplantation.

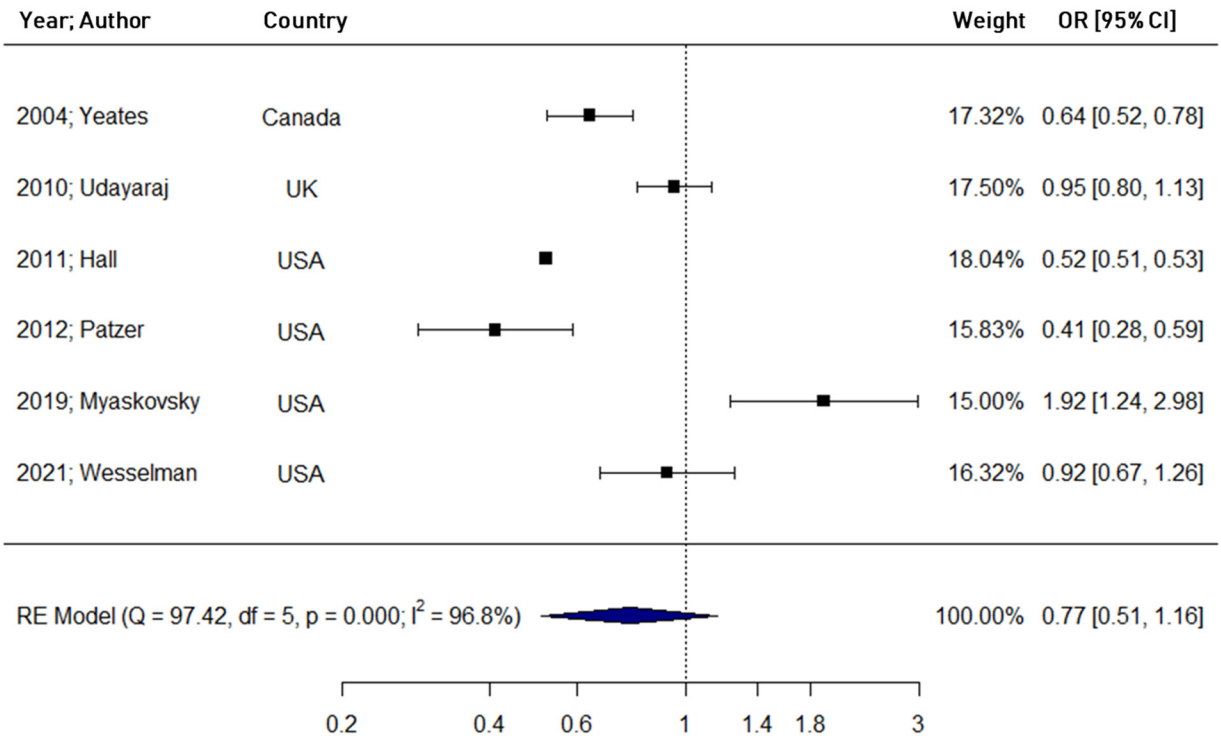


Suppl. Figure S55. Forest plot comparing female and male patients (reference) regarding living-donor transplantation.

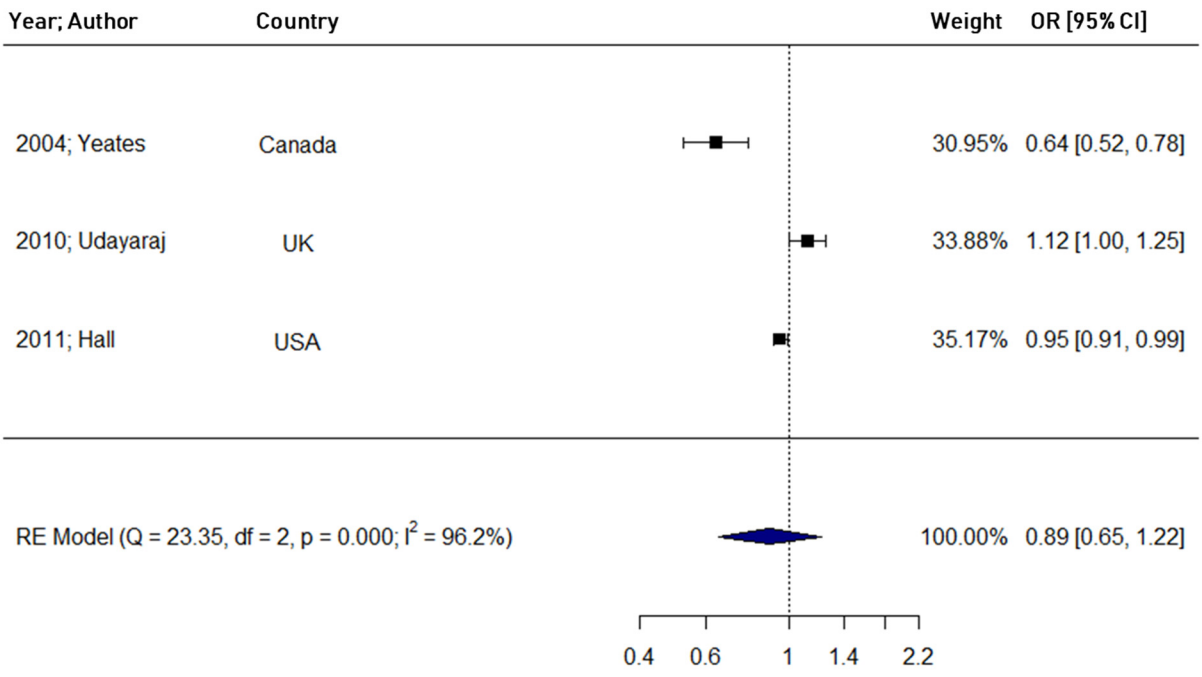


Suppl. Figure S56. Forest plot comparing low and high socioeconomic status patients (reference) regarding living-donor transplantation.

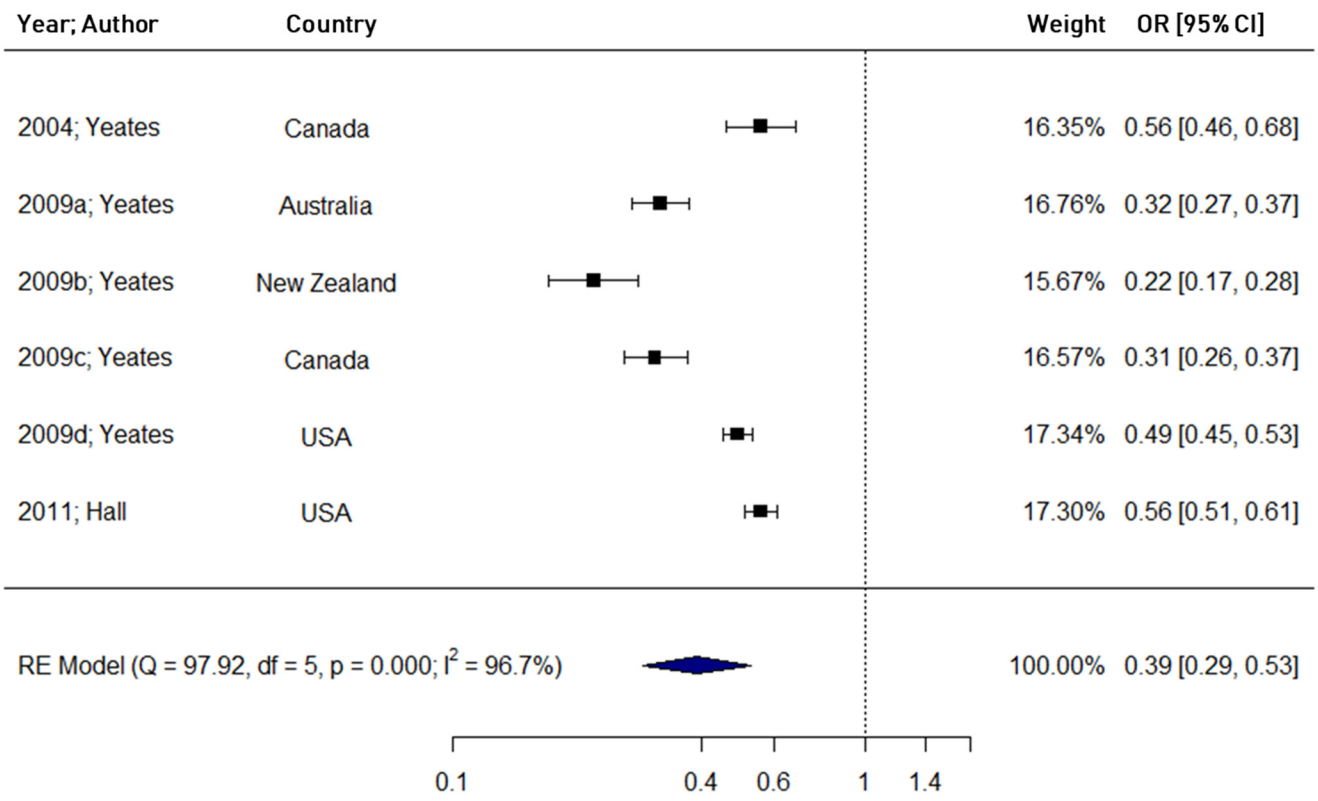
5.12. Deceased-donor transplantation



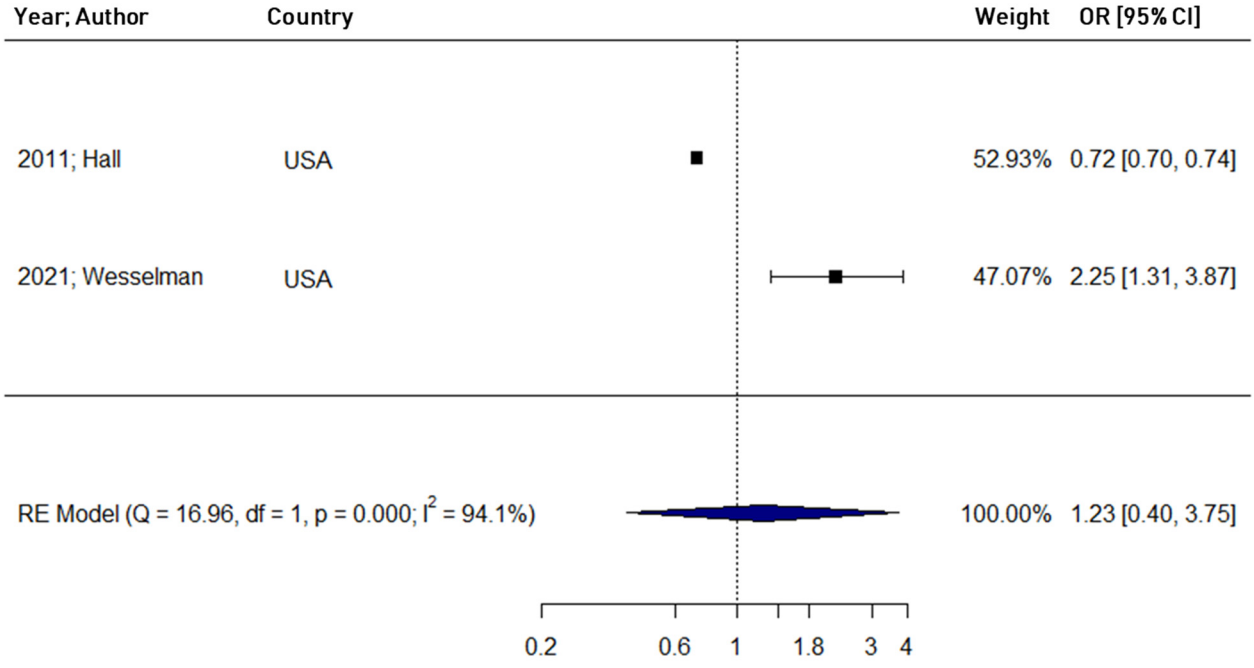
Suppl. Figure S57. Forest plot comparing Black and White patients (reference) regarding deceased-donor transplantation.



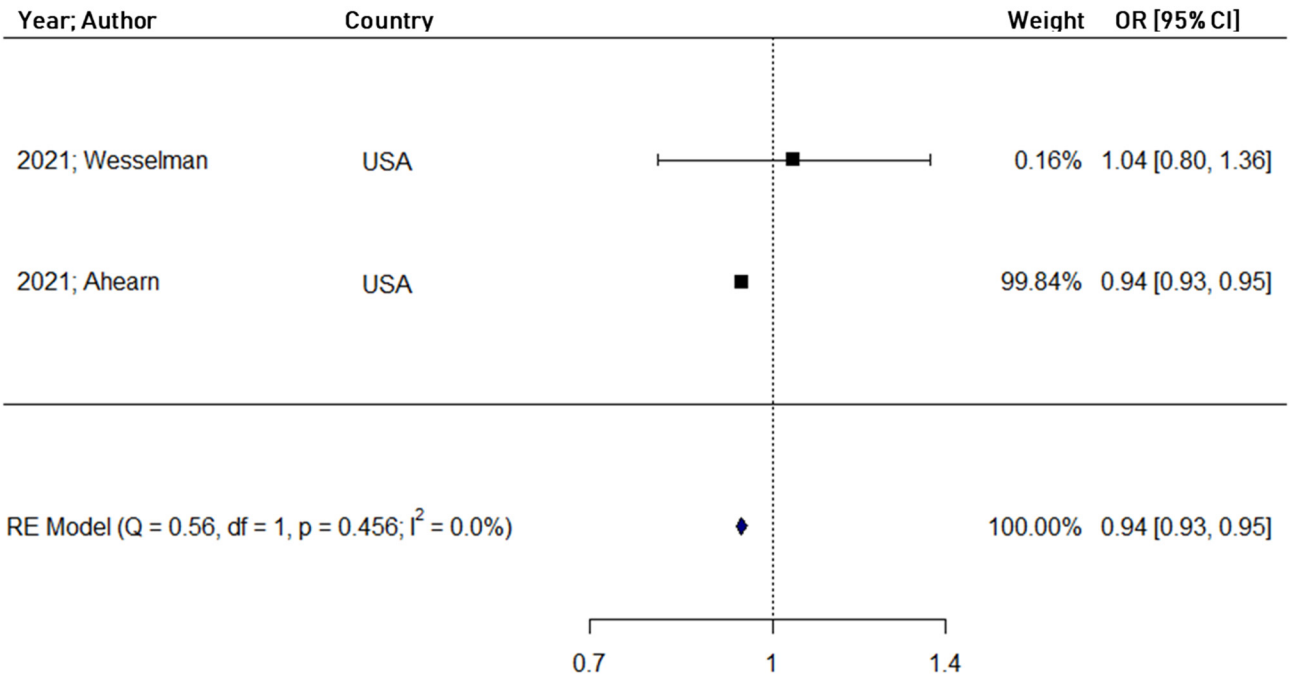
Suppl. Figure S58. Forest plot comparing Asian and White patients (reference) regarding deceased-donor transplantation.



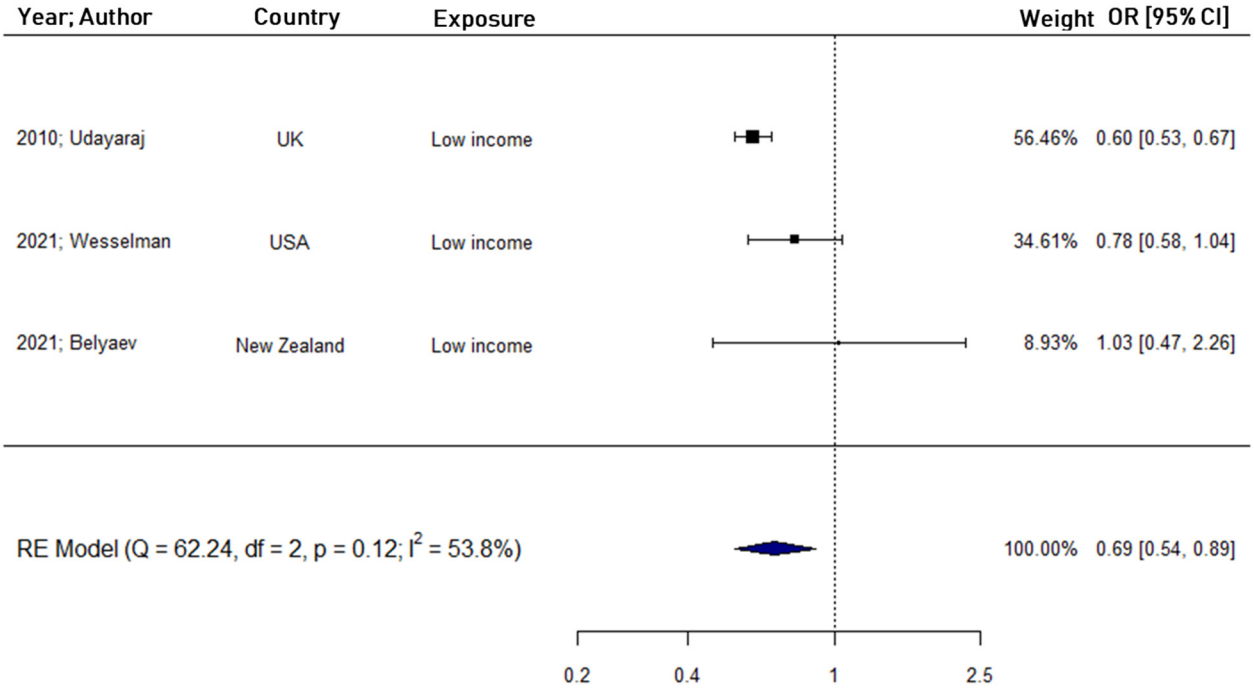
Suppl. Figure S59. Forest plot comparing Indigenous and White patients (reference) regarding deceased-donor transplantation.



Suppl. Figure S60. Forest plot comparing Hispanic and White patients (reference) regarding deceased-donor transplantation.

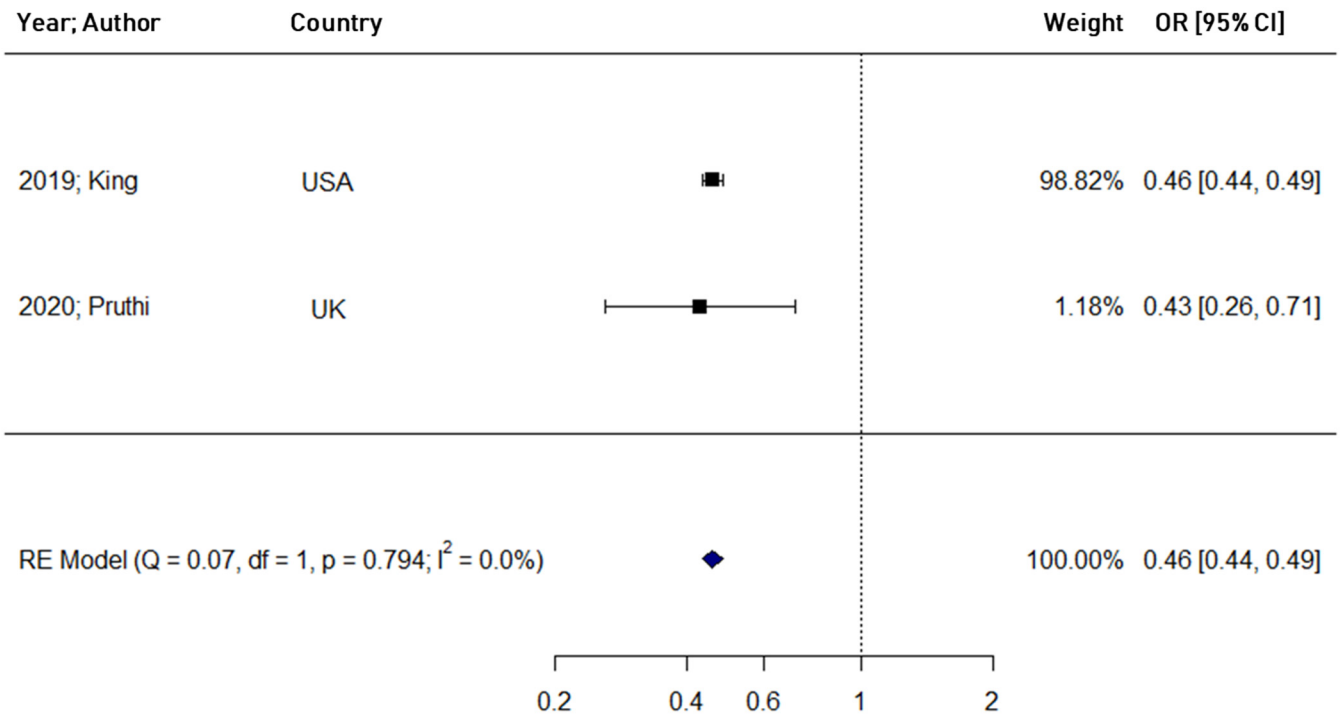


Suppl. Figure S61. Forest plot comparing female and male patients (reference) regarding deceased-donor transplantation.

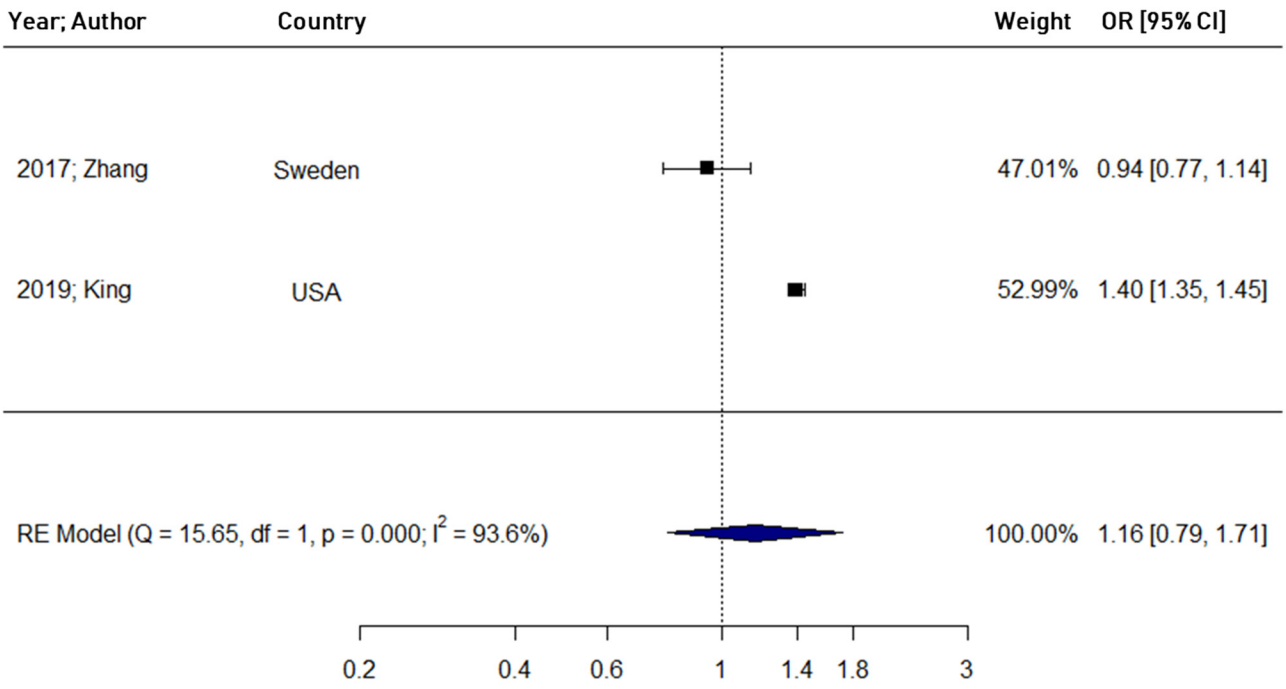


Suppl. Figure S62. Forest plot comparing low and high socioeconomic status patients (reference) regarding deceased-donor transplantation.

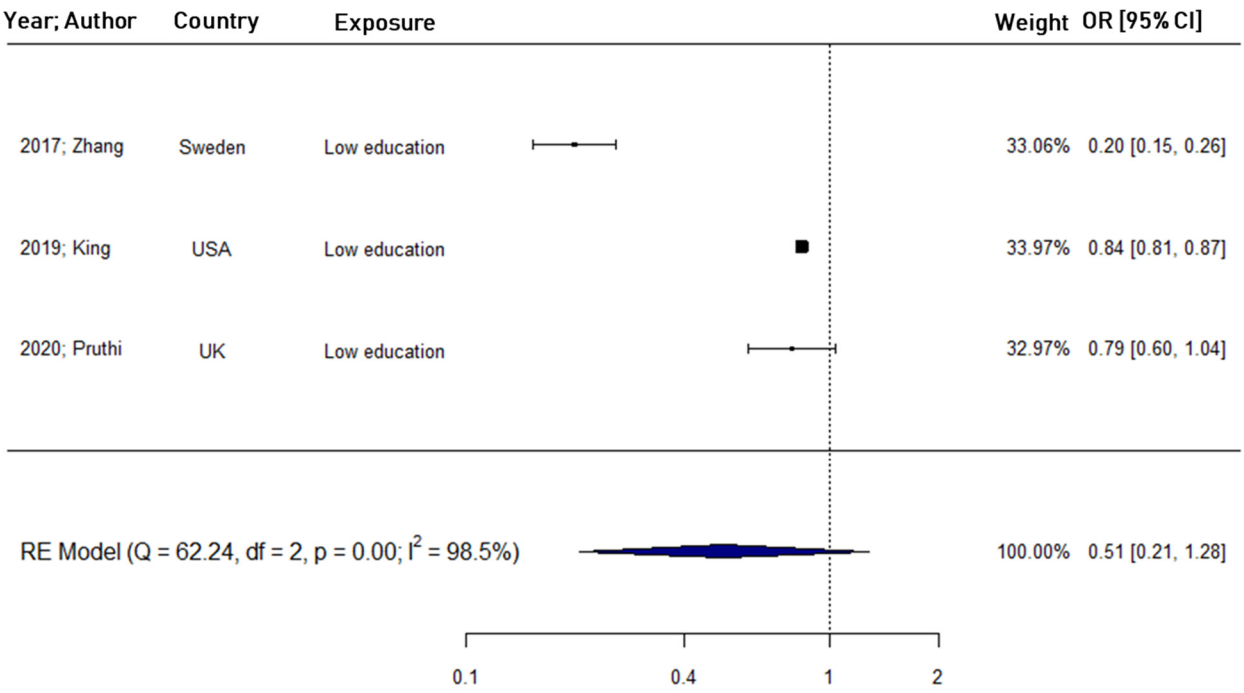
5.13. Preemptive transplantation



Suppl. Figure S63. Forest plot comparing Black and White patients (reference) regarding preemptive transplantation.

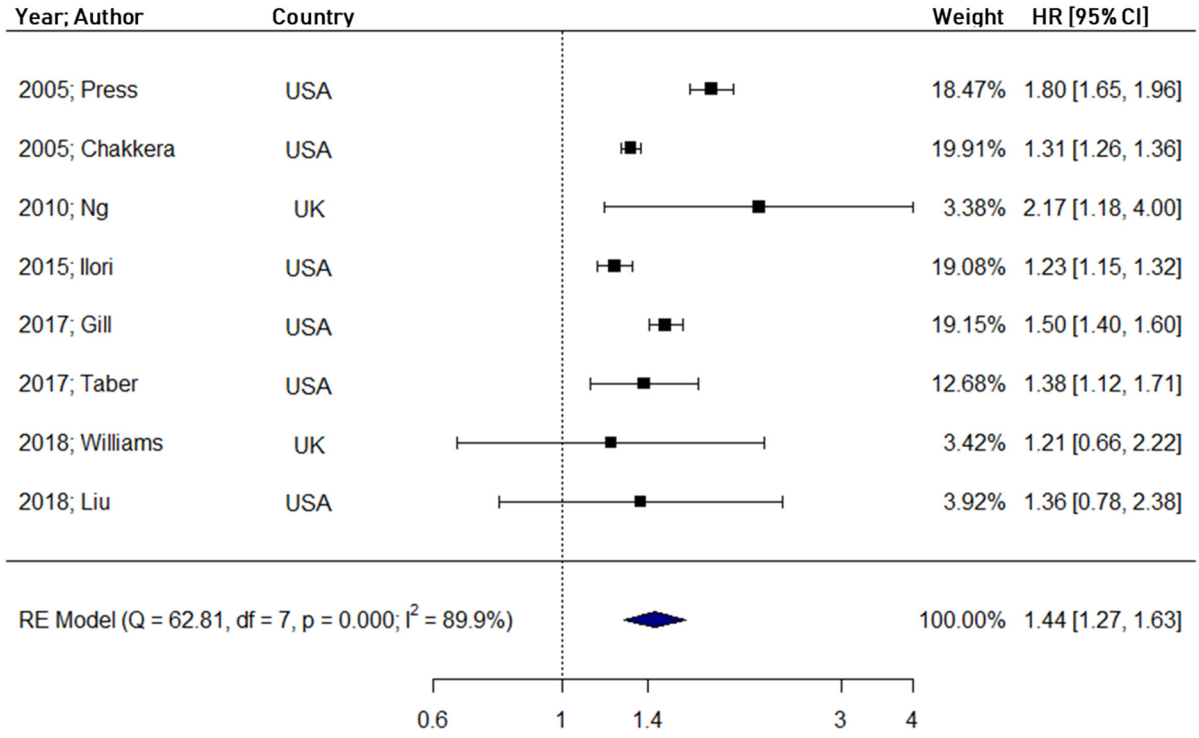


Suppl. Figure S64. Forest plot comparing female and male patients (reference) regarding preemptive transplantation.

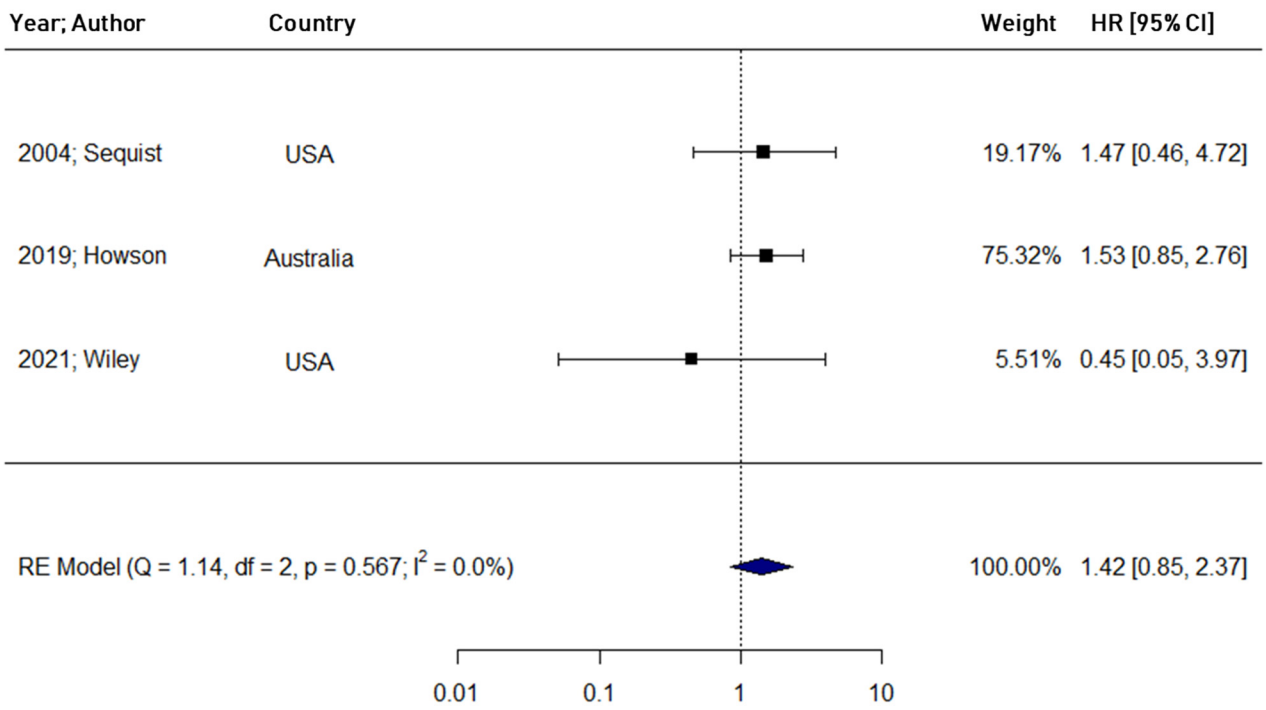


Suppl. Figure S65. Forest plot comparing low and high socioeconomic status patients (reference) regarding preemptive transplantation.

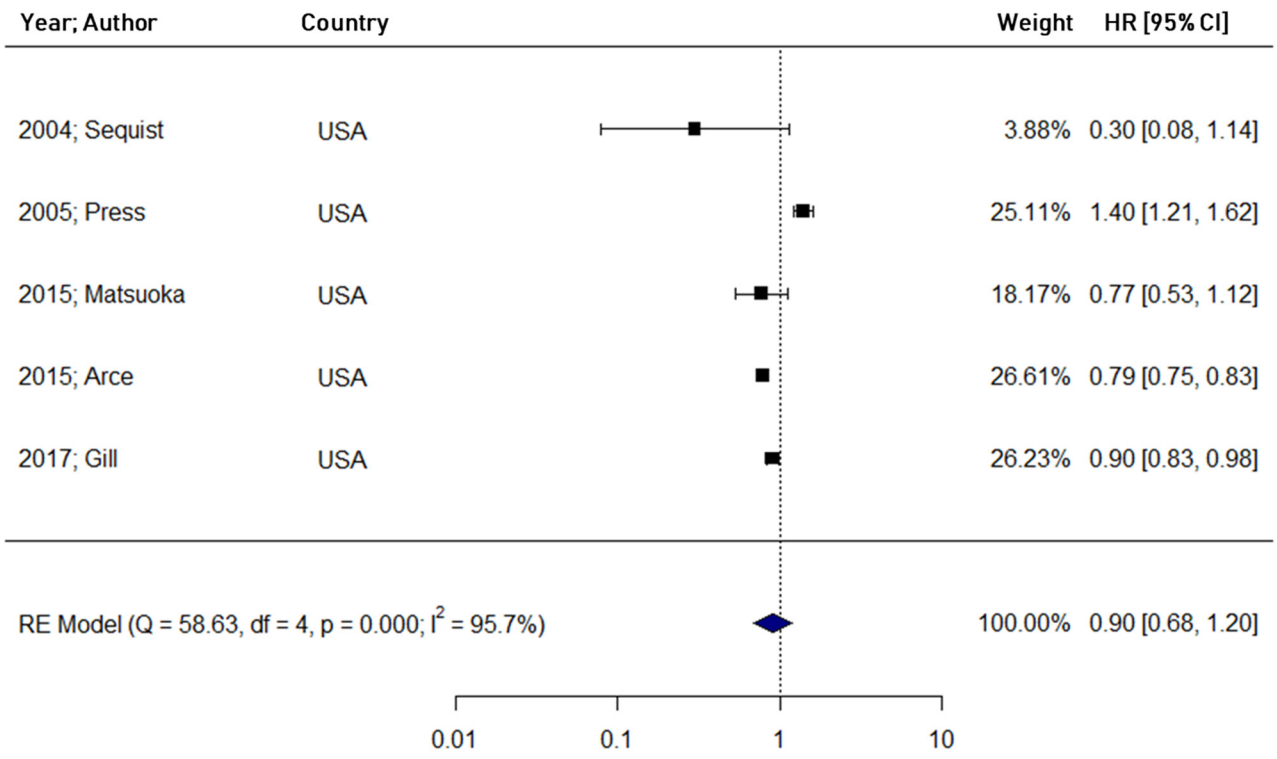
5.14. Graft survival



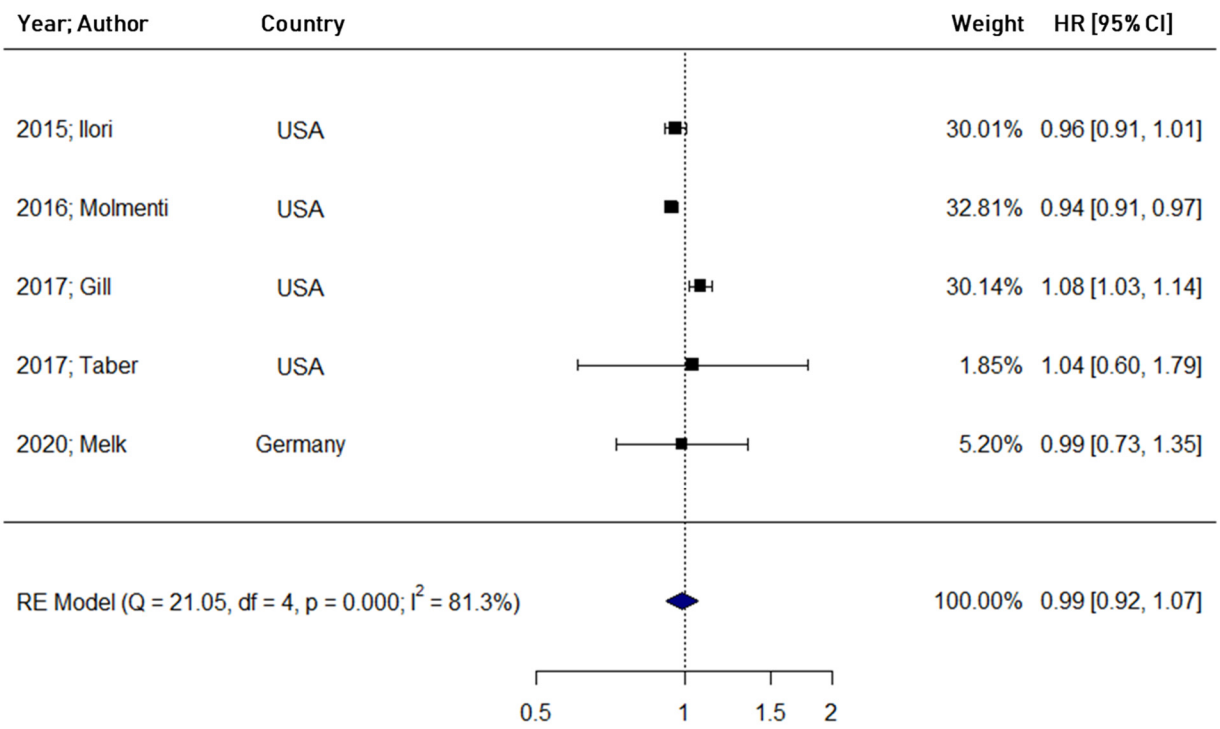
Suppl. Figure S66. Forest plot comparing Black and White patients (reference) regarding graft survival.



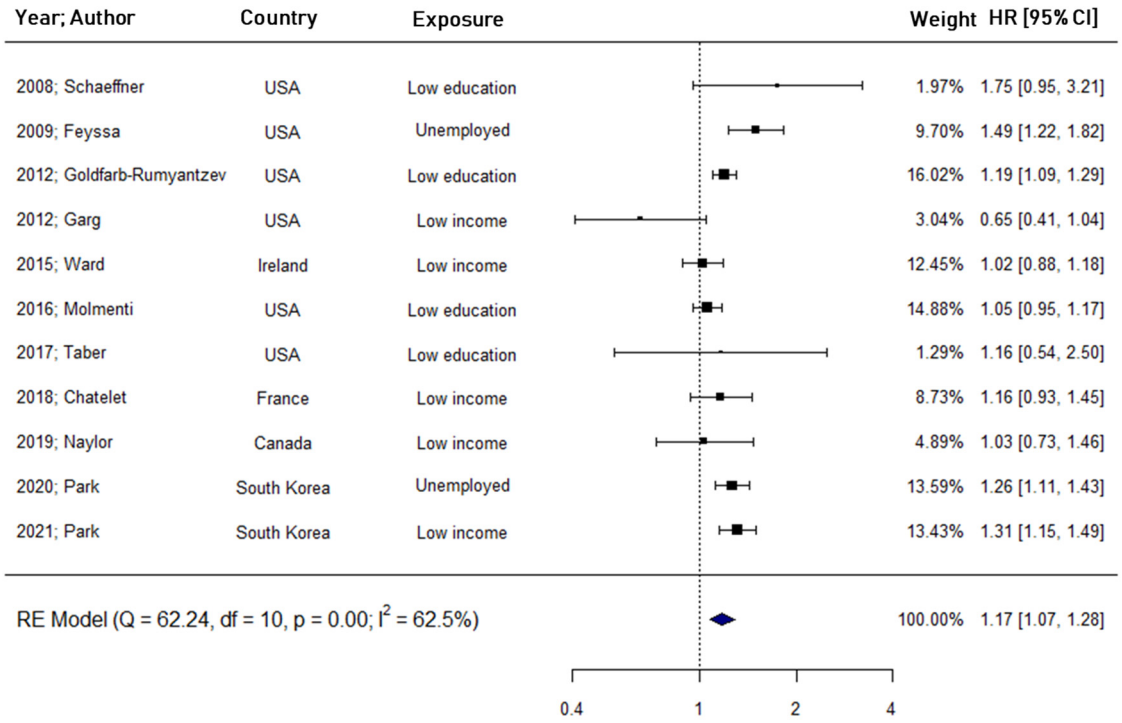
Suppl. Figure S67. Forest plot comparing Indigenous and White patients (reference) regarding graft survival.



Suppl. Figure S68. Forest plot comparing Hispanic and White patients (reference) regarding graft survival.

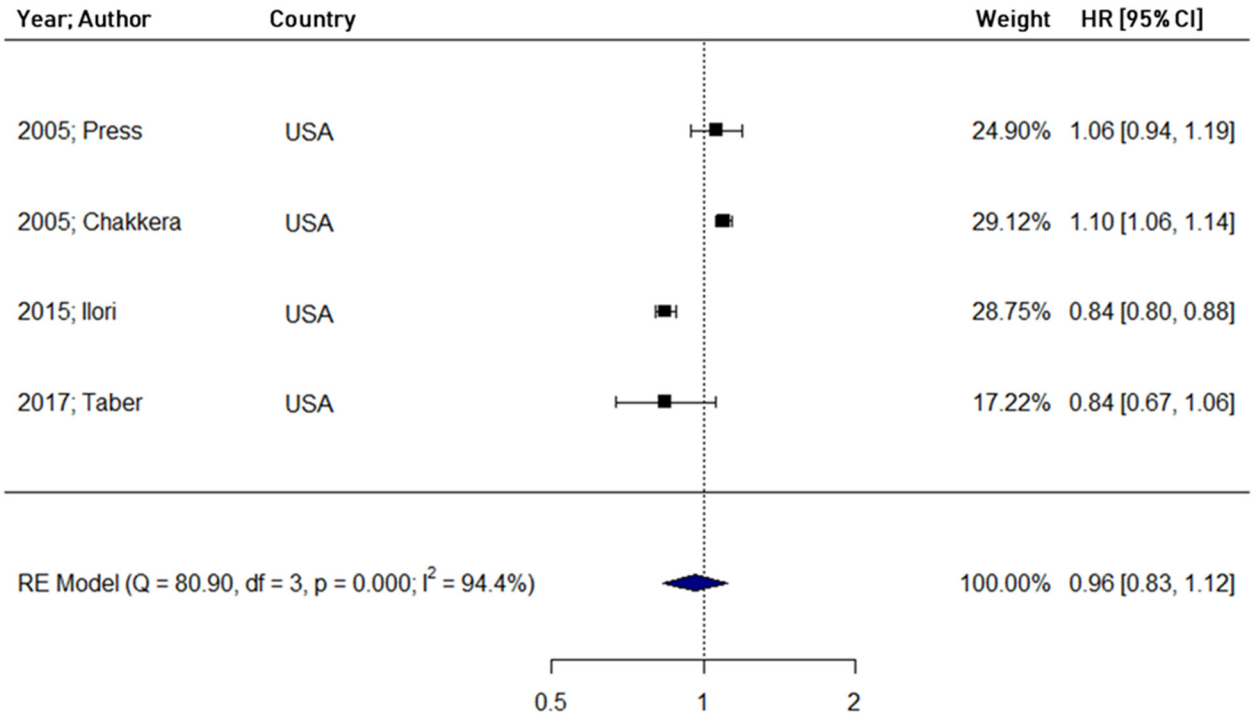


Suppl. Figure S69. Forest plot comparing female and male patients (reference) regarding n graft survival.

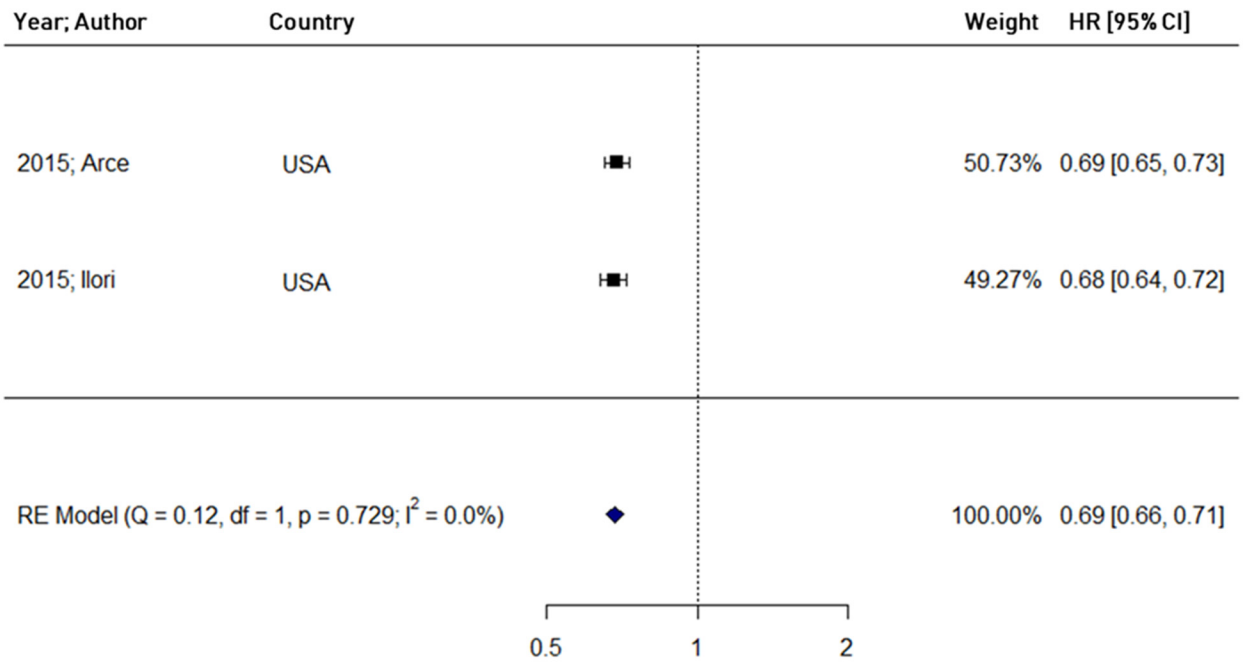


Suppl. Figure S70. Forest plot comparing low and high socioeconomic status patients (reference) regarding graft survival.

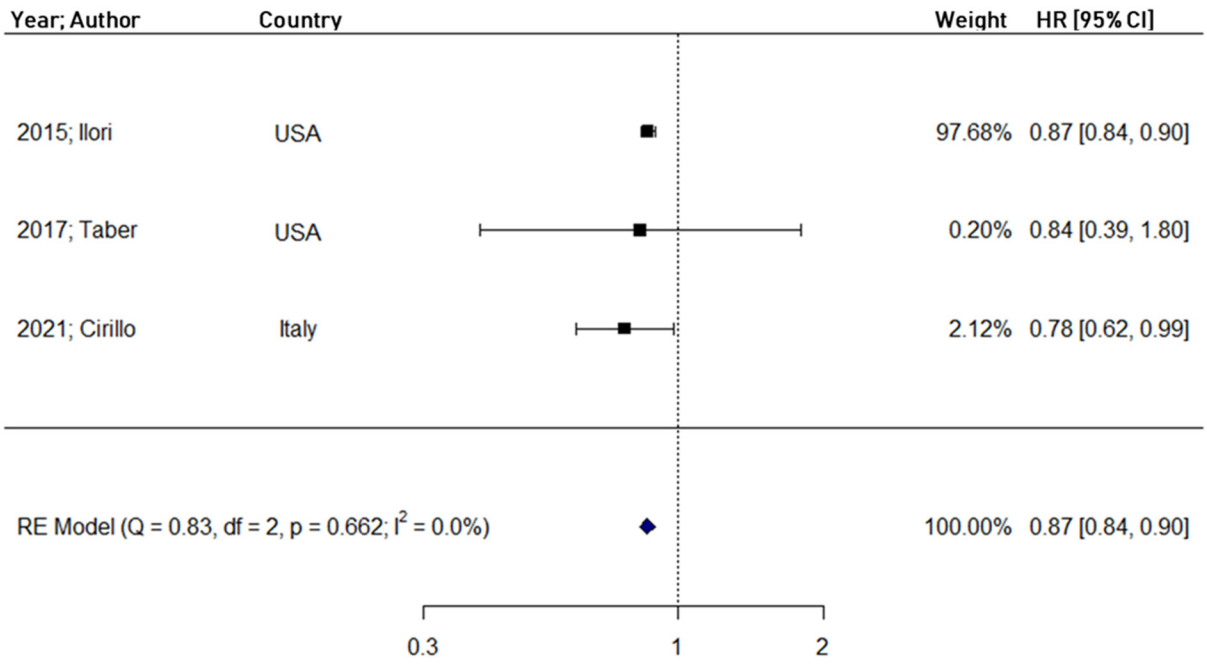
5.15. Kidney transplantation survival



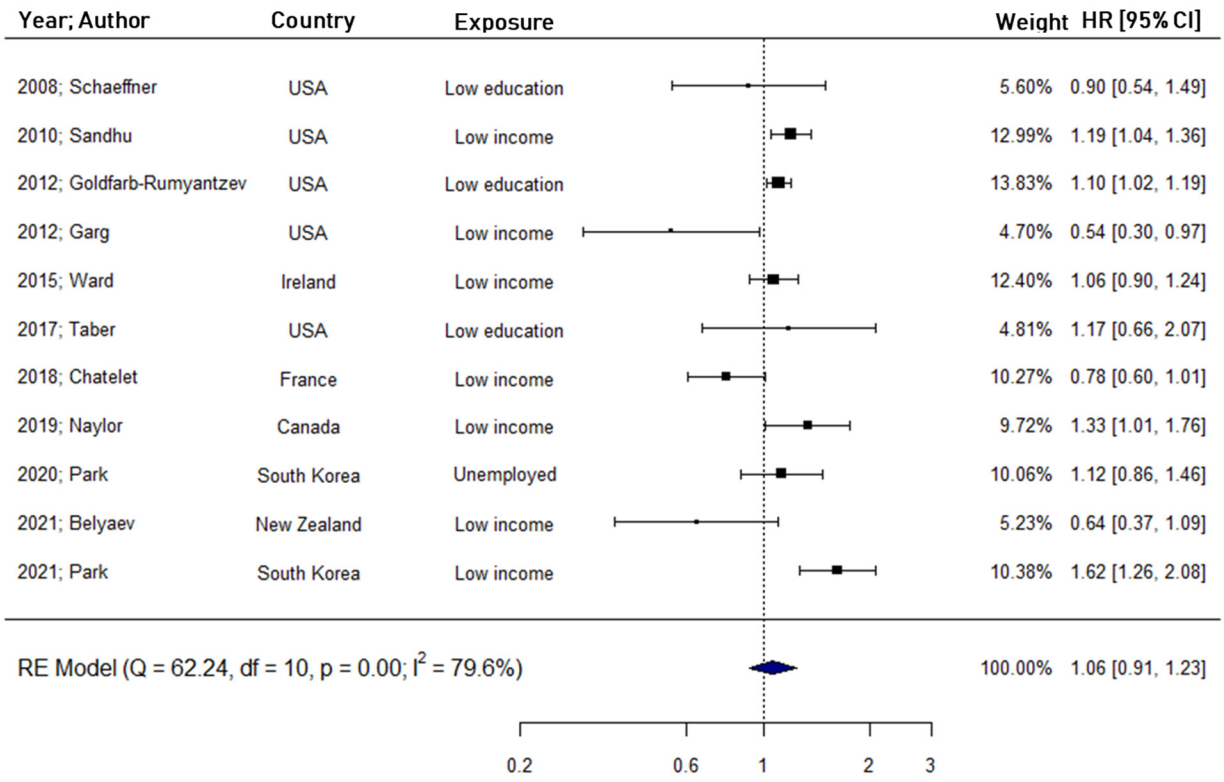
Suppl. Figure S71. Forest plot comparing Black and White patients (reference) regarding kidney transplantation survival.



Suppl. Figure S72. Forest plot comparing Hispanic and White patients (reference) regarding kidney transplantation survival.



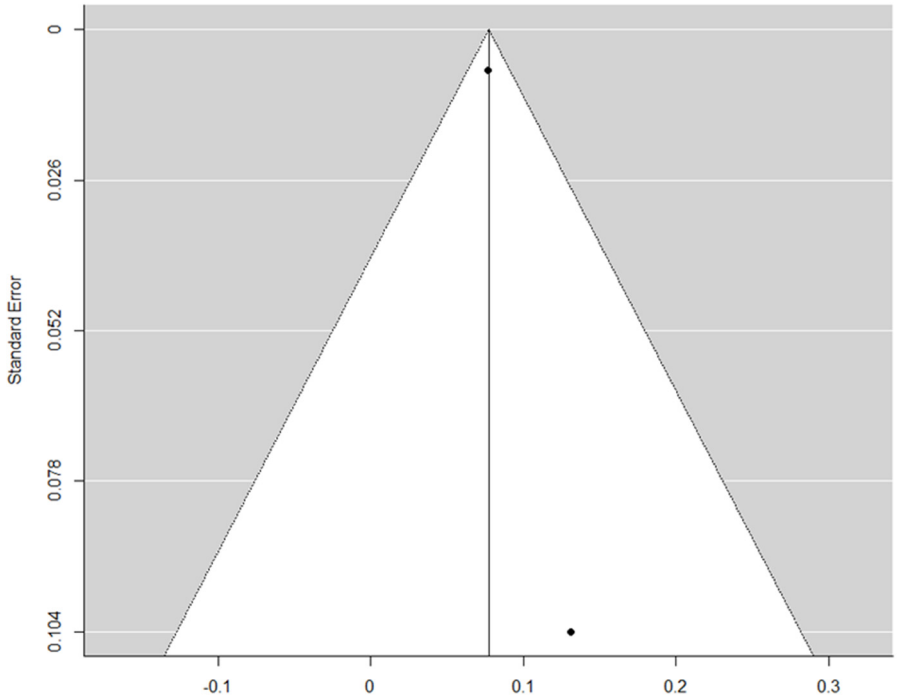
Suppl. Figure S73. Forest plot comparing female and male patients (reference) regarding kidney transplantation survival.



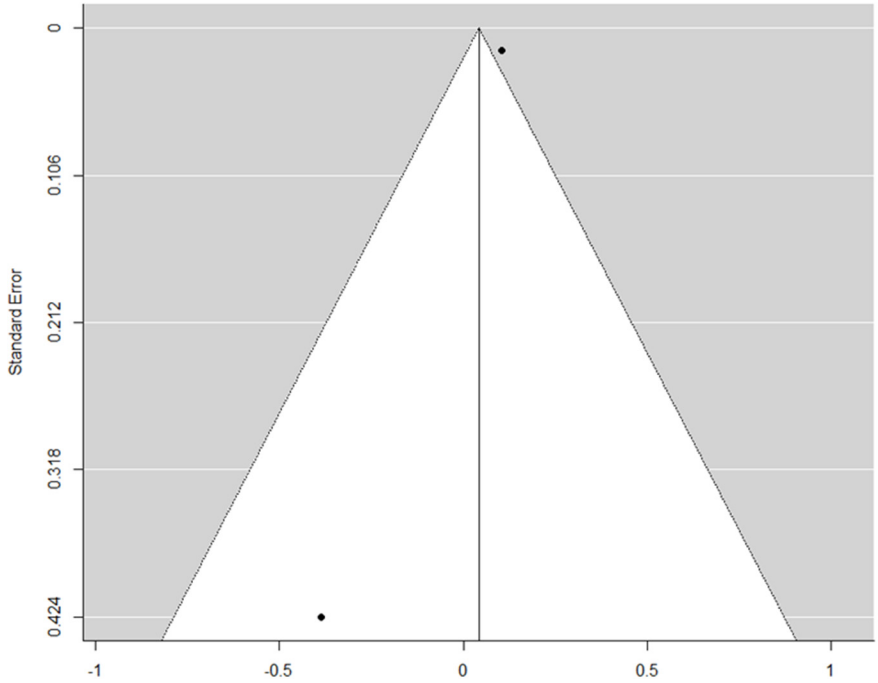
Suppl. Figure S74. Forest plot comparing low and high socioeconomic status patients (reference) regarding kidney transplantation survival.

Supplementary S6: Funnel plots

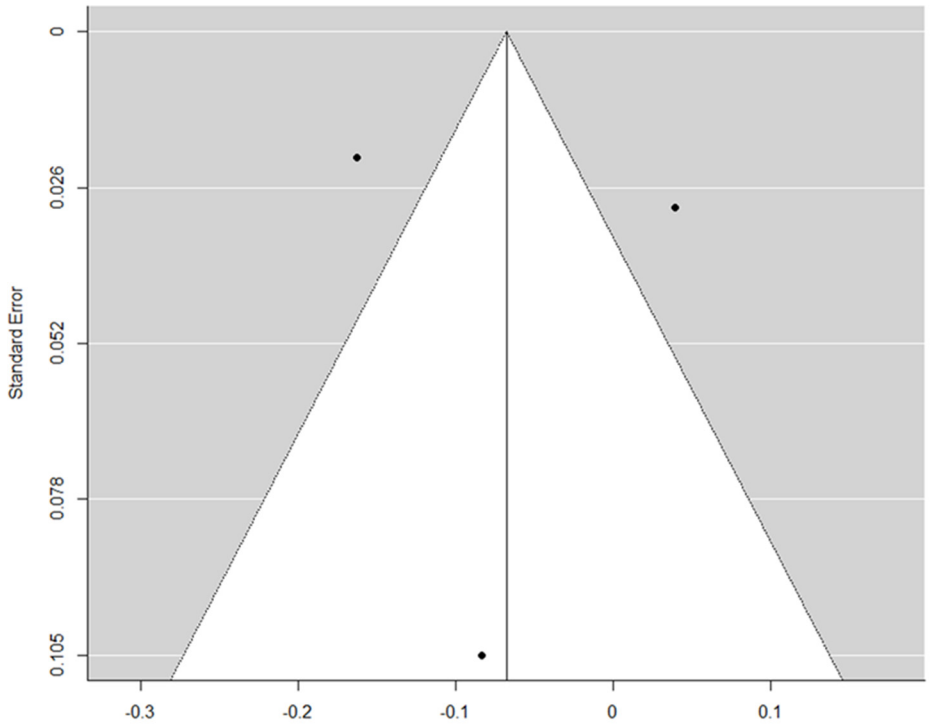
6.1. Arteriovenous fistula/graft *vs*. Central venous catheter



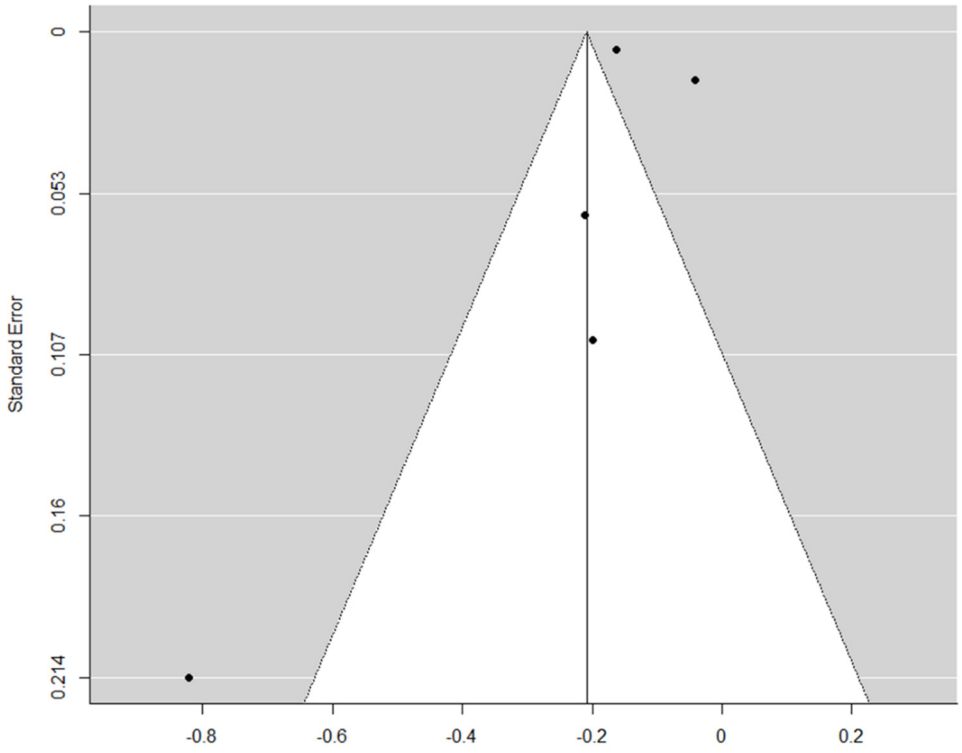
Suppl. Figure S75. Funnel plot comparing Black and White patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.



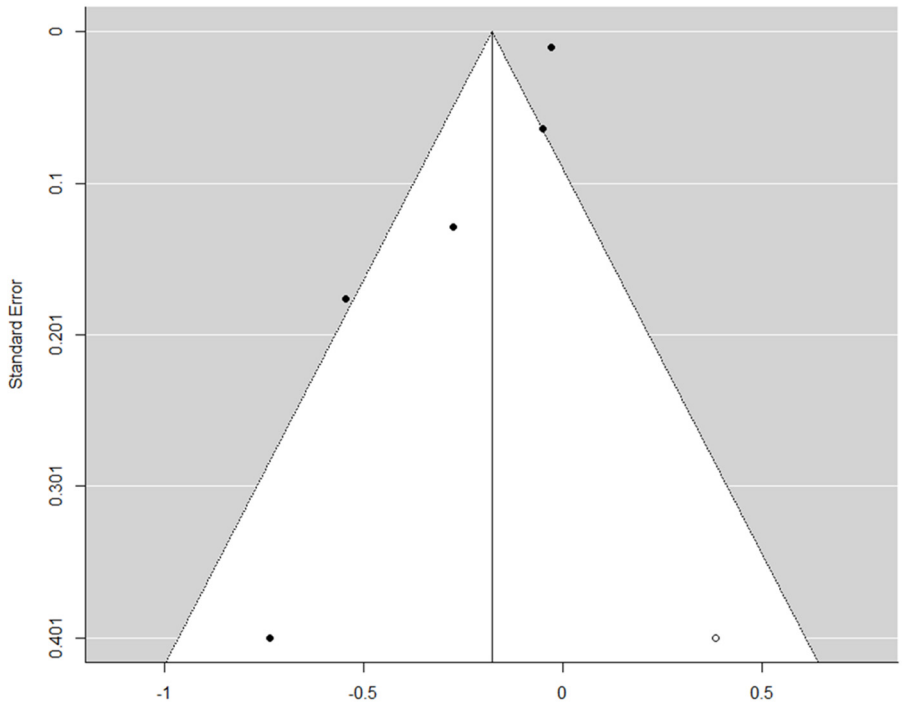
Suppl. Figure S76. Funnel plot comparing Asian and White patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.



Suppl. Figure S77. Funnel plot comparing Indigenous and White patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.

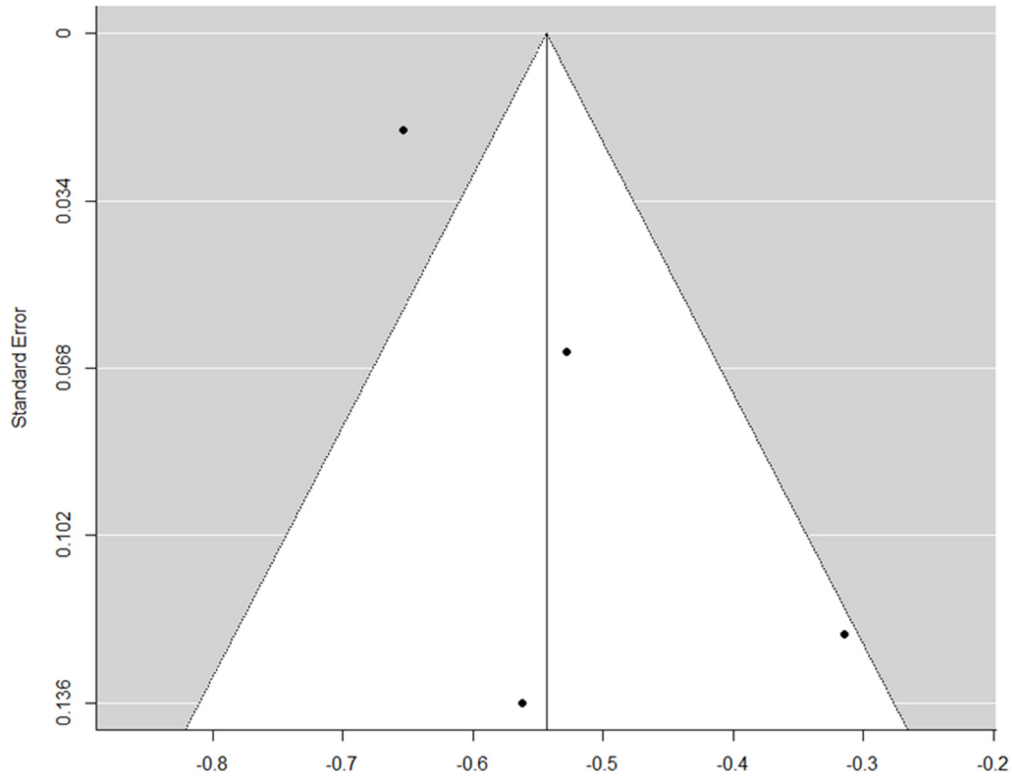


Suppl. Figure S78. Funnel plot of female patients (reference) and dialysis initiation with arteriovenous fistula or graft.

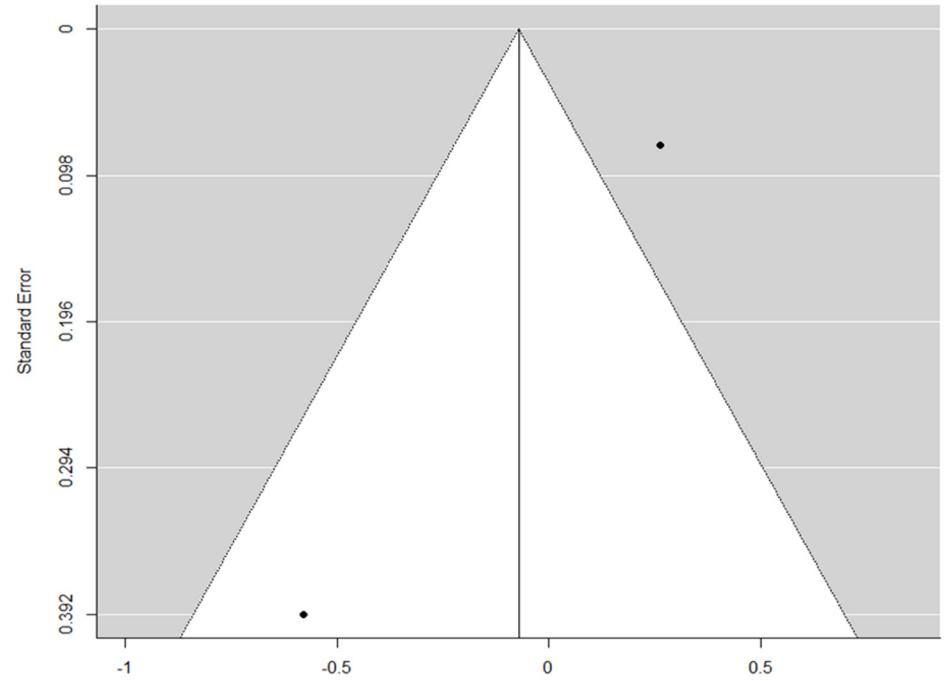


Suppl. Figure S79. Funnel plot comparing low and high socioeconomic status patients (reference) regarding dialysis initiation with arteriovenous fistula or graft.

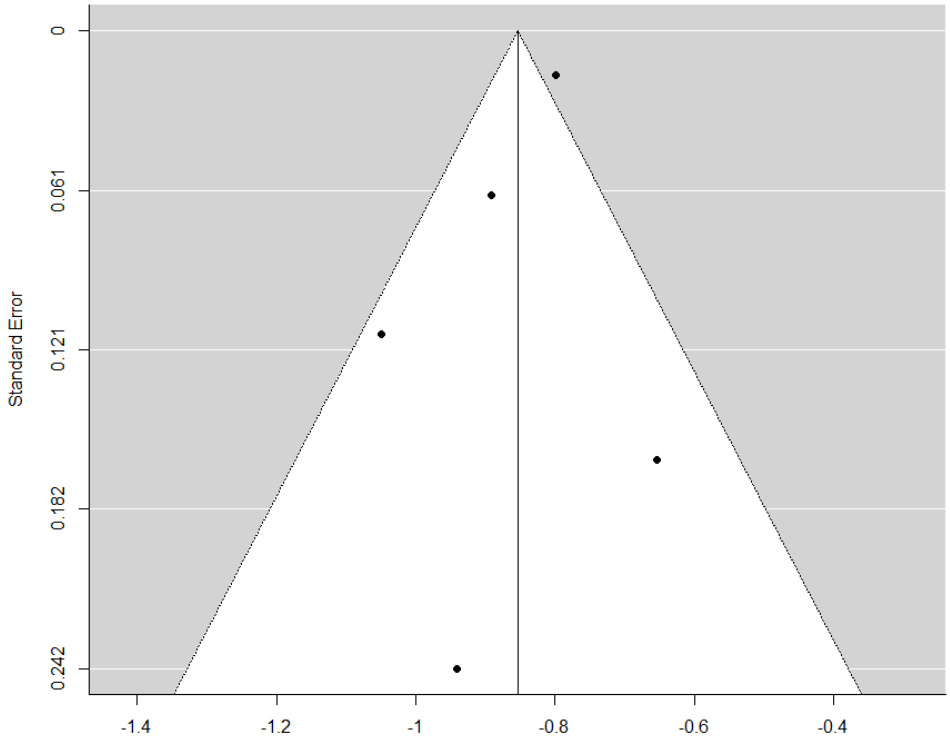
6.2. Arteriovenous fistula *vs*. Arteriovenous graft



Suppl. Figure S80. Funnel plot comparing Black and White patients (reference) regarding dialysis initiation with arteriovenous fistula *vs*. arteriovenous graft.

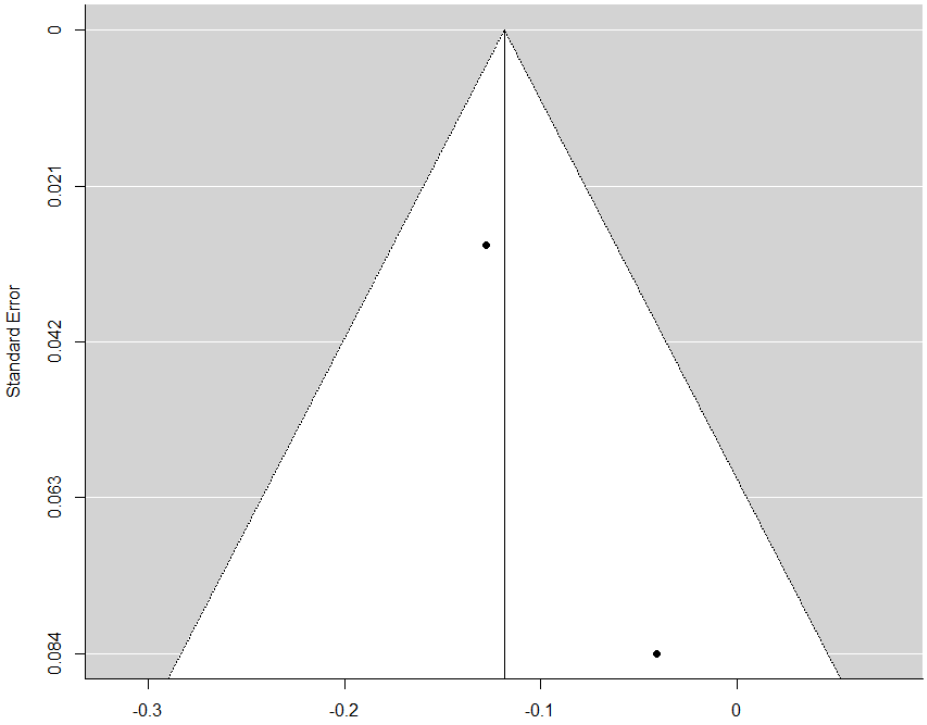


Suppl. Figure S81. Funnel plot comparing Indigenous and White patients (reference) regarding dialysis initiation with arteriovenous fistula *vs*. arteriovenous graft.

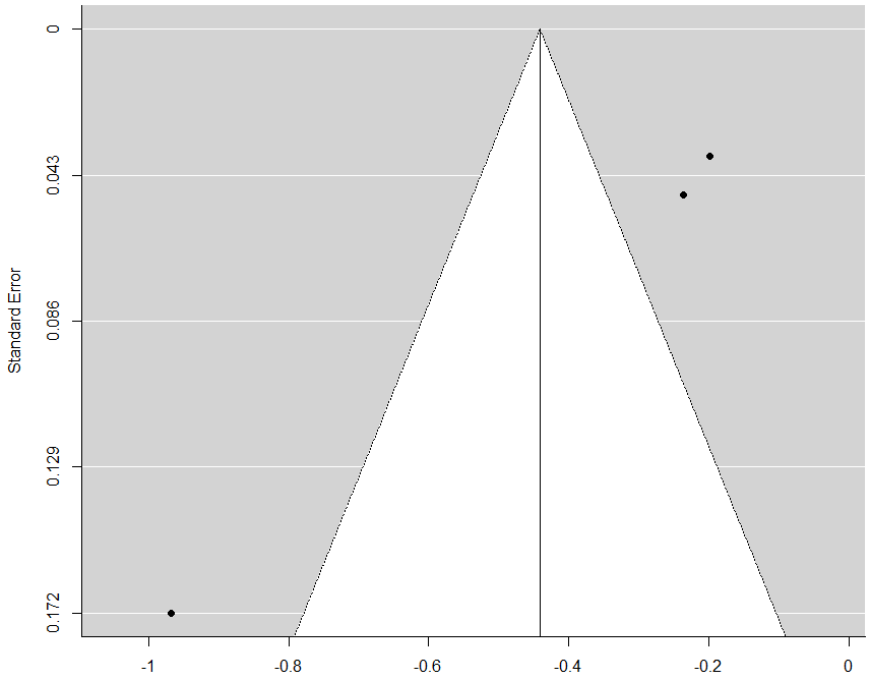


Suppl. Figure S82. Funnel plot of female patients (reference) and dialysis initiation with arteriovenous fistula *vs*. arteriovenous graft.

6.3. Successful arteriovenous fistula use

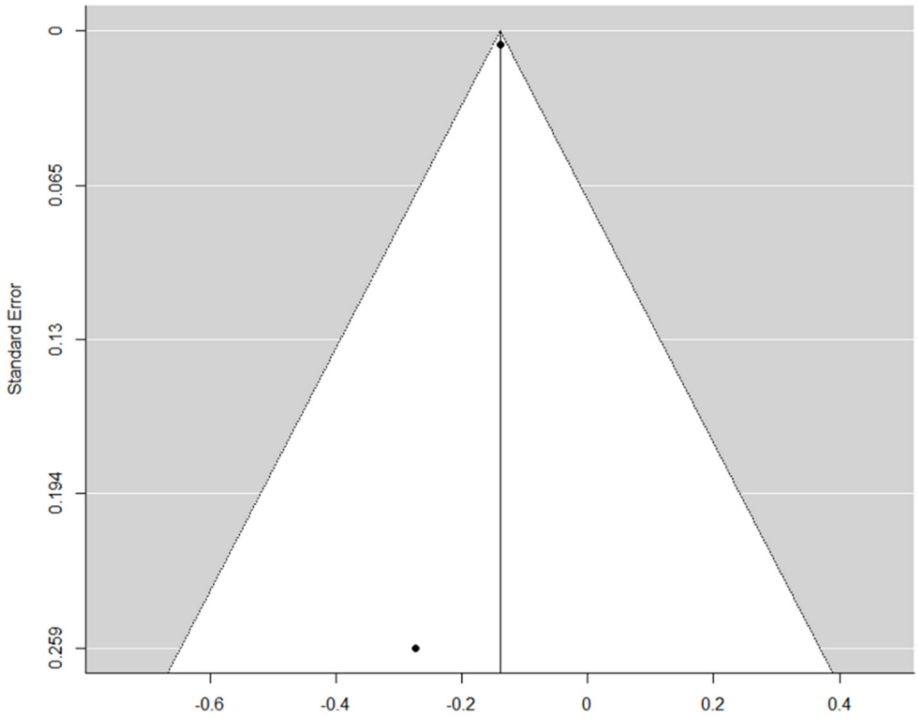


Suppl. Figure S83. Funnel plot comparing Black and White patients (reference) regarding successful arteriovenous fistula use.

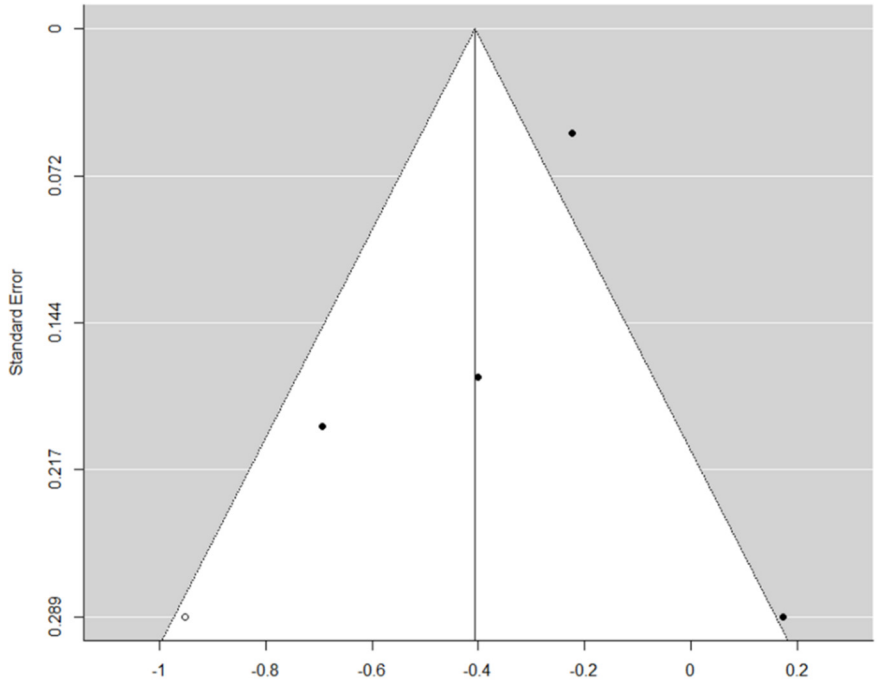


Suppl. Figure S84. Funnel plot of female patients (reference) and successful arteriovenous fistula.

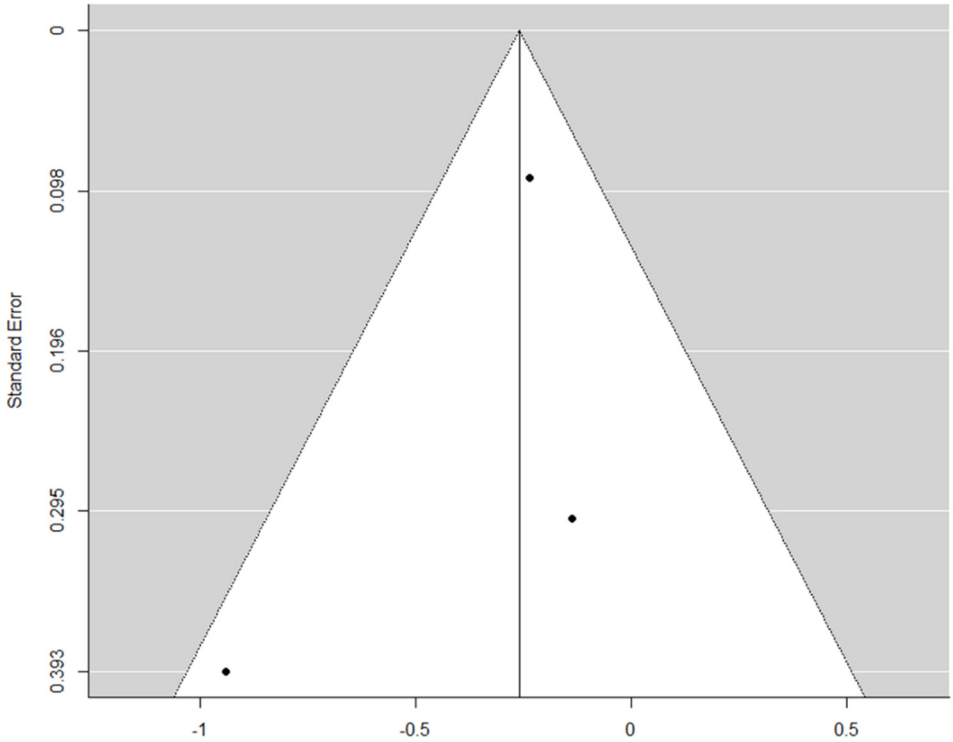
6.4. Primary arteriovenous fistula patency



Suppl. Figure S85. Funnel plot comparing Black and White patients (reference) regarding primary arteriovenous fistula patency.

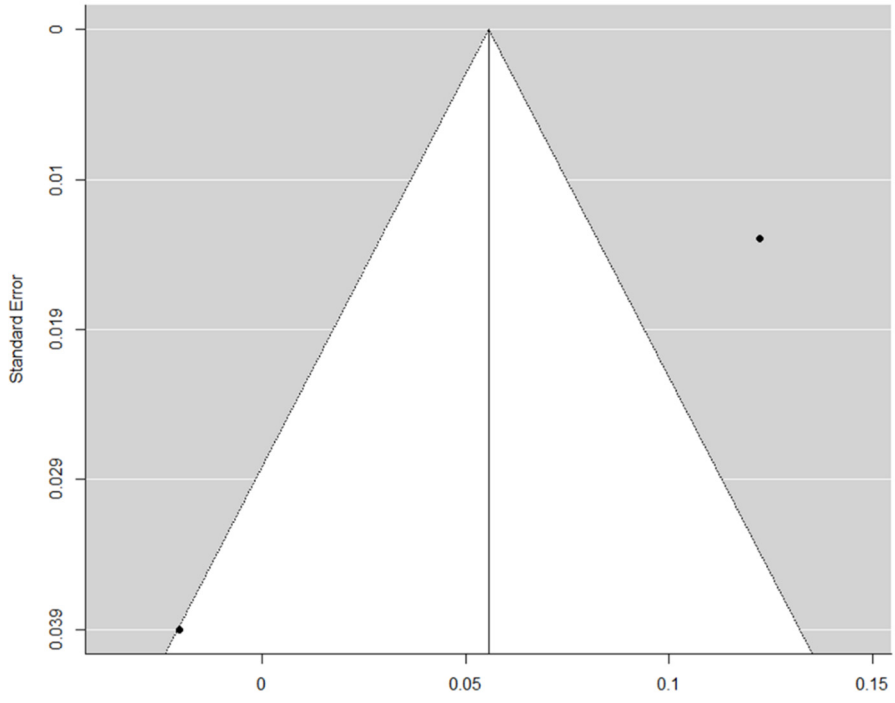


Suppl. Figure S86. Funnel plot of female patients (reference) and primary arteriovenous fistula patency.

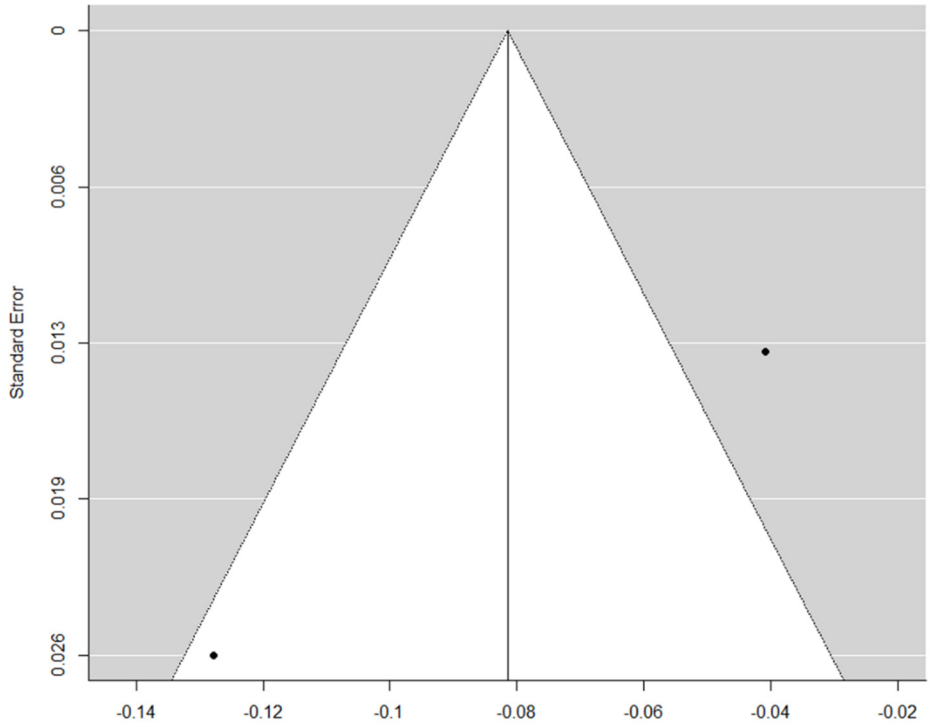


Suppl. Figure S87. Funnel plot comparing low and high socioeconomic status patients (reference) regarding primary arteriovenous fistula patency.

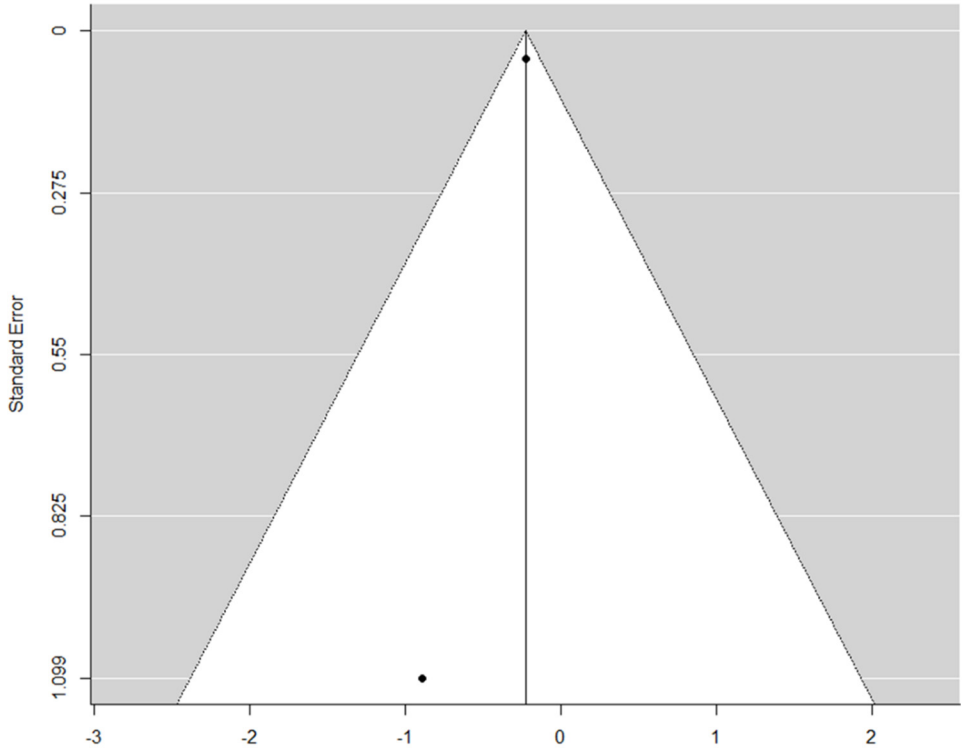
6.5. Transition from central venous catheter to arteriovenous fistula/graft



Suppl. Figure S88. Funnel plot comparing Black and White patients (reference) regarding the transition from central venous catheter to arteriovenous fistula/graft.

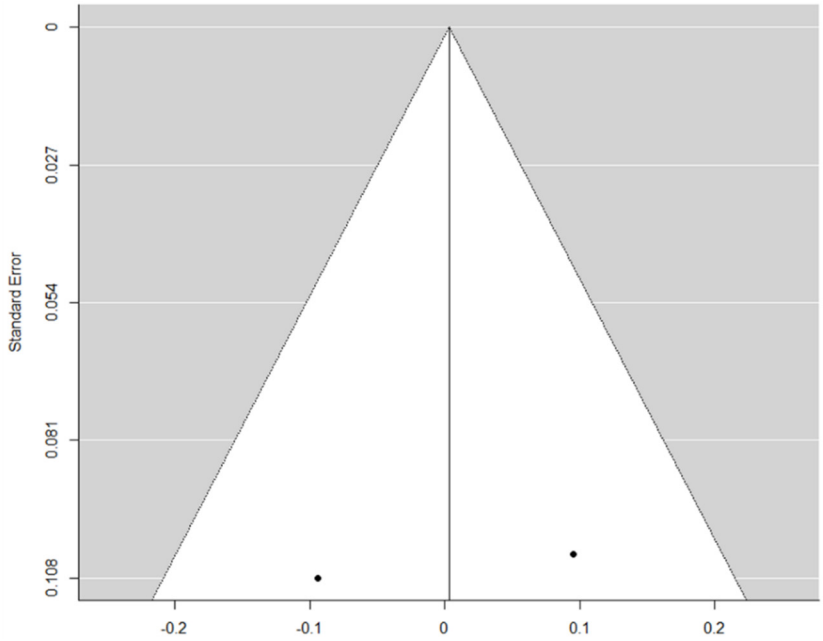


Suppl. Figure S89. Funnel plot of female patients (reference) and the transition from central venous catheter to arteriovenous fistula/graft.

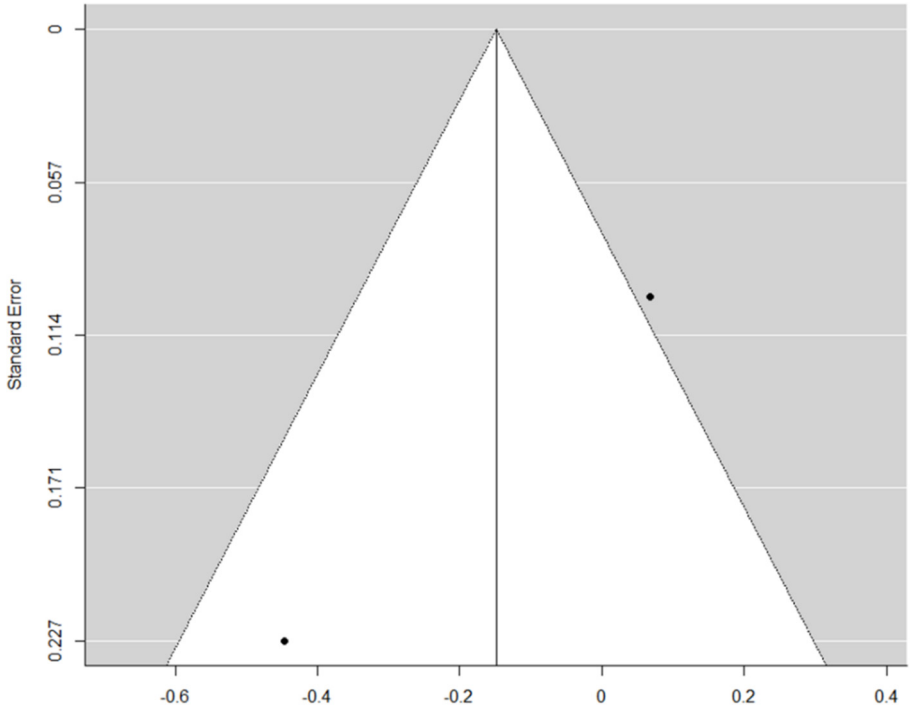


Suppl. Figure S90. Funnel plot comparing low and high socioeconomic status patients (reference) regarding the transition from central venous catheter to arteriovenous fistula/graft.

6.6. Home dialysis

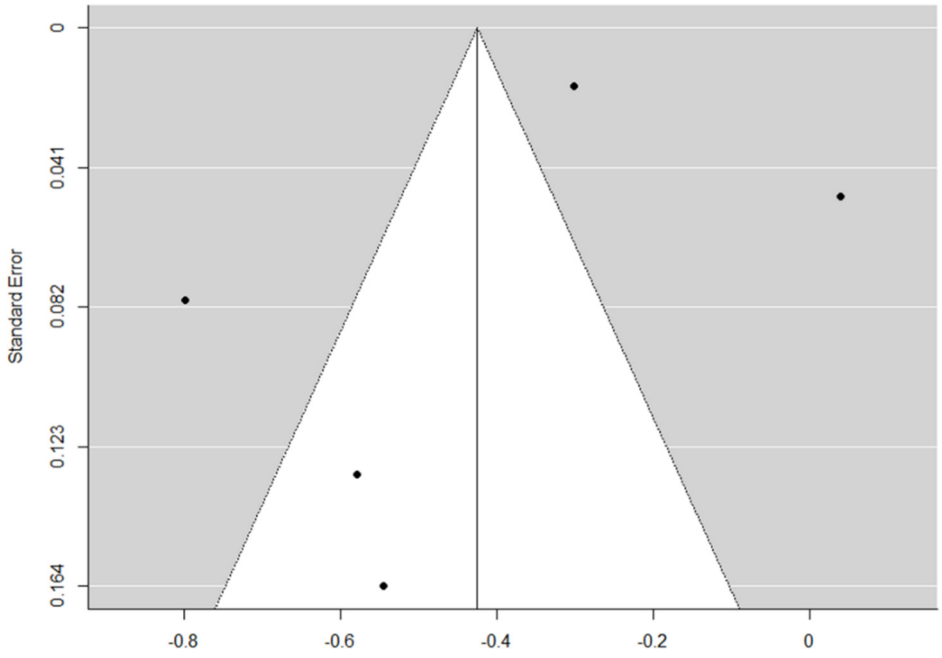


Suppl. Figure S91. Funnel plot comparing Black and White patients (reference) regarding home dialysis.

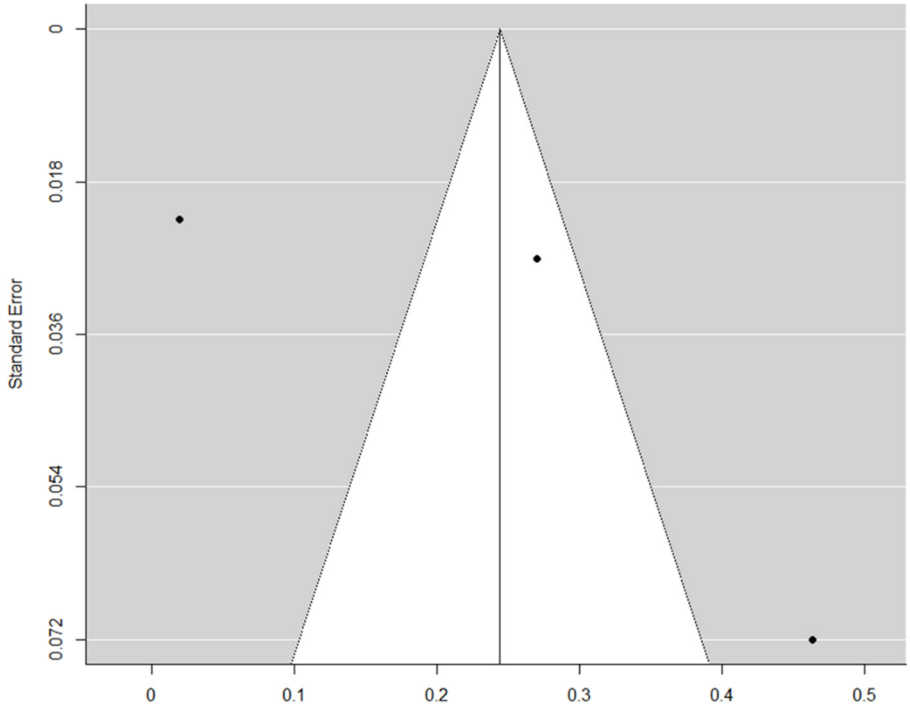


Suppl. Figure S92. Funnel plot comparing Asian and White patients (reference) regarding home dialysis.

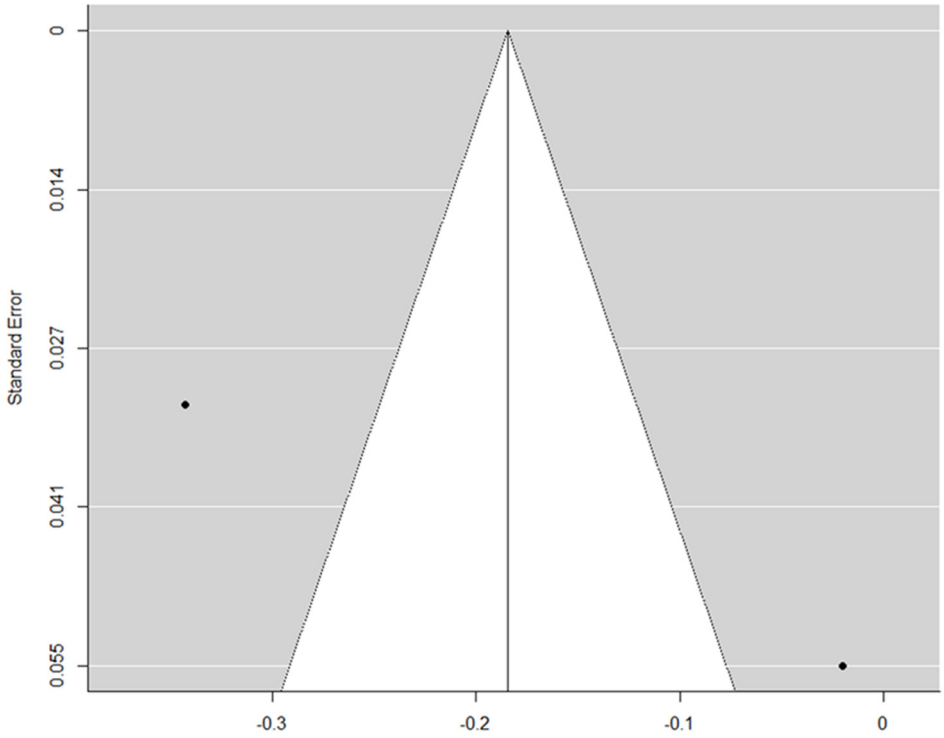
6.7. Peritoneal dialysis



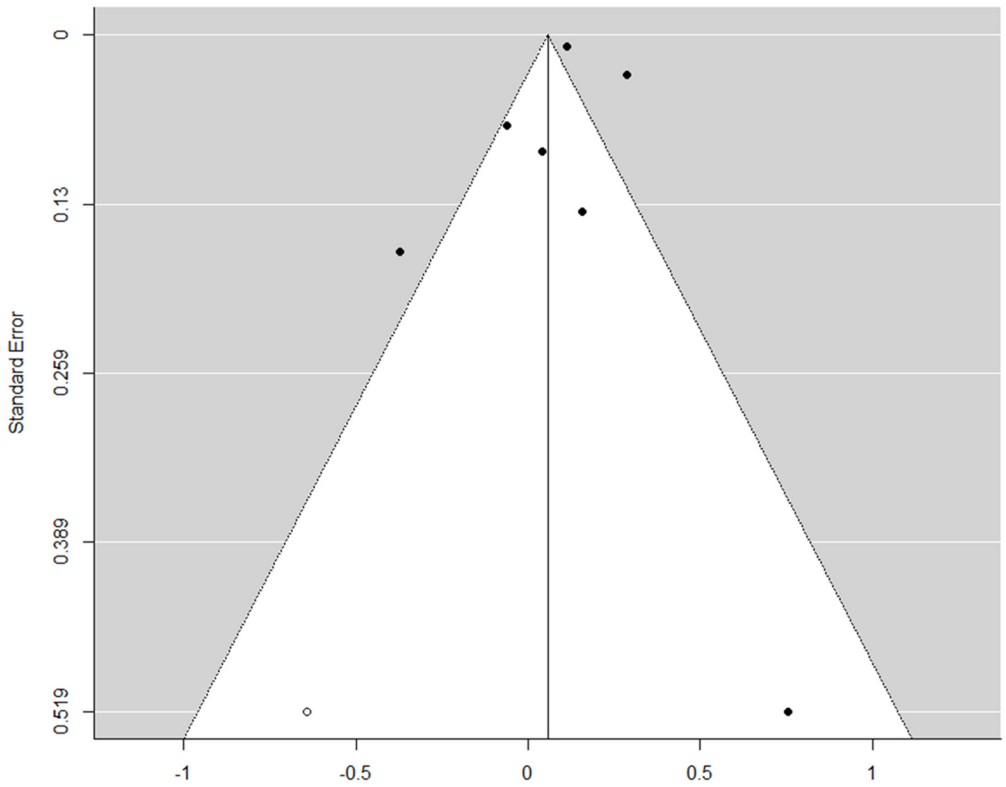
Suppl. Figure S93. Funnel plot comparing Black and White patients (reference) regarding peritoneal dialysis use.



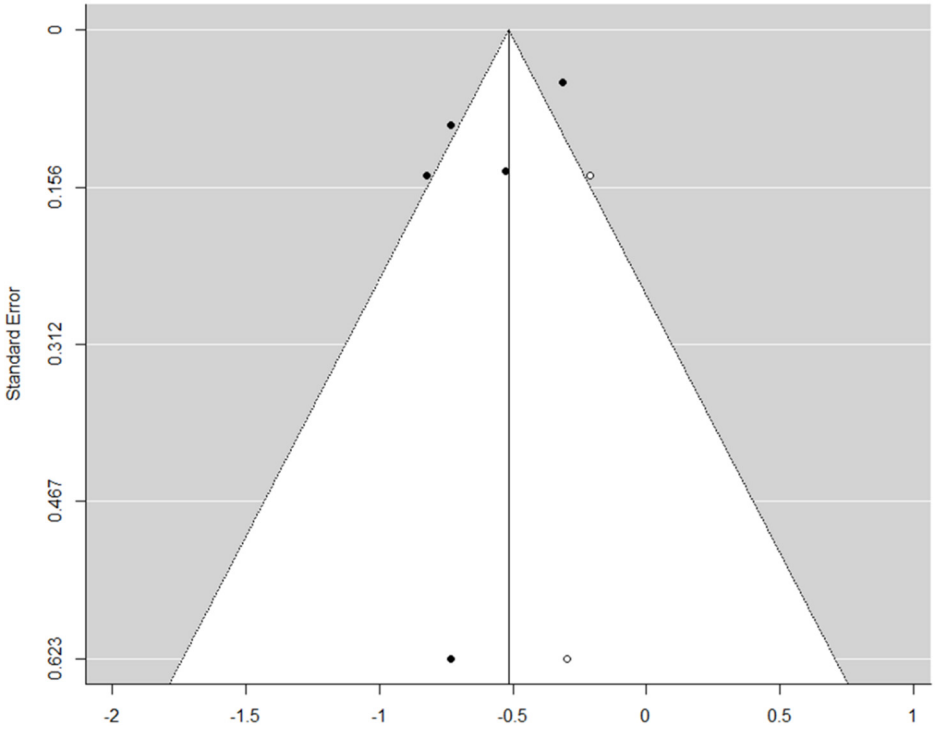
Suppl. Figure S94. Funnel plot comparing Asian and White patients (reference) regarding peritoneal dialysis use.



Suppl. Figure S95. Funnel plot comparing Indigenous and White patients (reference) regarding peritoneal dialysis use.

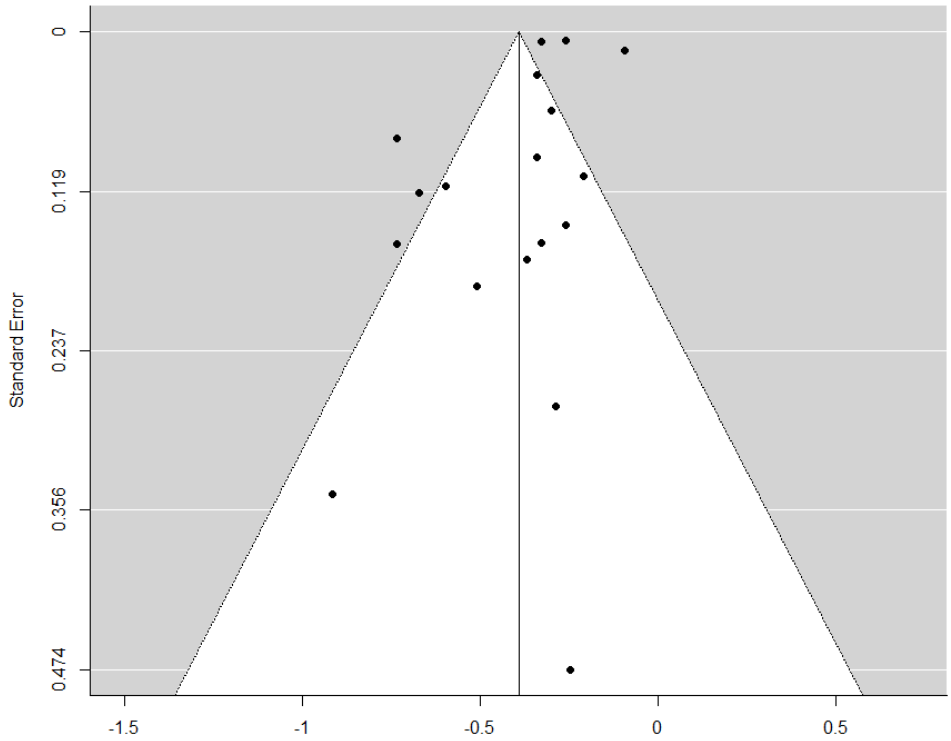


Suppl. Figure S96. Funnel plot of female patients (reference) and peritoneal dialysis use.

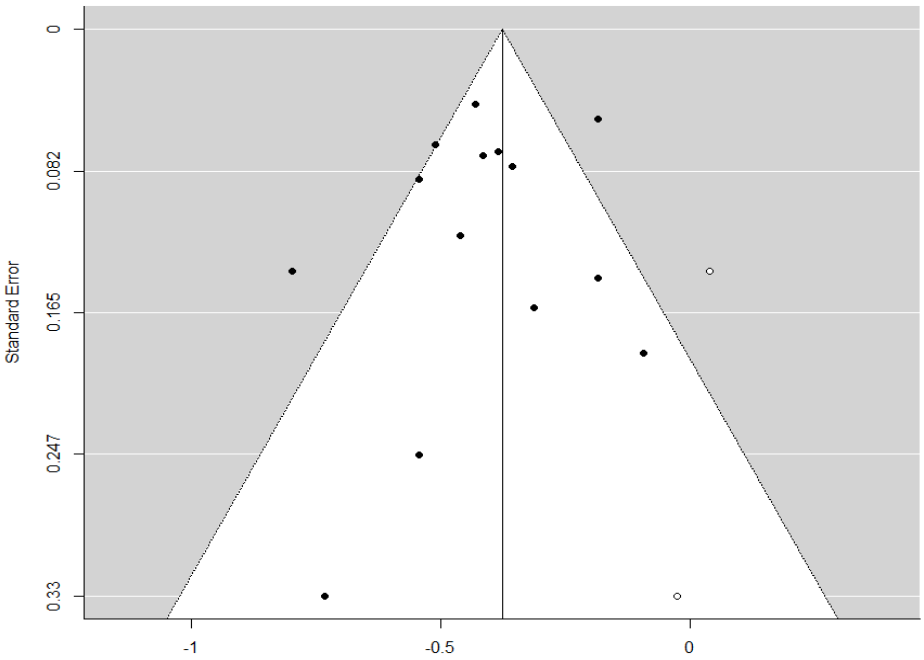


Suppl. Figure S97. Funnel plot comparing low and high socioeconomic status patients (reference) regarding peritoneal dialysis use.

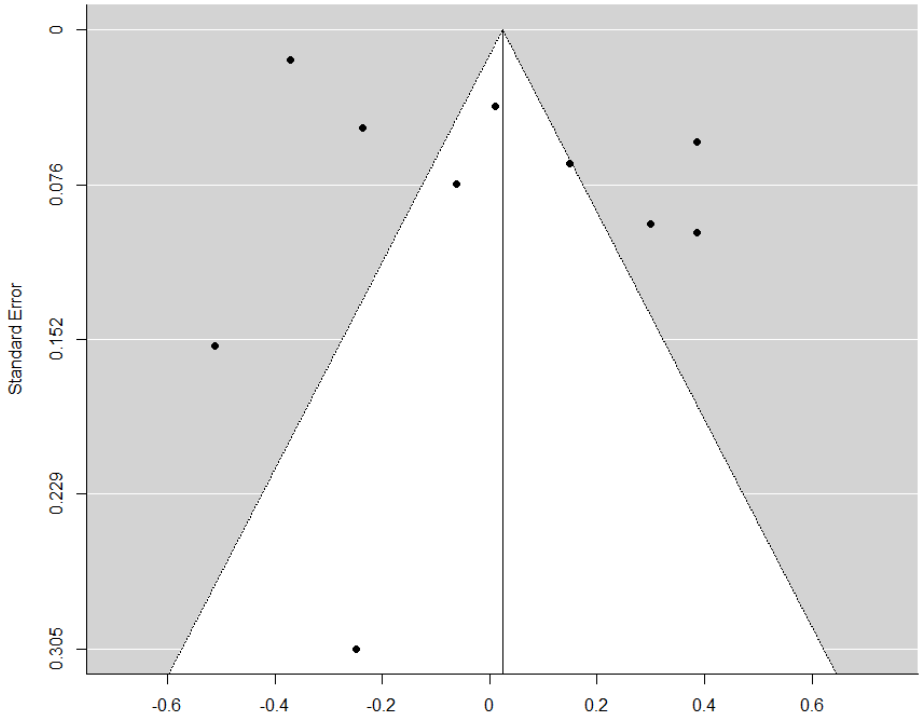
6.8. Dialysis survival



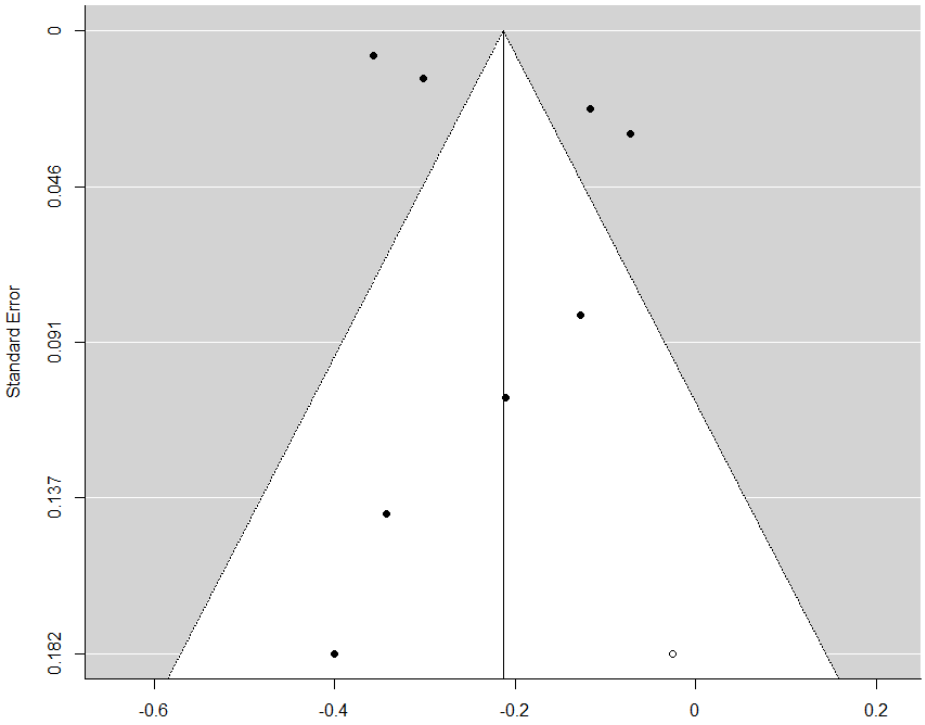
Suppl. Figure S98. Funnel plot comparing Black and White patients (reference) regarding dialysis mortality.



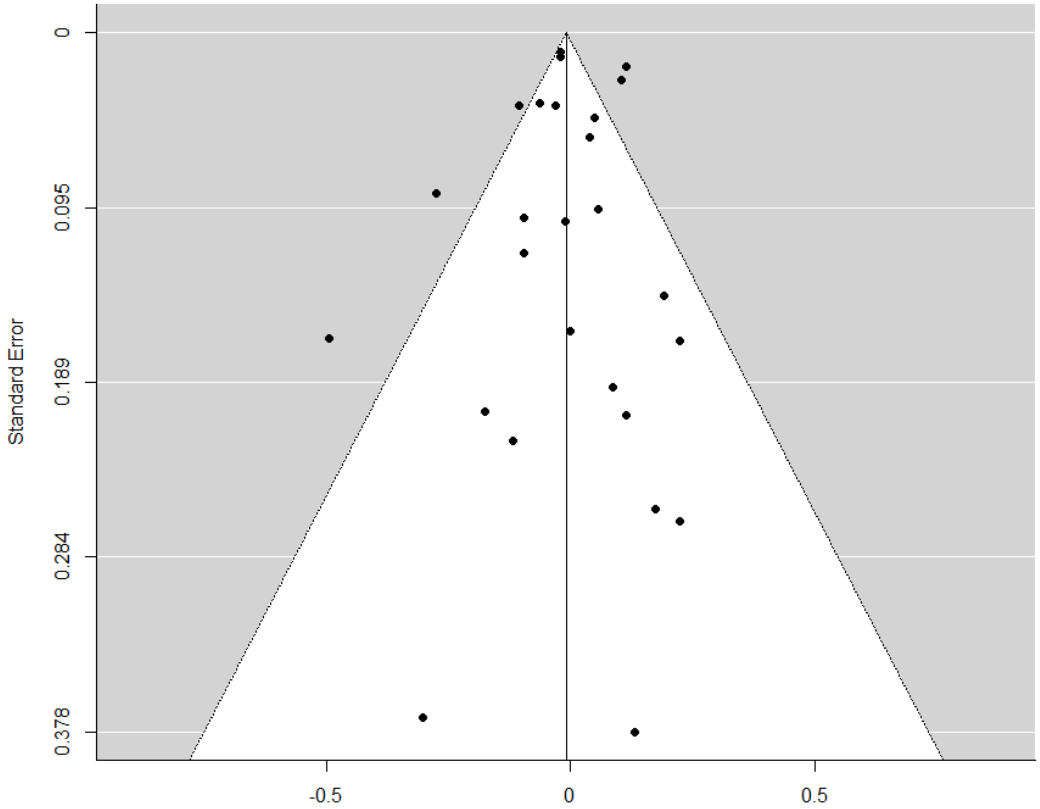
Suppl. Figure S99. Funnel plot comparing Asian and White patients (reference) regarding dialysis mortality.



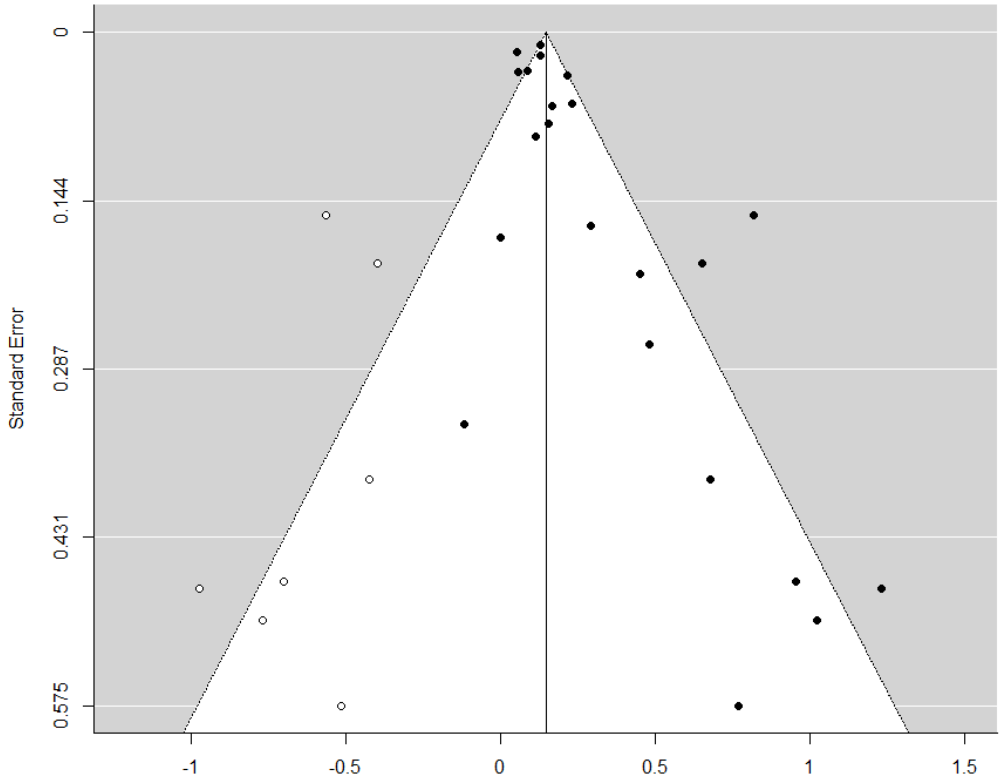
Suppl. Figure S100. Funnel plot comparing Indigenous and White patients (reference) regarding dialysis mortality.



Suppl. Figure S101. Funnel plot comparing Hispanic and White patients (reference) regarding dialysis mortality.

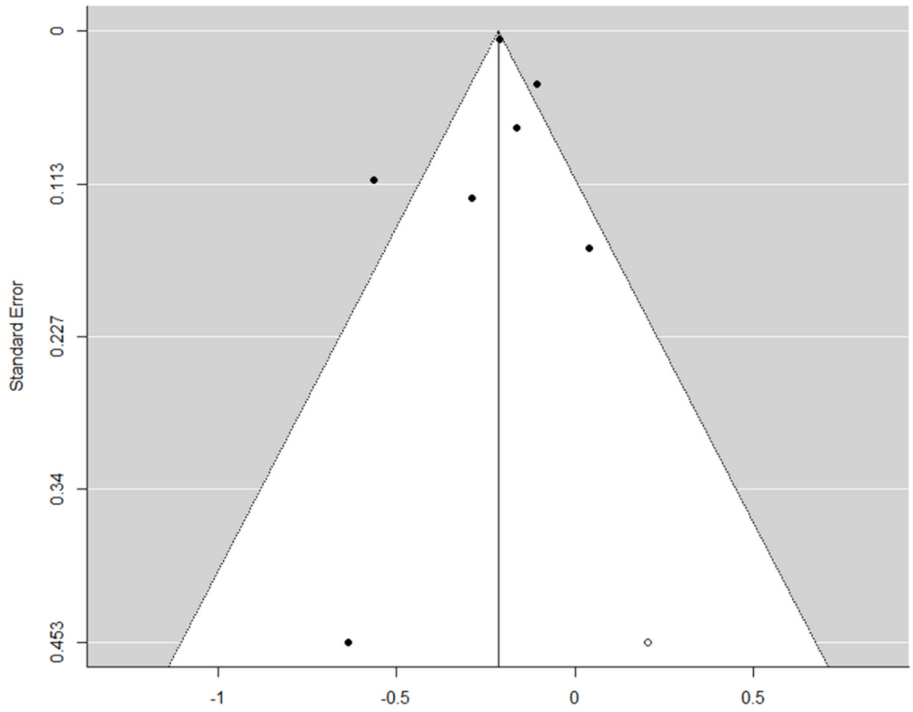


Suppl. Figure S102. Funnel plot of female patients (reference) and dialysis mortality.

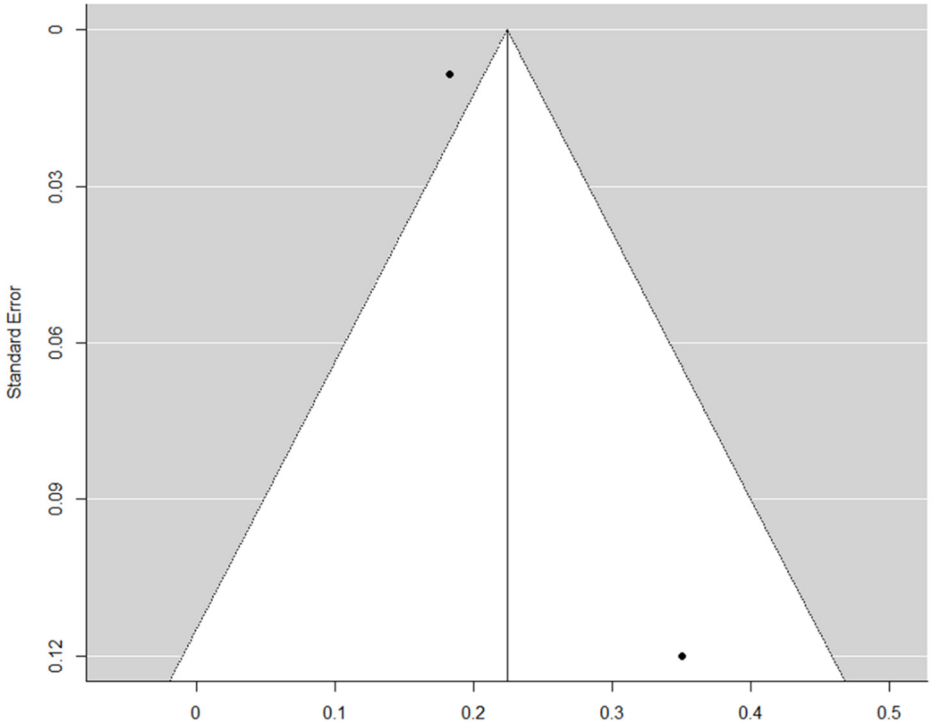


Suppl. Figure S103. Funnel plot comparing low and high socioeconomic status patients (reference) regarding dialysis mortality.

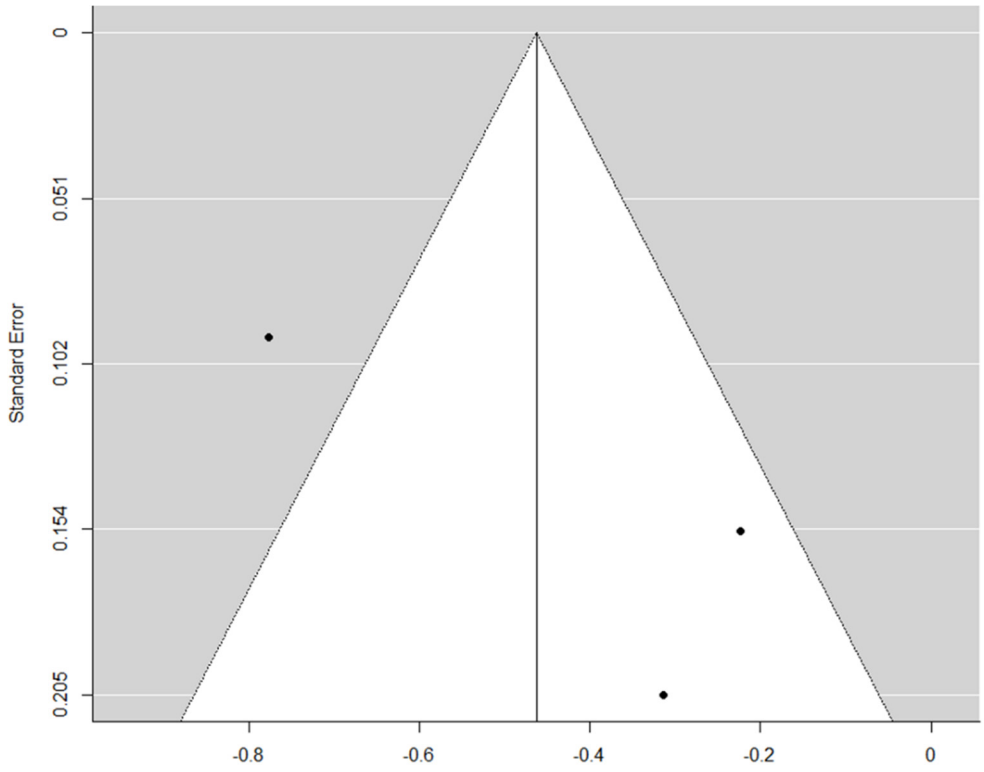
6.9. Waitlisting



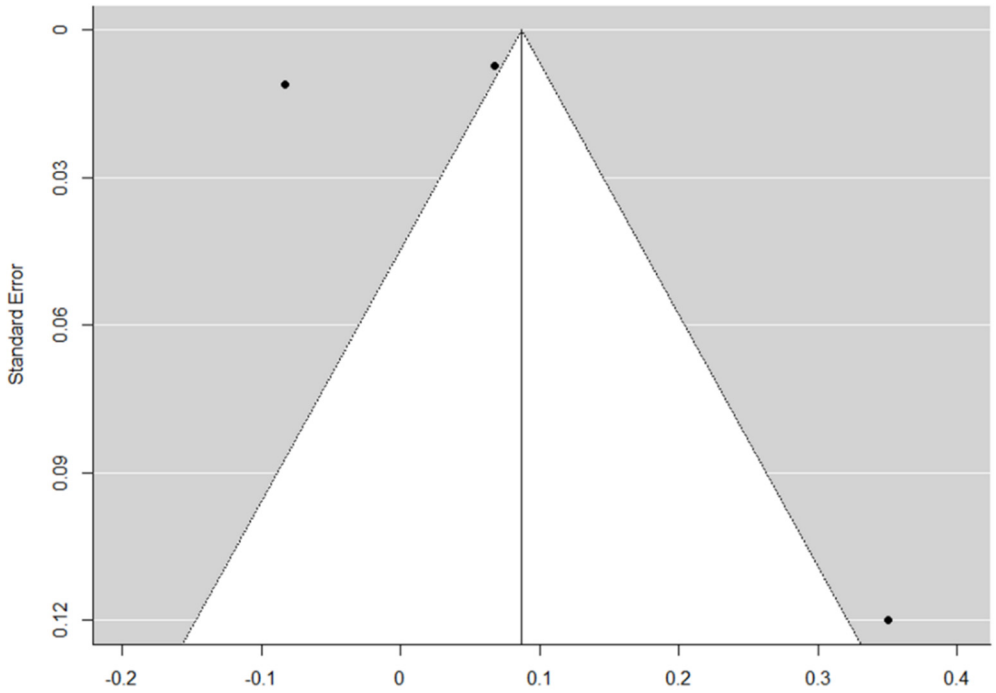
Suppl. Figure S104. Funnel plot comparing Black and White patients (reference) regarding waitlisting.



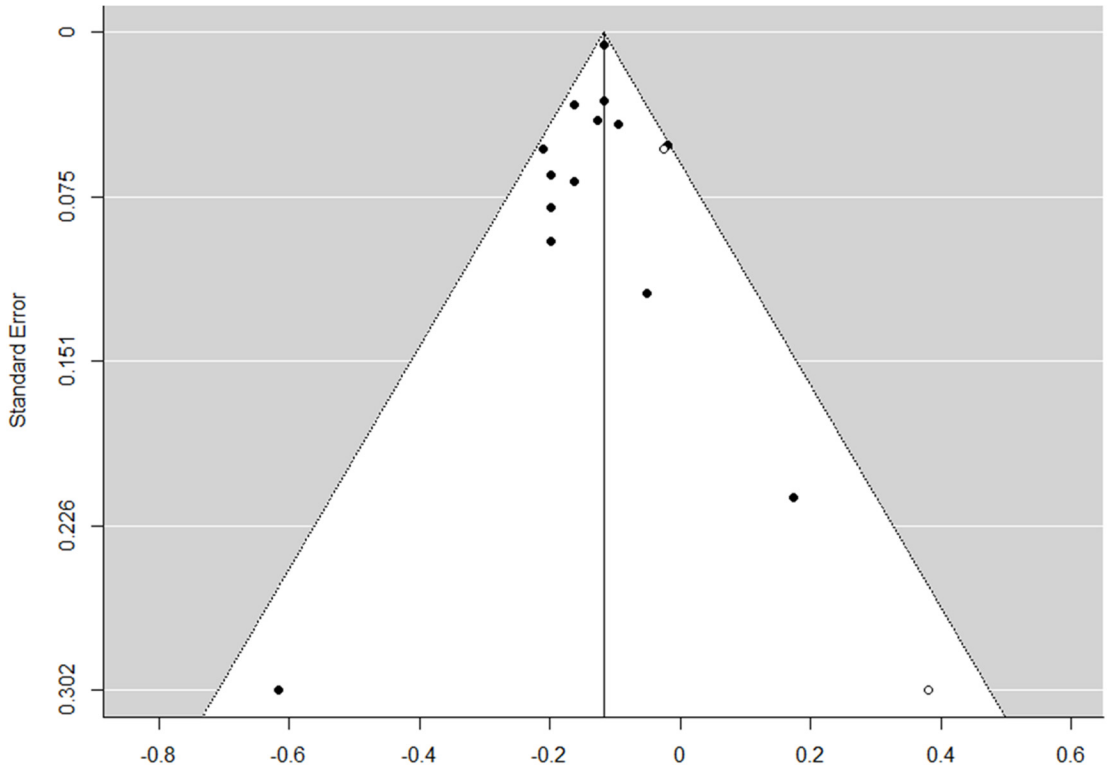
Suppl. Figure S105. Funnel plot comparing Asian and White patients (reference) regarding waitlisting.



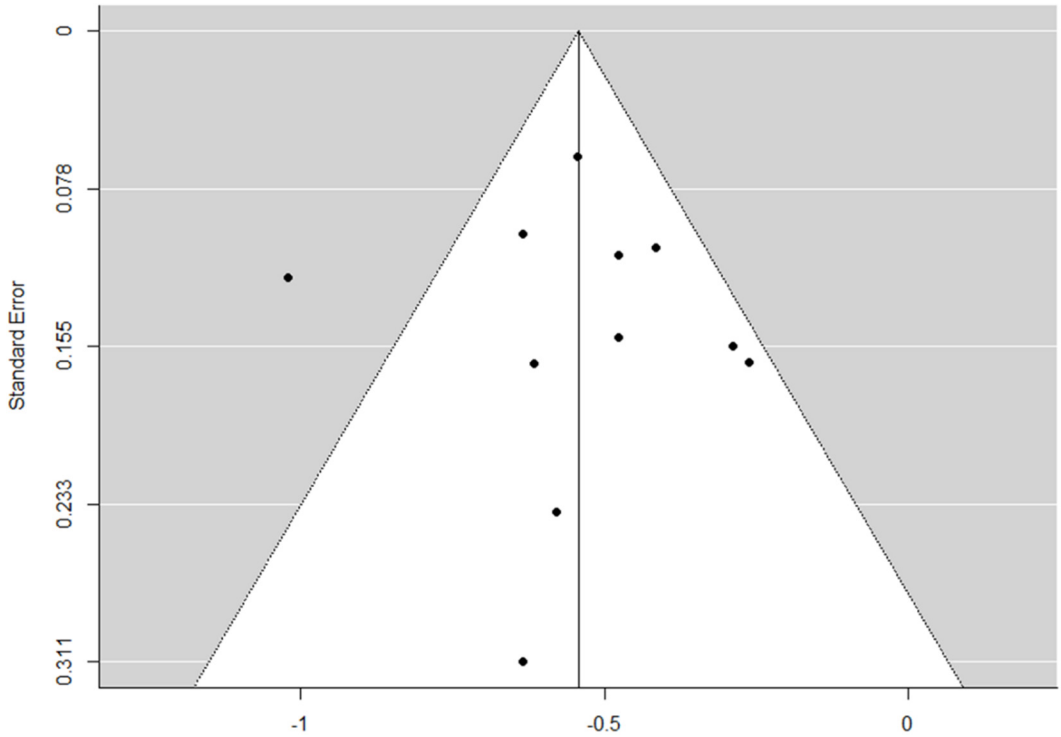
Suppl. Figure S106. Funnel plot comparing Indigenous and White patients (reference) regarding waitlisting.



Suppl. Figure S107. Funnel plot comparing Hispanic and White patients (reference) regarding waitlisting.

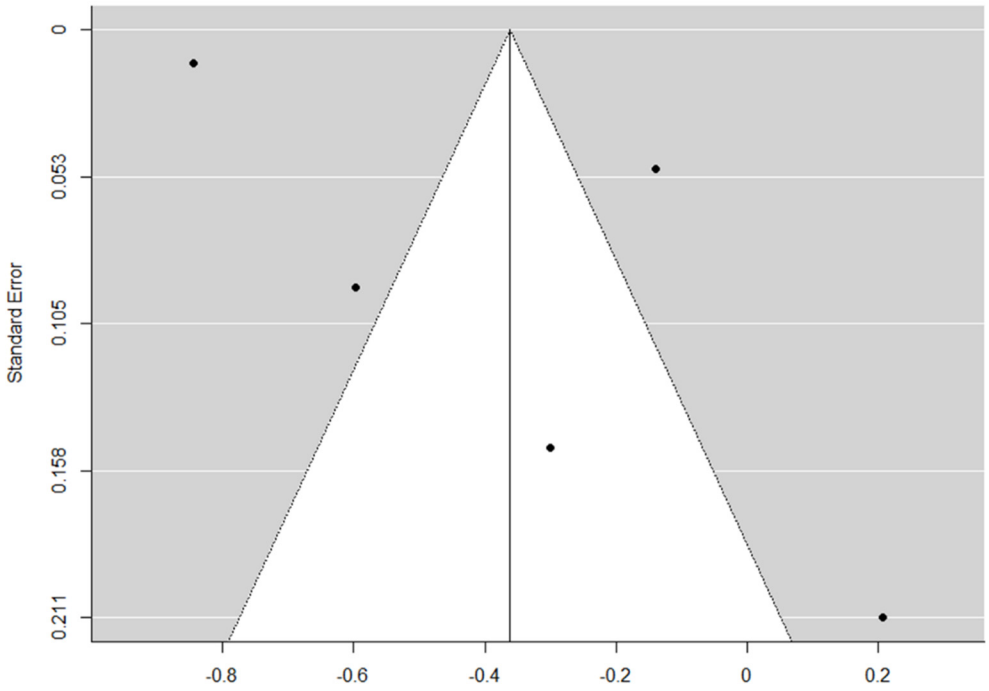


Suppl. Figure S108. Funnel plot of female patients (reference) and waitlisting.

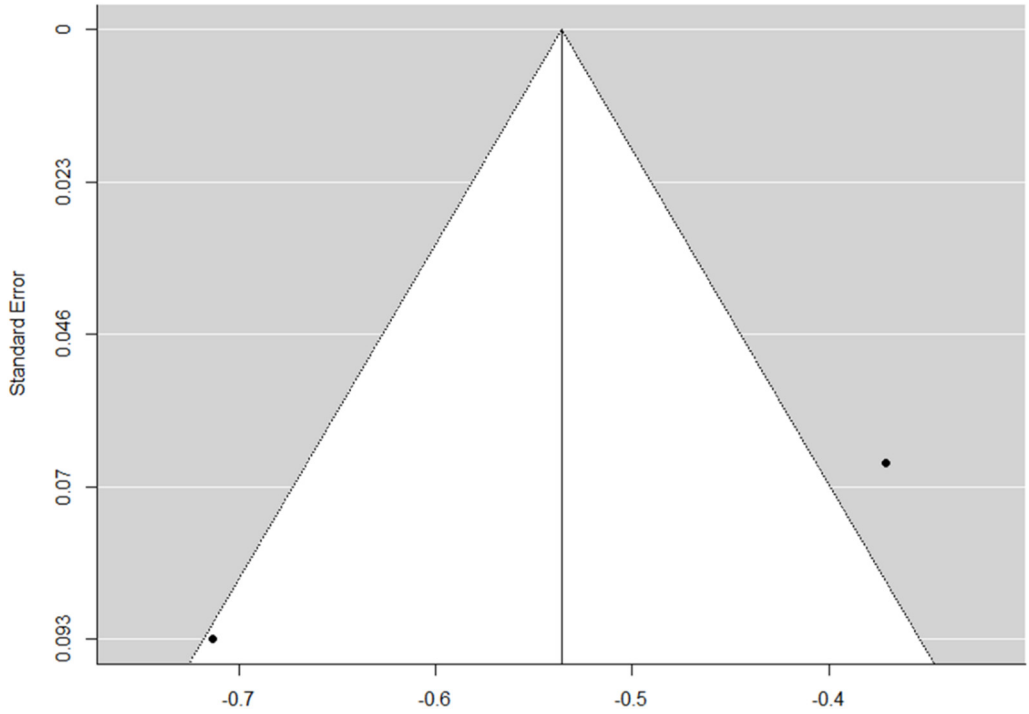


Suppl. Figure S109. Funnel plot comparing low and high socioeconomic status patients (reference) regarding waitlisting.

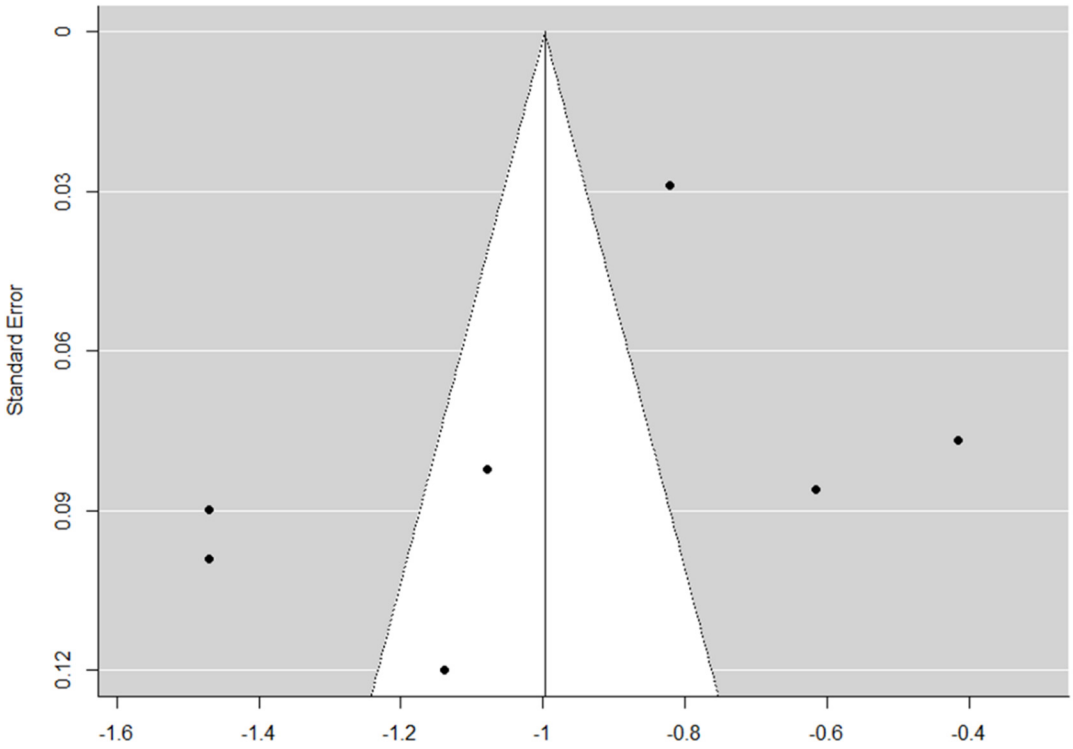
6.10. Kidney transplantation



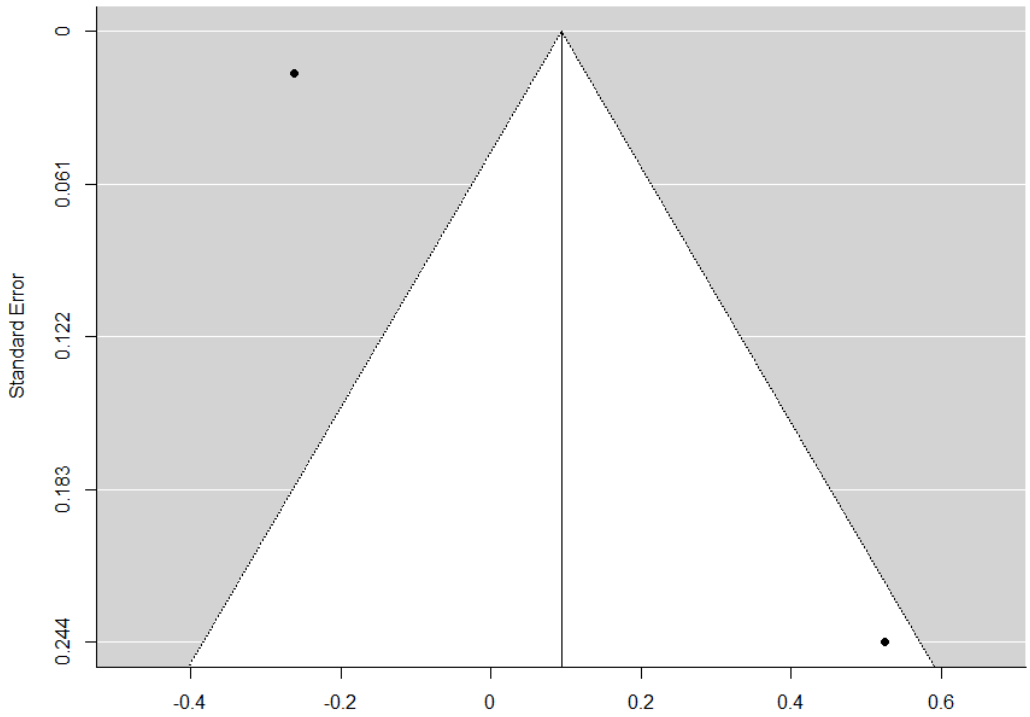
Suppl. Figure S110. Funnel plot comparing Black and White patients (reference) regarding kidney transplantation.



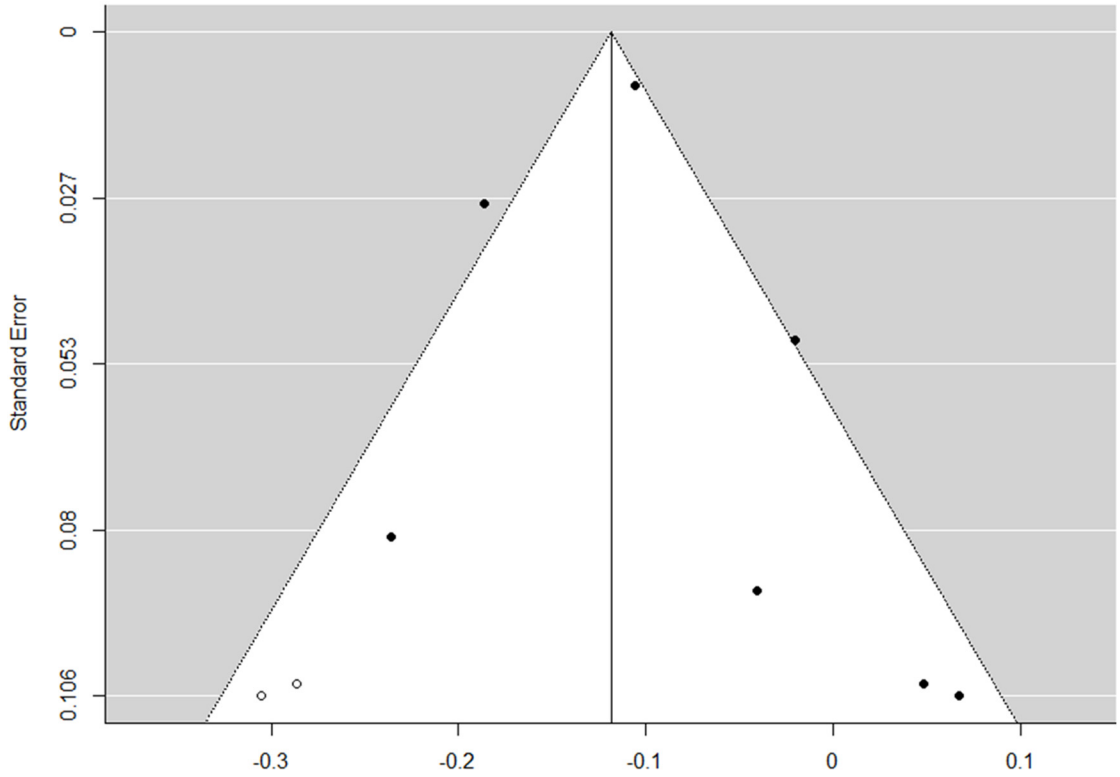
Suppl. Figure S111. Funnel plot comparing Asian and White patients (reference) regarding kidney transplantation.



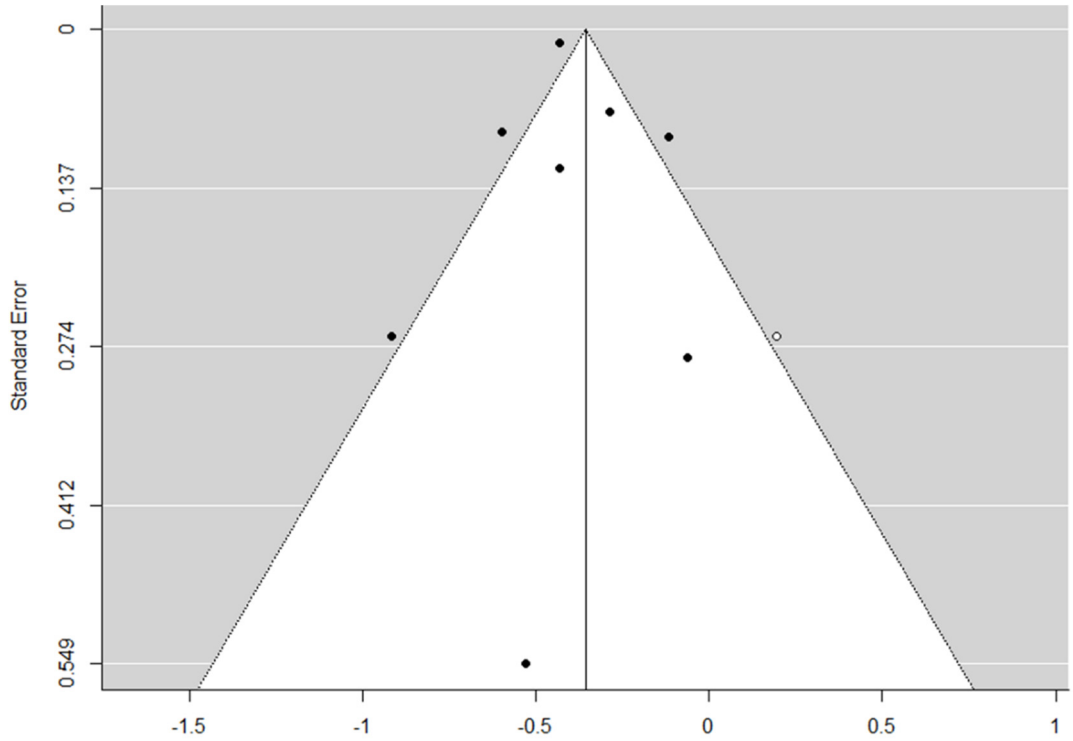
Suppl. Figure S112. Funnel plot comparing Indigenous and White patients (reference) regarding kidney transplantation.



Suppl. Figure S113. Funnel plot comparing Hispanic and White patients (reference) regarding kidney transplantation.

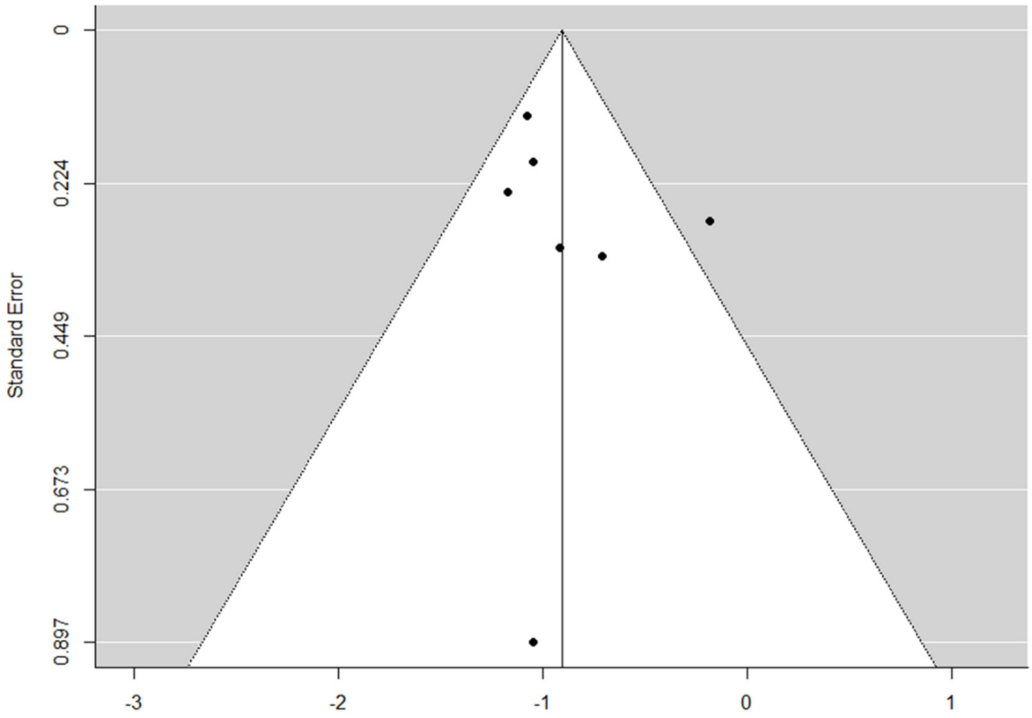


Suppl. Figure S114. Funnel plot of female patients (reference) and kidney transplantation.

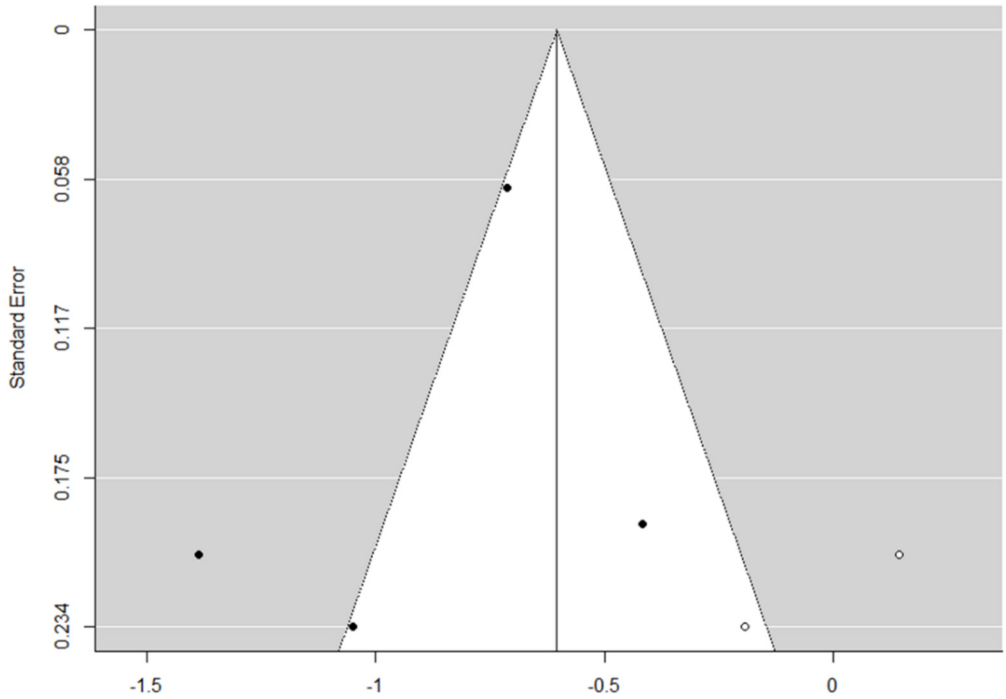


Suppl. Figure S115. Funnel plot comparing low and high socioeconomic status patients (reference) regarding kidney transplantation.

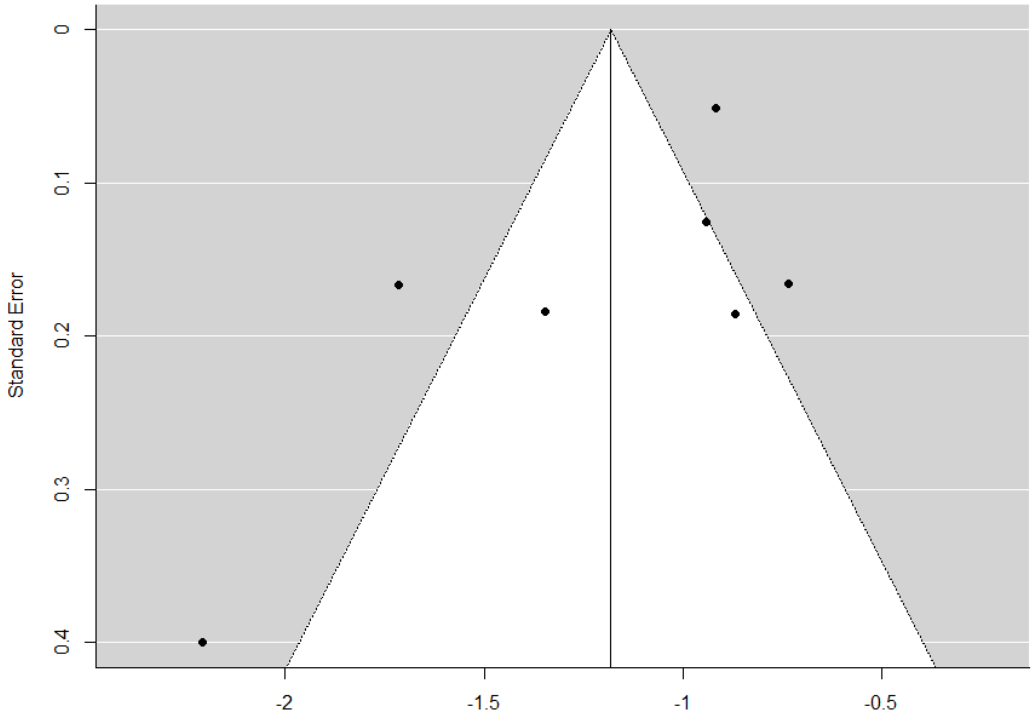
6.11. Living-donor transplantation



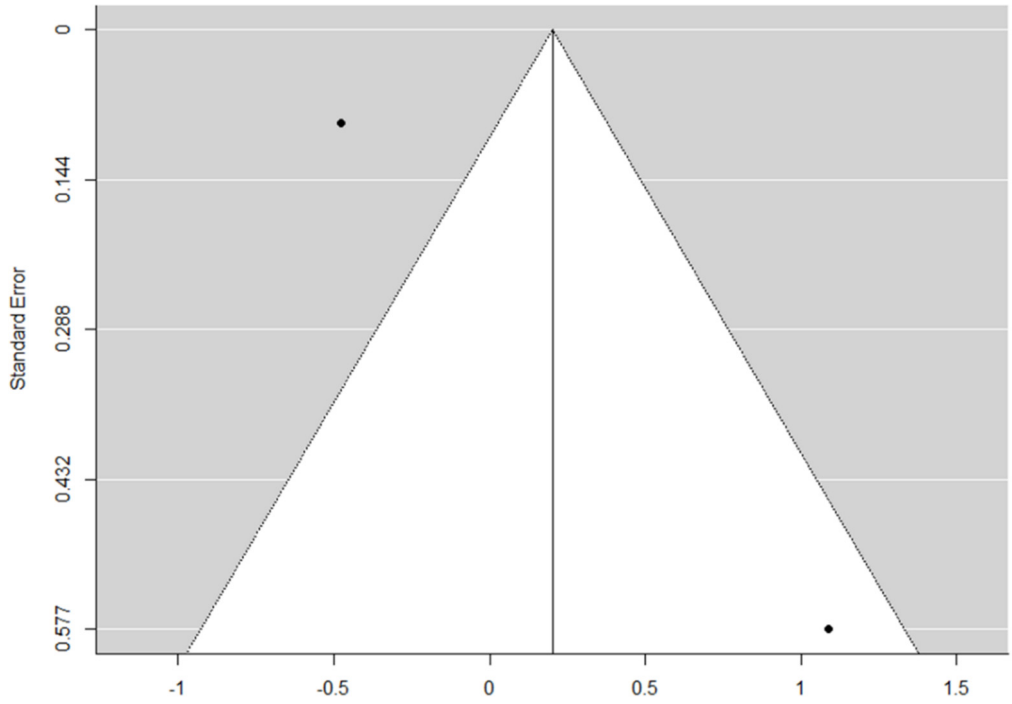
Suppl. Figure S116. Funnel plot comparing Black and White patients (reference) regarding living-donor transplantation.



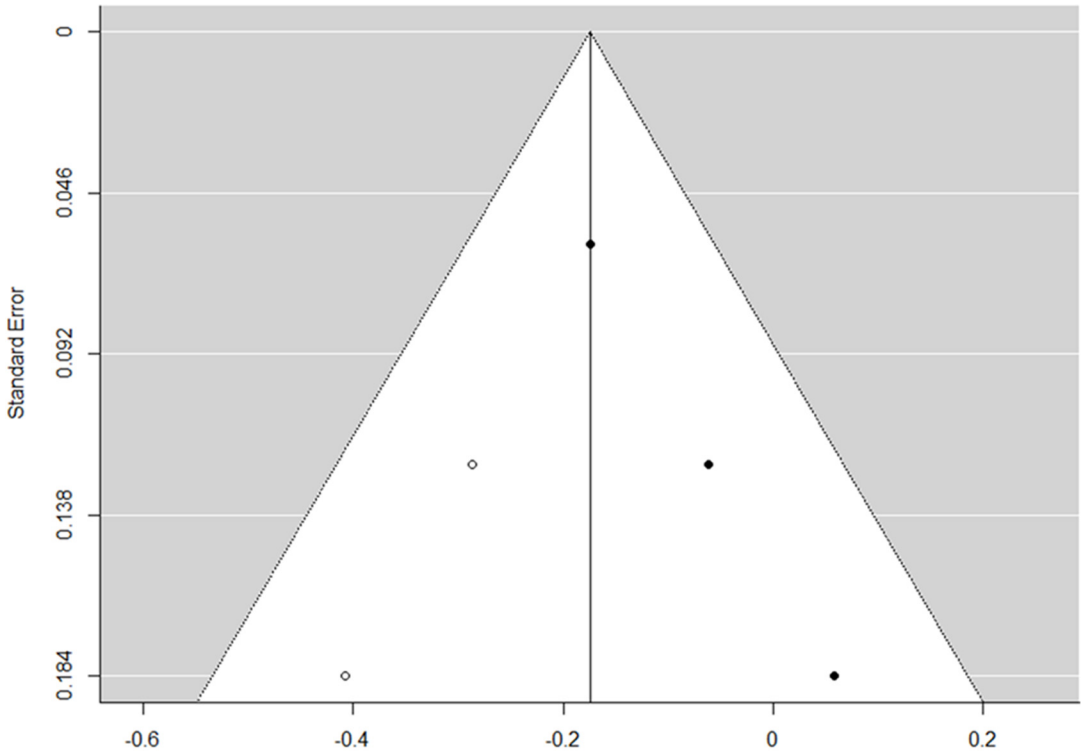
Suppl. Figure S117. Funnel plot comparing Asian and White patients (reference) regarding living-donor transplantation.



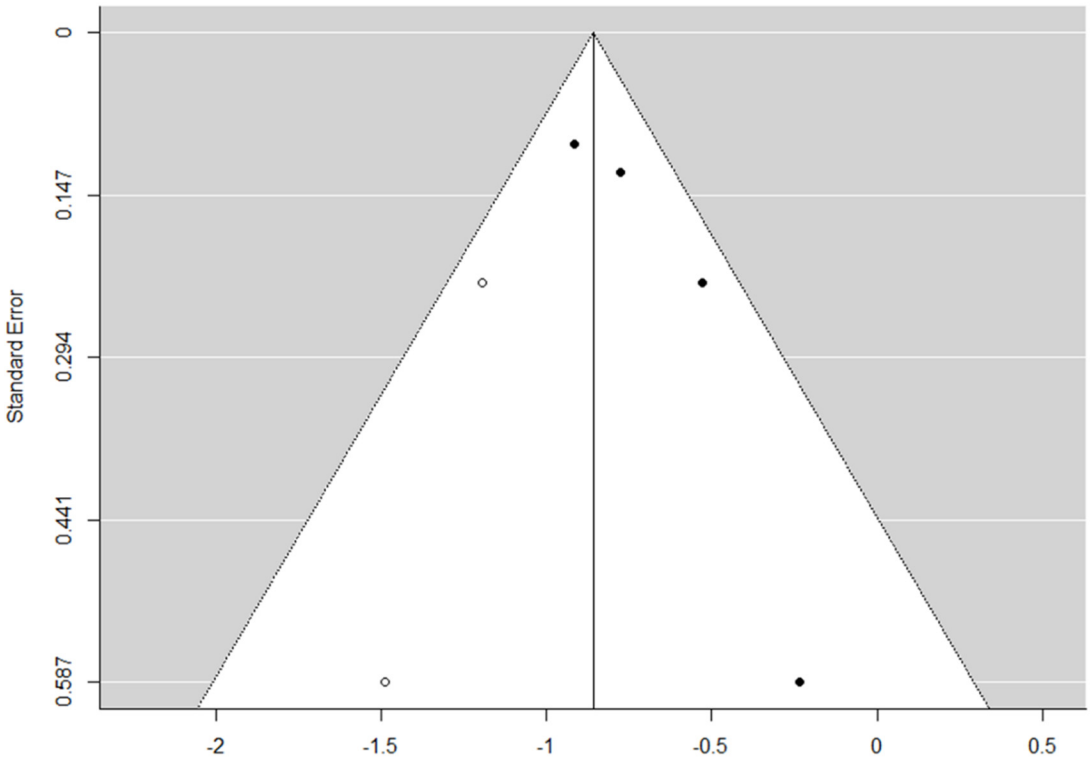
Suppl. Figure S118. Funnel plot comparing Indigenous and White patients (reference) regarding living-donor transplantation.



Suppl. Figure S119. Funnel plot comparing Hispanic and White patients (reference) regarding living-donor transplantation.

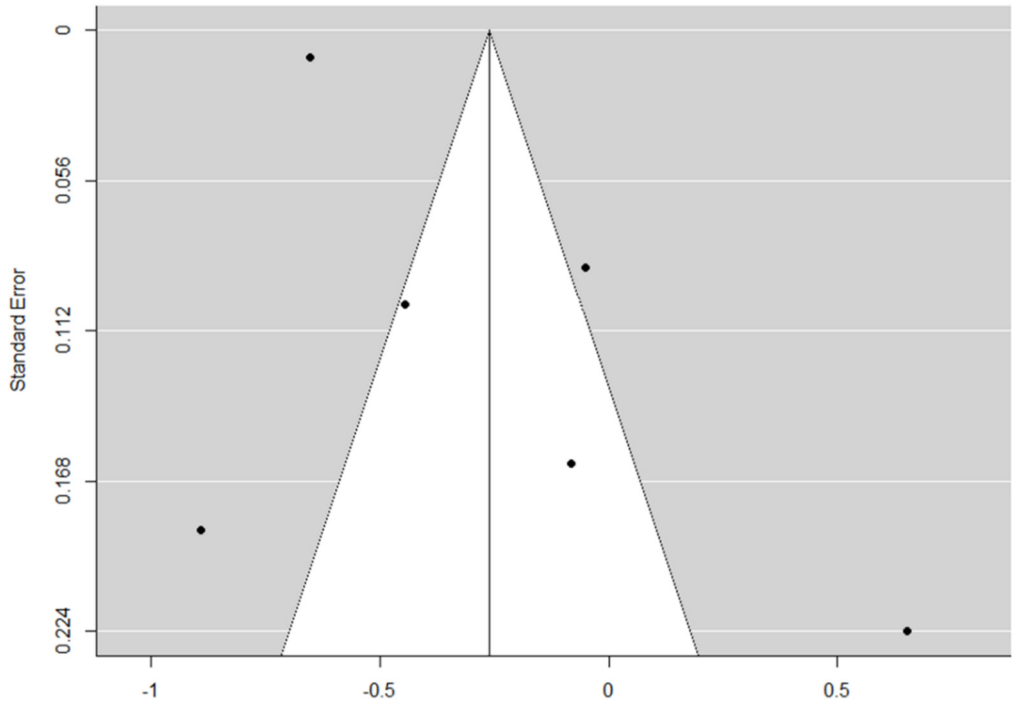


Suppl. Figure S120. Funnel plot of female patients (reference) and living-donor transplantation.

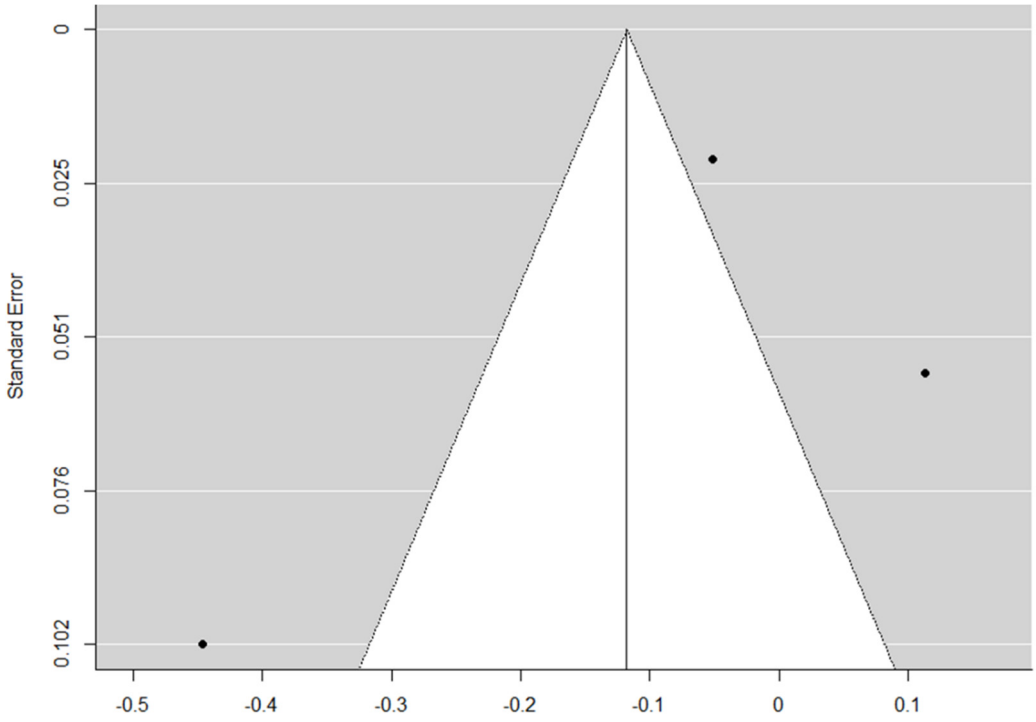


Suppl. Figure S121. Funnel plot comparing low and high socioeconomic status patients (reference) regarding living-donor transplantation.

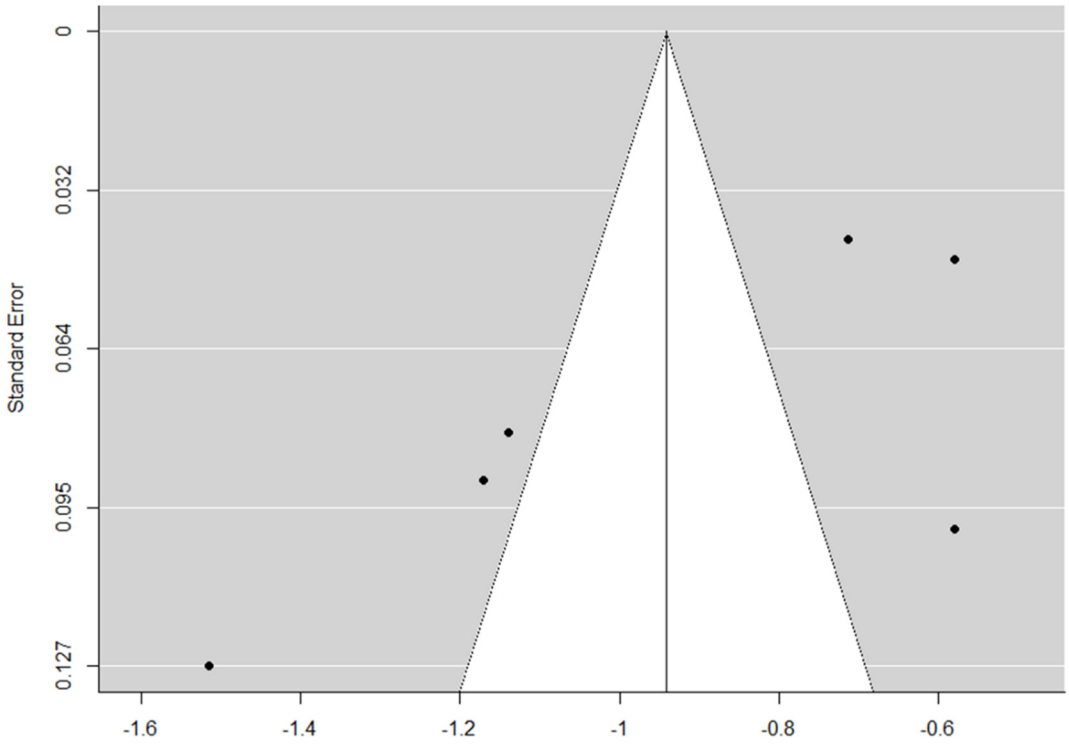
6.12. Deceased-donor transplantation



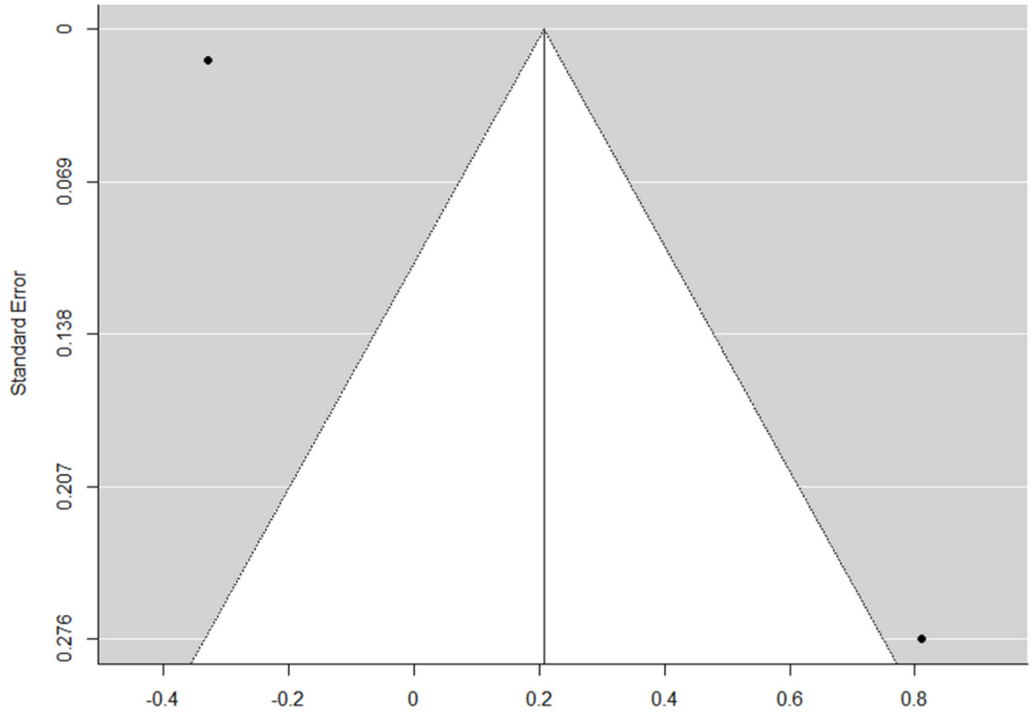
Suppl. Figure S122. Funnel plot comparing Black and White patients (reference) regarding deceased-donor transplantation.



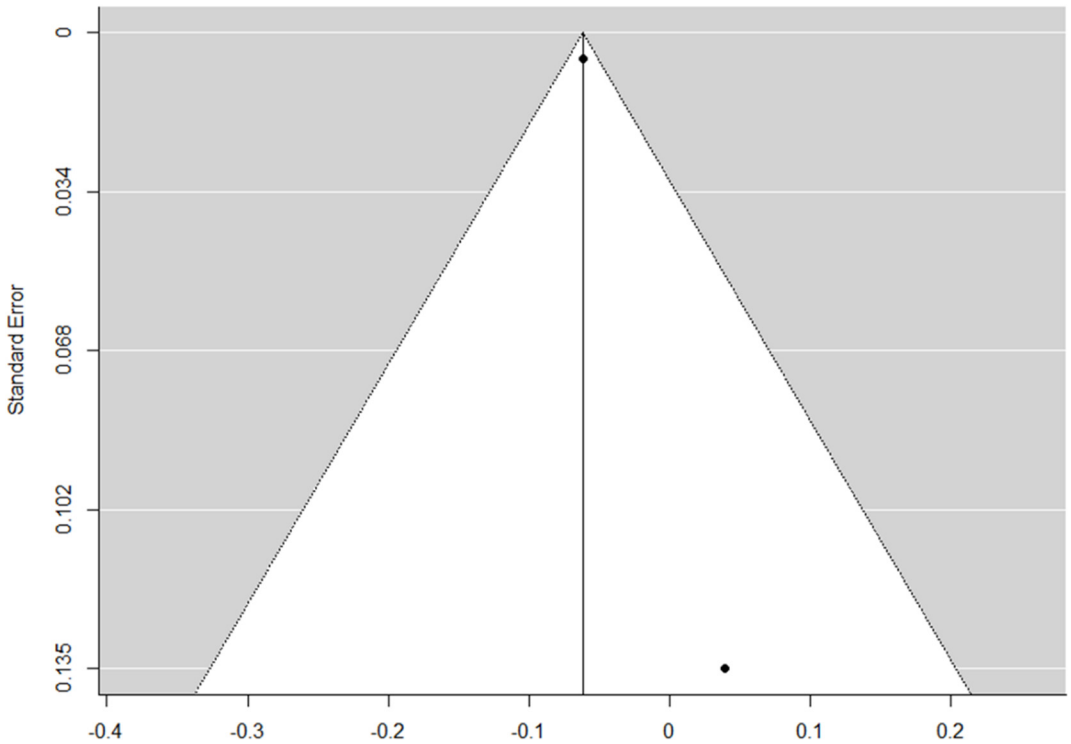
Suppl. Figure S123. Funnel plot comparing Asian and White patients (reference) regarding deceased-donor transplantation.



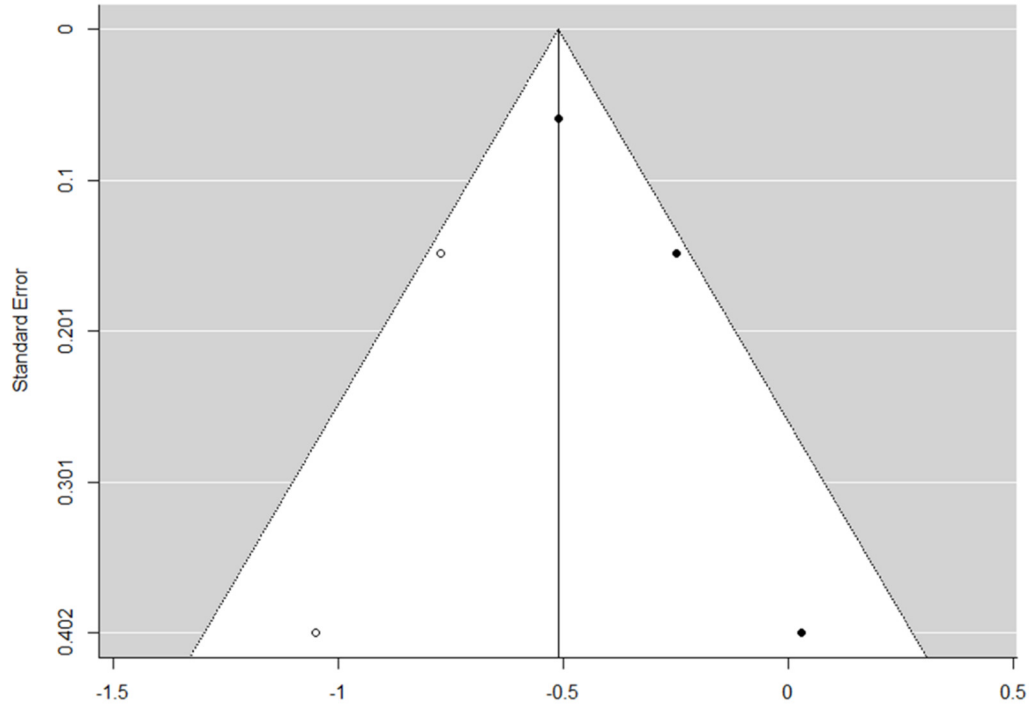
Suppl. Figure S124. Funnel plot comparing Indigenous and White patients (reference) regarding deceased-donor transplantation.



Suppl. Figure S125. Funnel plot comparing Hispanic and White patients (reference) regarding deceased-donor transplantation.

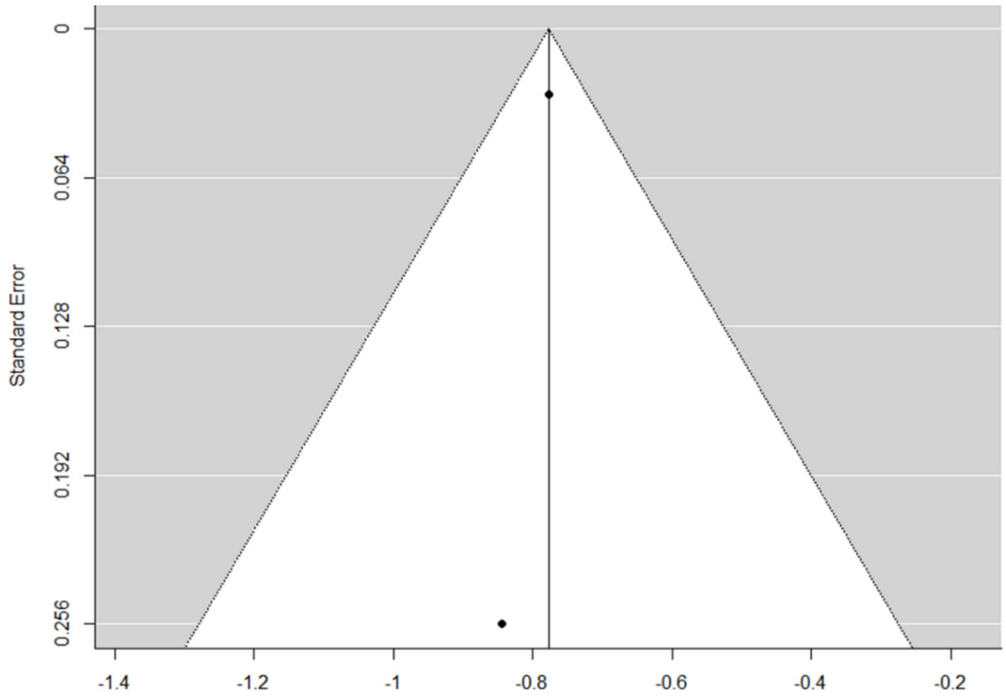


Suppl. Figure S126. Funnel plot of female patients (reference) and deceased-donor transplantation.

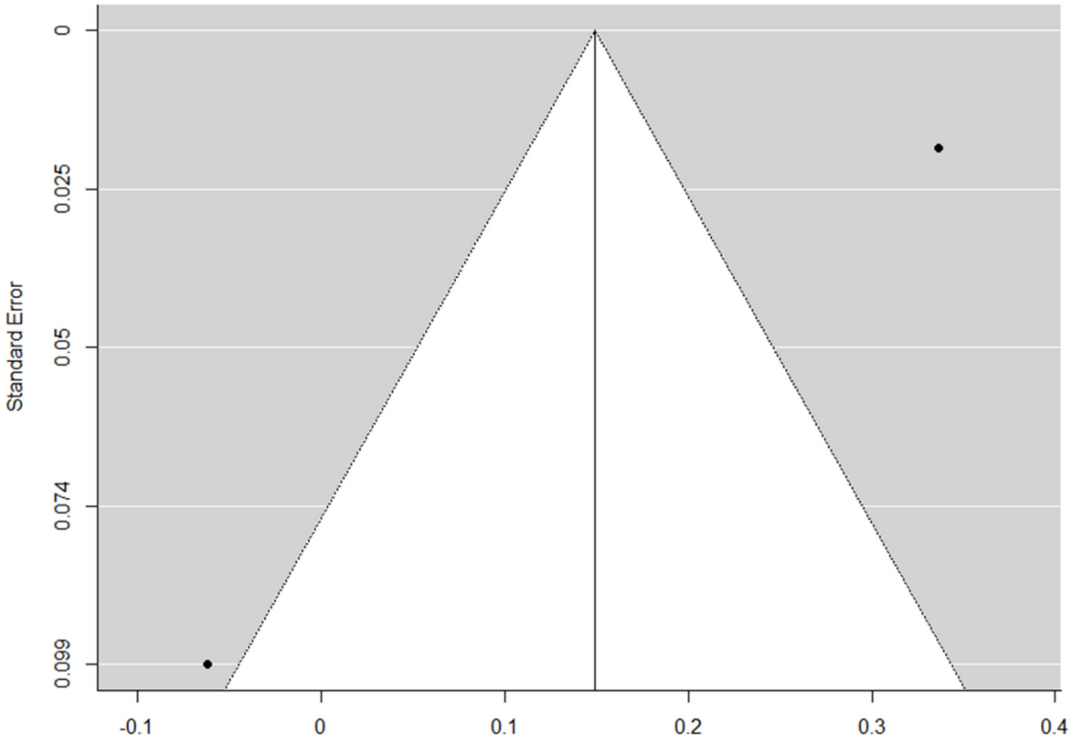


Suppl. Figure S127. Funnel plot comparing low and high socioeconomic status patients (reference) regarding deceased-donor transplantation.

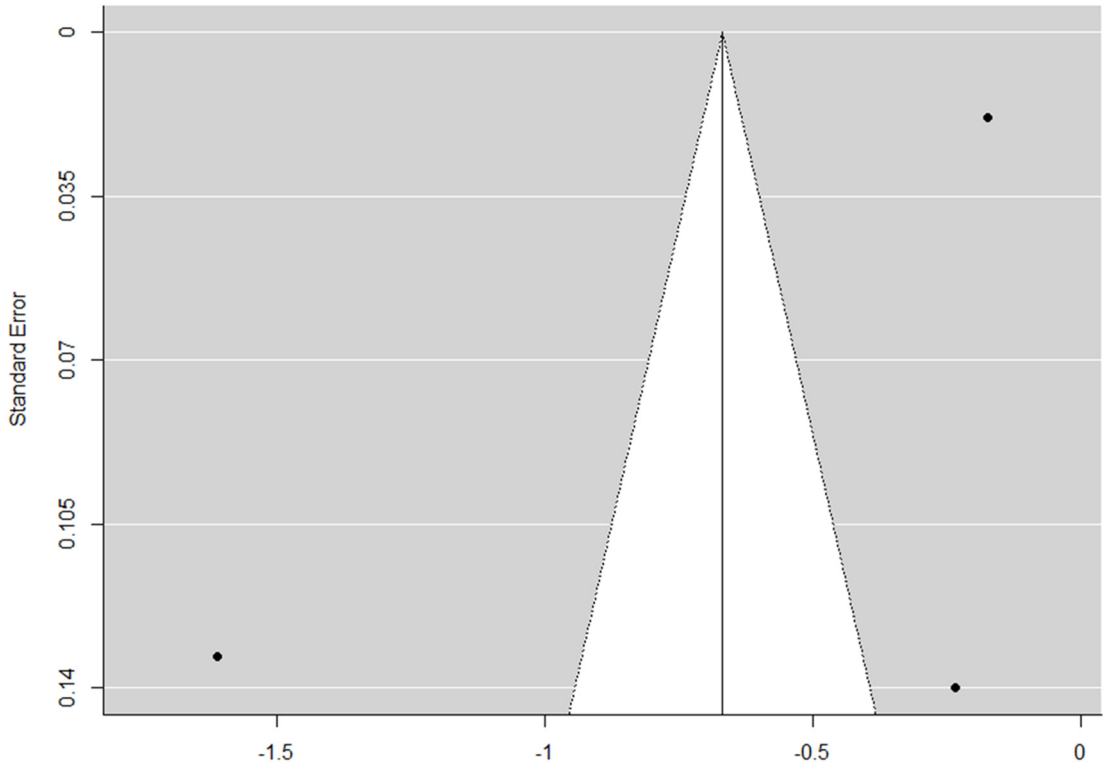
6.13. Preemptive transplantation



Suppl. Figure S128. Funnel plot comparing Black and White patients (reference) regarding preemptive transplantation.

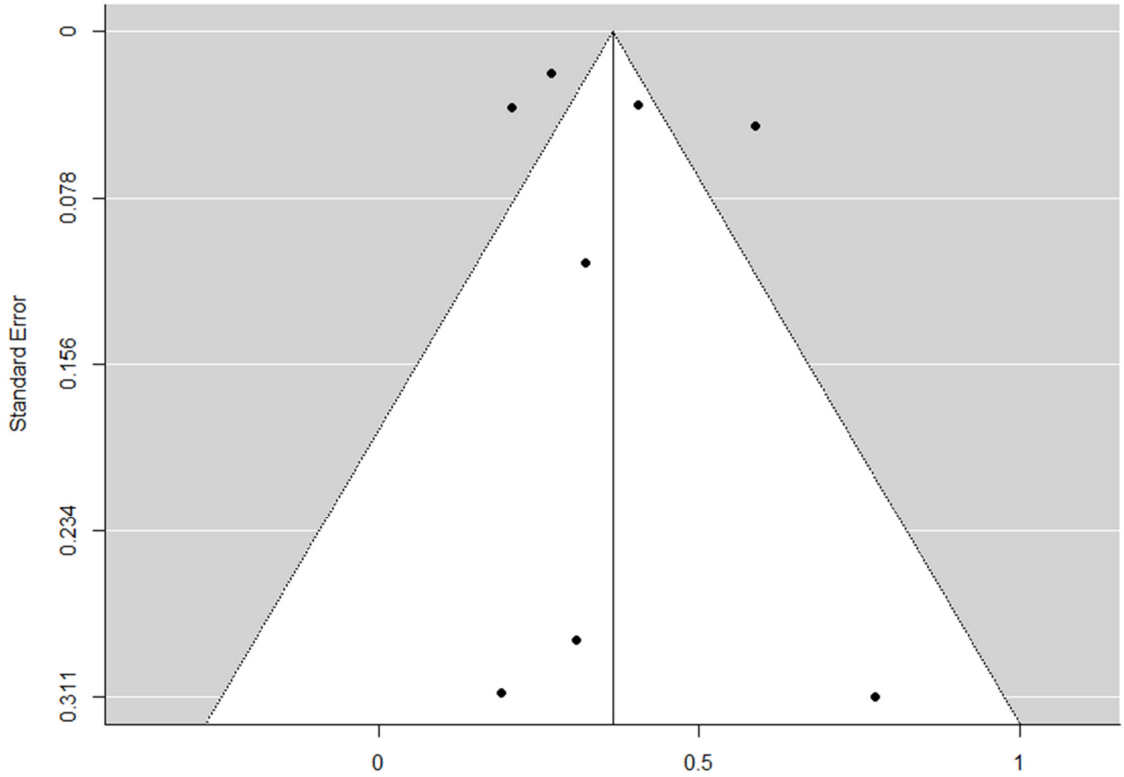


Suppl. Figure S129. Funnel plot of female patients (reference) and preemptive transplantation.

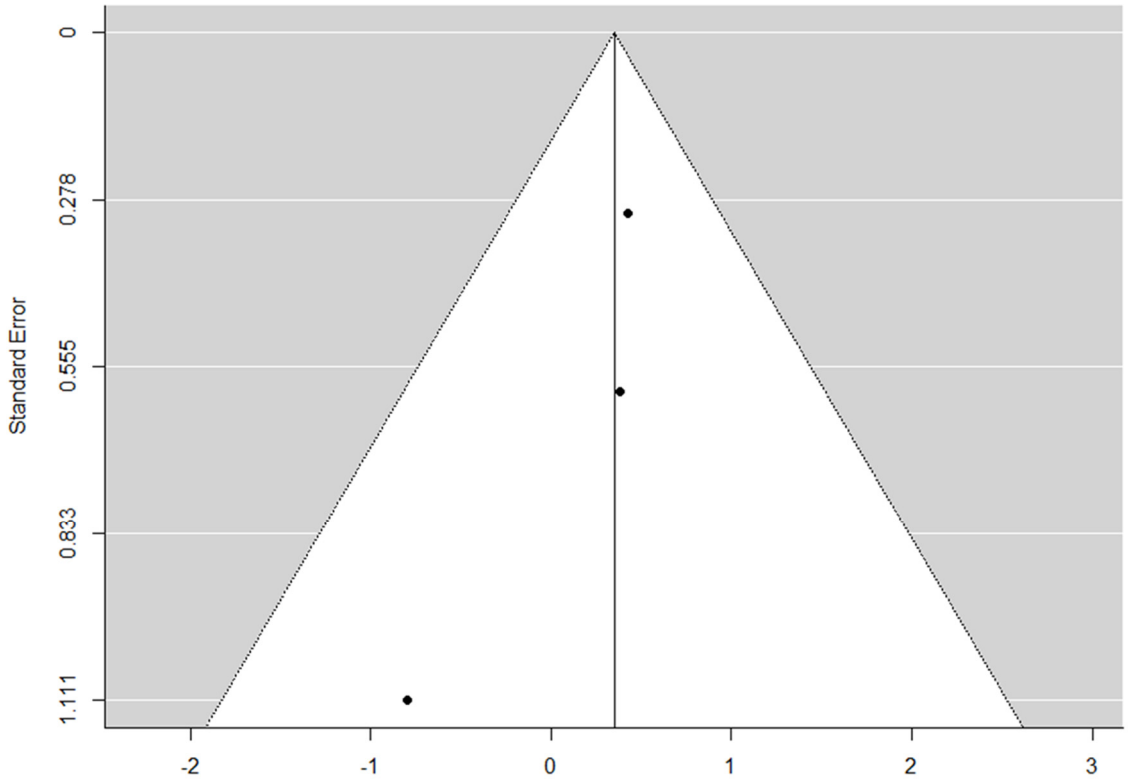


Suppl. Figure S130. Funnel plot comparing low and high socioeconomic status patients (reference) regarding preemptive transplantation.

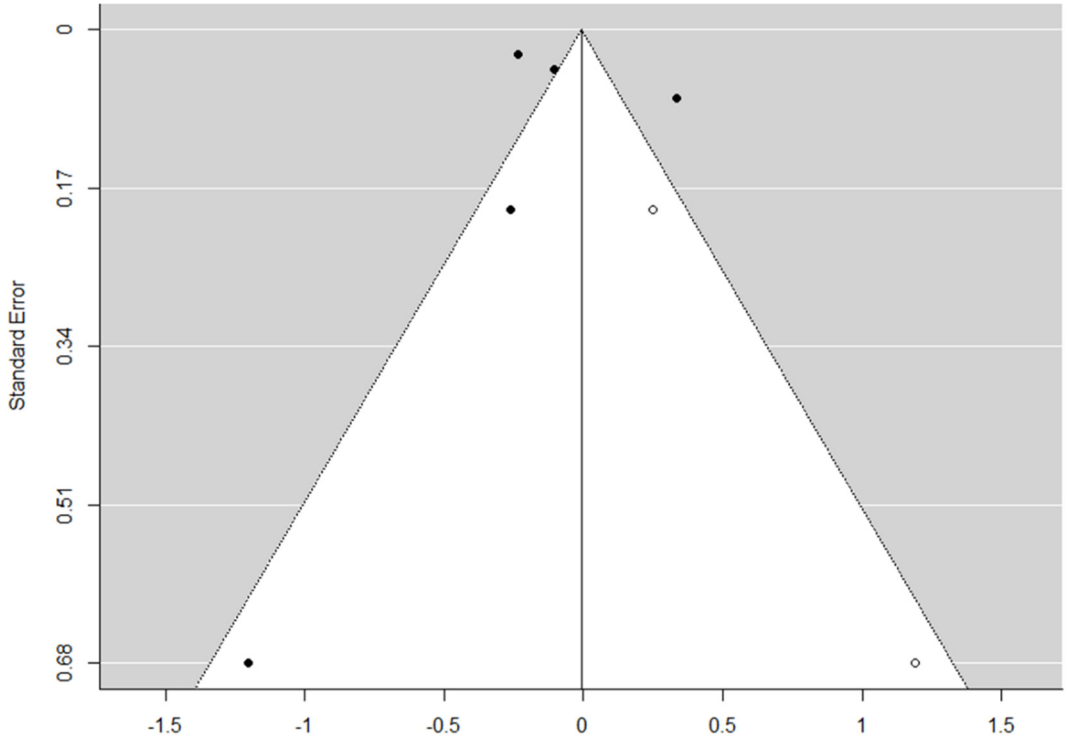
6.14. Graft survival



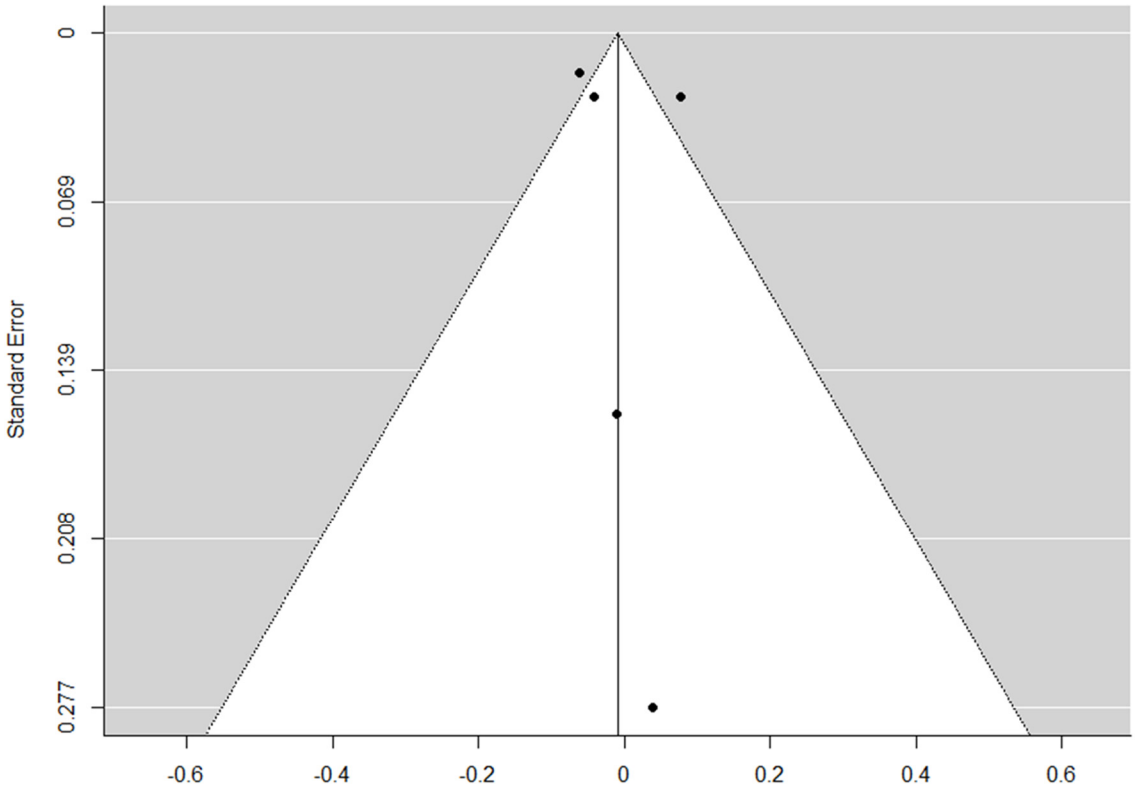
Suppl. Figure S131. Funnel plot comparing Black and White patients (reference) regarding graft survival.



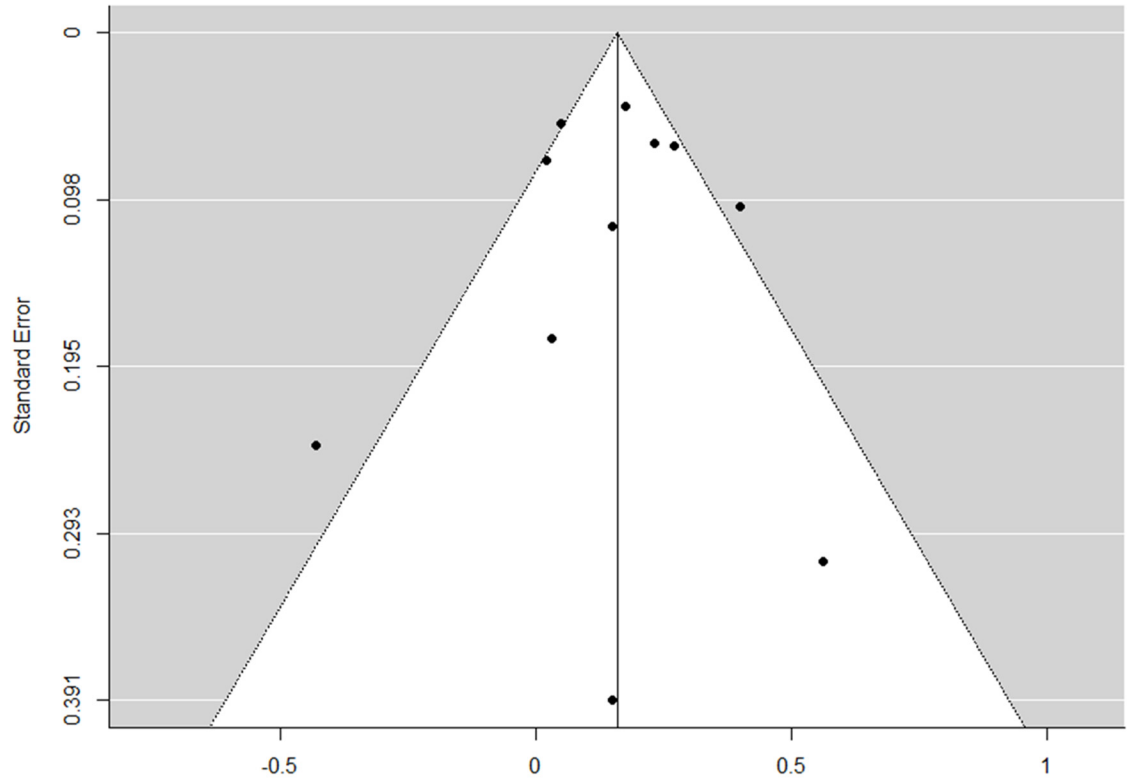
Suppl. Figure S132. Funnel plot comparing Indigenous and White patients (reference) regarding graft survival.



Suppl. Figure S133. Funnel plot comparing Hispanic and White patients (reference) regarding graft survival.

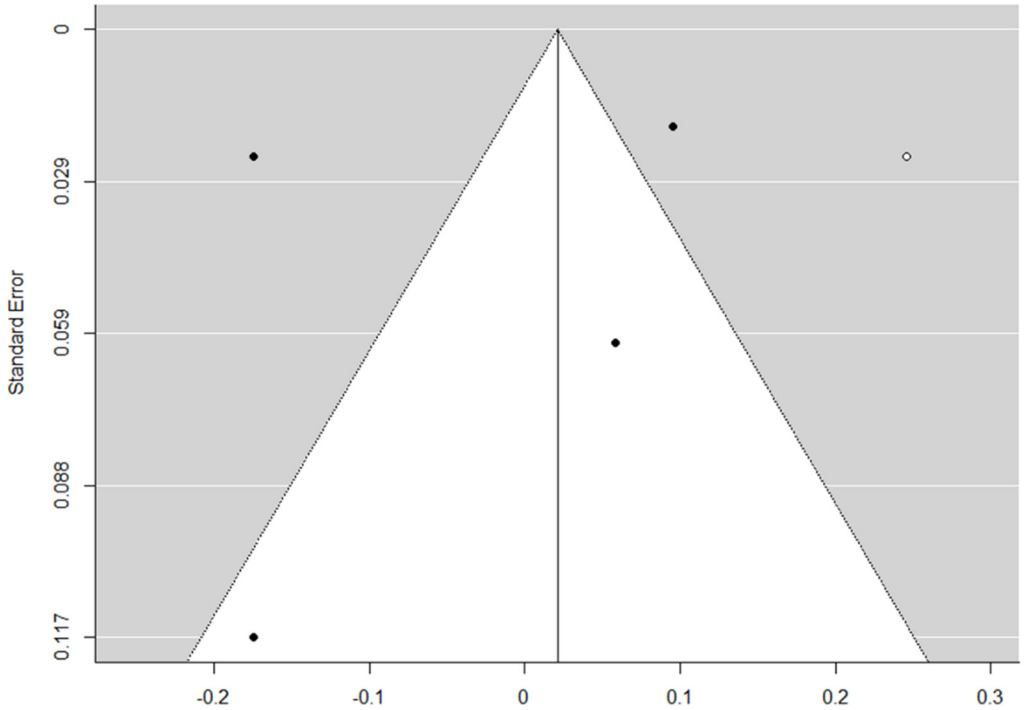


Suppl. Figure S134. Funnel plot of female patients (reference) and graft survival.

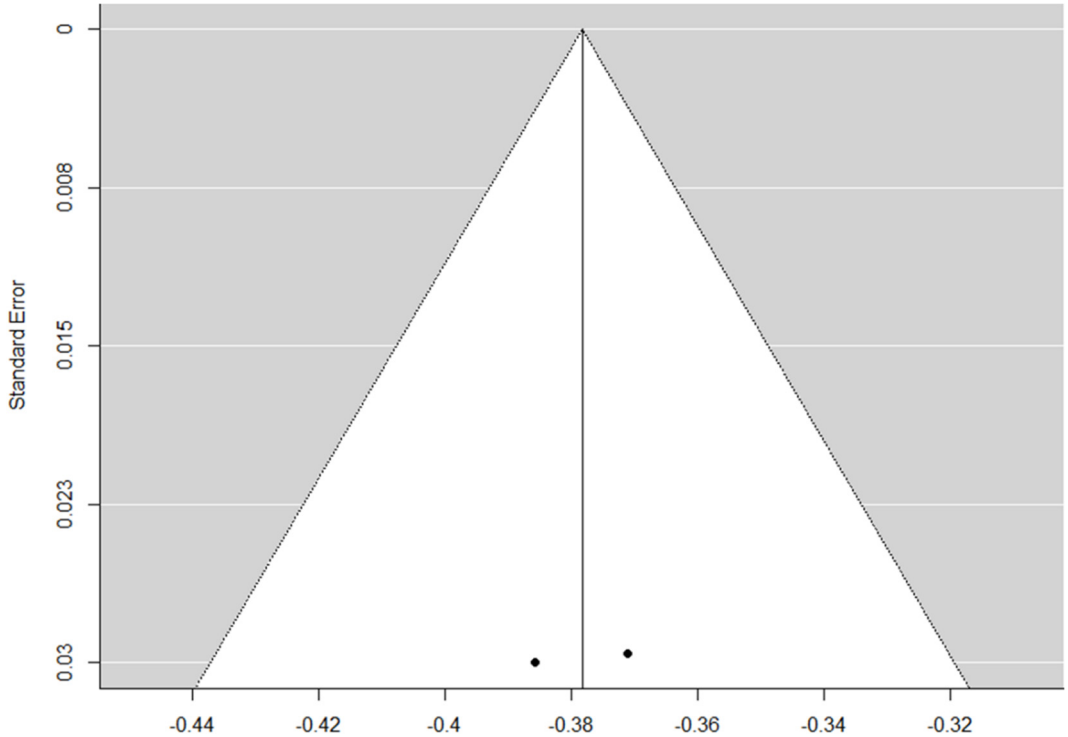


Suppl. Figure S135. Funnel plot comparing low and high socioeconomic status patients (reference) regarding graft survival.

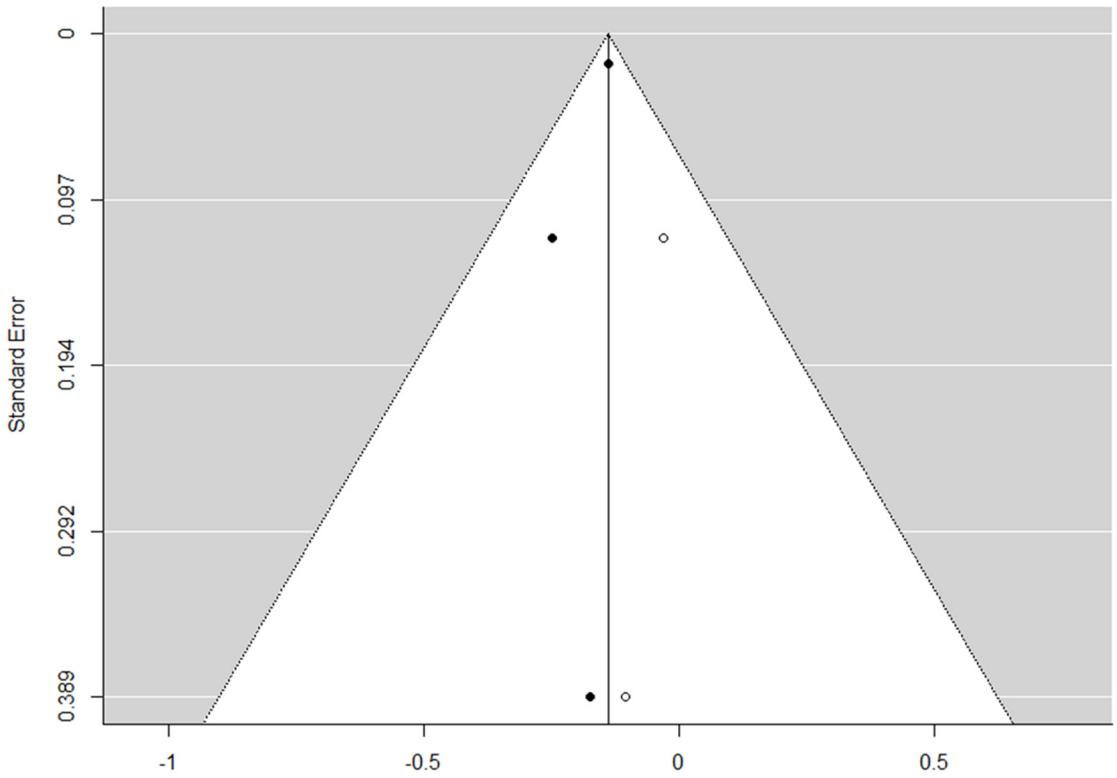
6.15. Kidney transplantation survival



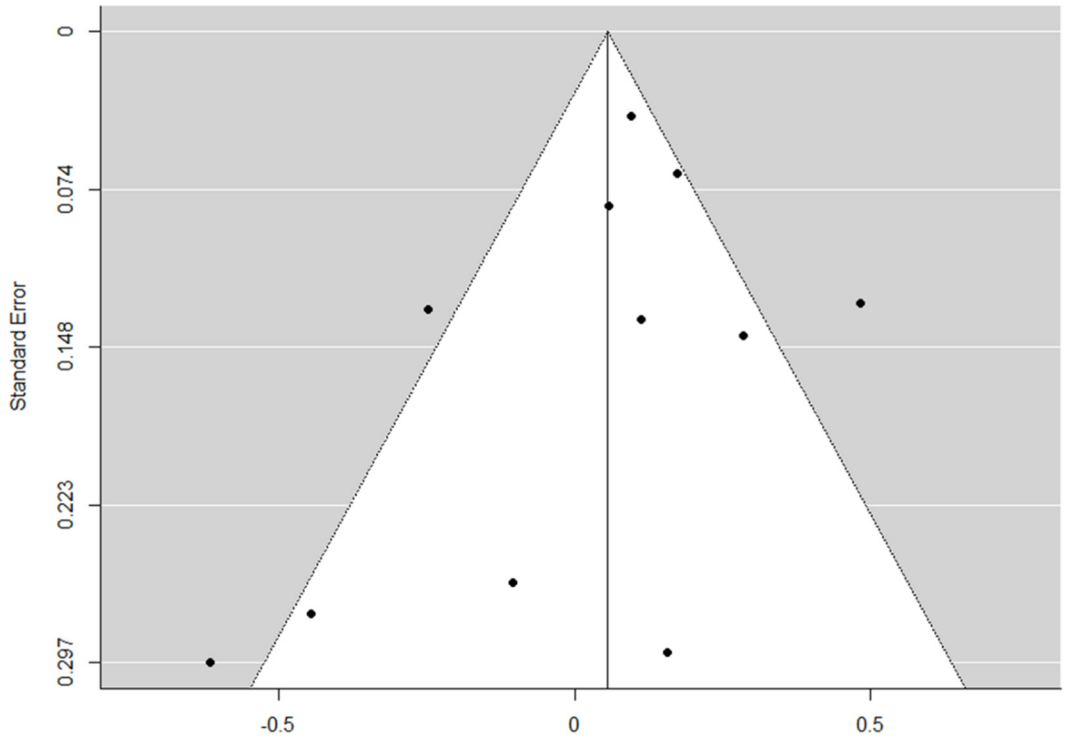
Suppl. Figure S136. Funnel plot comparing Black and White patients (reference) regarding kidney transplantation survival.



Suppl. Figure S137. Funnel plot comparing Hispanic and White patients (reference) regarding kidney transplantation survival.



Suppl. Figure S138. Funnel plot of female patients (reference) and kidney transplantation survival.



Suppl. Figure S139. Funnel plot comparing low and high socioeconomic status patients (reference) regarding kidney transplantation survival.

Supplementary S7: Subgroup analyses

Suppl. Table S5. Subgroup analysis of the meta-analysis regarding female patients and dialysis initiation with arteriovenous fistula or graft.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	2	0.85 (0.84-0.86)	0.611
Oceania	2	0.67 (0.31-1.43)	
Risk of bias			
Low	4	0.78 (0.60-1.02)	0.899
Moderate	1	0.81 (0.72-0.91)	

Suppl. Table S6. Subgroup analysis of the meta-analysis regarding low socioeconomic status and dialysis initiation with arteriovenous fistula or graft.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	4	0.84 (0.69-1.03)	0.216
Oceania	1	0.48 (0.22-1.05)	
Exposure			
Low income	2	0.89 (0.71-1.12)	
Low education	2	0.56 (0.41-0.77)	0.063
Unemployment	1	0.95 (0.84-1.08)	

Suppl. Table S7. Subgroup analysis of the meta-analysis regarding female patients and primary arteriovenous fistula patency.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	2	0.79 (0.72-0.87)	
Europe	1	0.50 (0.34-0.73)	**0.025**
International	1	1.19 (0.68-2.10)	
Risk of bias			
Low	3	0.80 (0.73-0.88)	**0.020**
Moderate	1	0.50 (0.34-0.73)	

Suppl. Table S8. Subgroup analysis of the meta-analysis regarding low socioeconomic status and primary arteriovenous fistula patency.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
Oceania	1	079 (0.66-0.94)	
Europe	1	0.87 (0.48-1.56)	N/A
Asia	1	0.39 (0.18-0.84)	
Risk of bias			
Low	1	0.79 (0.66-0.94)	0.663
Moderate	2	0.61 (0.28-1.33)	
Exposure			
Low income	2	0.80 (0.67-0.94)	0.076
Low education	1	0.39 (0.18-0.84)	

Suppl. Table S9. Subgroup analysis of the meta-analysis regarding Black patients and peritoneal dialysis use.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
USA	4	0.58 (0.46-0.73)	**0.019**
Canada	1	1.04 (0.94-1.15)	
Risk of bias			
Low	2	0.87 (0.63-1.22)	
Moderate	2	0.49 (0.40-0.60)	**0.026**
Serious	1	0.58 (0.42-0.80)	

Suppl. Table S10. Subgroup analysis of the meta-analysis regarding female patients and peritoneal dialysis use.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	4	1.06 (0.97-1.17)	
Europe	1	0.69 (0.50-0.96)	**0.002**
Asia	1	2.13 (0.77-5.89)	
Oceania	1	1.33 (1.25-1.41)	
Risk of bias			
Low	2	1.04 (0.88-1.23)	
Moderate	4	1.08 (0.76-1.53)	0.925
Serious	1	1.17 (0.90-1.53)	

Suppl. Table S11. Subgroup analysis of the meta-analysis regarding low socioeconomic status and peritoneal dialysis use.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	2	0.47 (0.40-0.55)	**<0.001**
Europe	1	0.59 (0.45-0.78)	
Asia	1	0.48 (0.14-1.63)	
Oceania	1	0.73 (0.66-0.81)	
Risk of bias			
Moderate	4	0.59 (0.46-0.76)	0.280
Serious	1	0.44 (0.33-0.58)	
Exposure			
Low income	4	0.49 (0.43-0.57)	**<0.001**
Low education	1	0.73 (0.66-0.81)	

Suppl. Table S12. Subgroup analysis of the meta-analysis regarding Black patients and dialysis mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	11	0.74 (0.69-0.80)	**<0.001**
South America	1	0.69 (0.50-0.96)	
Europe	6	0.50 (0.44-0.56)	
Population			
Hemodialysis	6	0.72 (0.71-0.73)	0.932
Peritoneal dialysis	1	0.69 (0.50-0.96)	
Mixed	11	0.66 (0.57-0.76)	
Risk of bias			
Low	12	0.68 (0.60-0.77)	0.815
Moderate	6	0.65 (0.56-0.76)	

Suppl. Table S13. Subgroup analysis of the meta-analysis regarding Asian patients and dialysis mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	5	0.68 (0.59-0.79)	0.381
Europe	4	0.68 (0.61-0.76)	
Oceania	3	0.60 (0.49-0.73)	
Asia	1	0.48 (0.25-0.92)	
Population			
Hemodialysis	2	0.62 (0.51-0.77)	0.541
Peritoneal dialysis	4	0.61 (0.45-0.84)	
Mixed	8	0.69 (0.63-0.76)	
Risk of bias			
Low	10	0.67 (0.61-0.74)	0.628
Moderate	3	0.66 (0.50-0.89)	
Serious	1	0.48 (0.25-0.92)	

Suppl. Table S14. Subgroup analysis of the meta-analysis regarding Indigenous patients and dialysis mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	5	0.99 (0.76-1.27)	0.725
Oceania	6	1.05 (0.79-1.41)	
Population			
Hemodialysis	2	0.69 (0.67-0.71)	**<0.001**
Peritoneal dialysis	2	0.72 (0.55-0.93)	
Mixed	7	1.22 (1.07-1.40)	
Risk of bias			
Low	9	0.99 (0.79-1.24)	0.533
Moderate	2	1.15 (0.87-0.53)	

Suppl. Table S15. Subgroup analysis of the meta-analysis regarding Hispanic patients and dialysis mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	7	0.81 (0.73-0.89)	0.495
South America	1	0.71 (0.54-0.94)	
Population			
Hemodialysis	4	0.78 (0.70-0.86)	
Peritoneal dialysis	1	0.71 (0.54-0.94)	0.676
Mixed	3	0.83 (0.70-0.99)	
Risk of bias			
Low	8	0.81 (0.73-0.89)	0.495
Moderate	1	0.71 (0.54-0.94)	

Suppl. Table S16. Subgroup analysis of the meta-analysis regarding female patients and dialysis mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	2	0.98 (0.95-1.01)	
South America	1	0.97 (0.90-1.05)	
Europe	10	0.96 (0.93-1.00)	0.663
Asia	8	1.02 (0.87-1.21)	
Oceania	4	1.05 (0.95-1.15)	
Africa	1	1.12 (0.75-1.68)	
Population			
Hemodialysis	3	0.88 (0.73-1.05)	
Peritoneal dialysis	11	1.00 (0.91-1.09)	0.203
Mixed	12	1.02 (0.96-1.08)	
Risk of bias			
Low	14	0.98 (0.92-1.04)	
Moderate	6	0.98 (0.96-1.00)	0.815
Serious	6	0.98 (0.80-1.20)	

Suppl. Table S17. Subgroup analysis of the meta-analysis regarding low socioeconomic status and dialysis mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	4	1.10 (1.06-1.15)	
South America	4	1.28 (1.14-1.43)	
Europe	4	1.20 (1.10-1.31)	**<0.001**
Asia	8	1.62 (1.23-2.14)	
Oceania	3	1.12 (1.06-1.19)	
Population			
Hemodialysis	10	1.16 (1.09-1.25)	
Peritoneal dialysis	8	1.41 (1.11-1.79)	0.207
Mixed	5	1.12 (1.06-1.19)	
Risk of bias			
Low	18	1.16 (1.11-1.22)	**<0.001**
Moderate	5	2.12 (1.58-2.85)	

Suppl. Table S18. Subgroup analysis of the meta-analysis regarding Black patients and waitlisting.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	5	0.78 (0.68-0.90)	0.426
Europe	2	0.85 (0.46-1.56)	
Risk of bias			
Low	5	0.84 (0.77-0.92)	0.242
Moderate	2	0.70 (0.47-1.04)	

Suppl. Table S19. Subgroup analysis of the meta-analysis regarding Indigenous patients and waitlisting.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	2	0.77 (0.61-0.99)	**<0.001**
Oceania	1	0.46 (0.38-0.55)	
Risk of bias			
Low	2	0.56 (0.36-0.87)	0.366
Moderate	1	0.80 (0.59-1.08)	

Suppl. Table S20. Subgroup analysis of the meta-analysis regarding female patients and waitlisting.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	4	0.89 (0.88-0.90)	
Europe	9	0.89 (0.84-0.94)	0.560
Oceania	1	0.85 (0.80-0.91)	
Risk of bias			
Low	10	0.88 (0.86-0.90)	0.584
Moderate	4	0.89 (0.83-0.96)	

Suppl. Table S21. Subgroup analysis of the meta-analysis regarding low socioeconomic status and waitlisting.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	5	0.55 (0.44-0.72)	0.587
Europe	6	0.60 (0.54-0.65)	
Risk of bias			
Low	7	0.55 (0.44-0.66)	0.289
Moderate	4	0.64 (0.55-0.74)	

Suppl. Table S22. Subgroup analysis of the meta-analysis regarding Indigenous patients and kidney transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	4	0.48 (0.36-0.63)	**0.001**
Oceania	3	0.25 (0.21-0.31)	
Risk of bias			
Low	6	0.38 (0.27-0.53)	0.733
Moderate	1	0.32 (0.25-0.40)	

Suppl. Table S23. Subgroup analysis of the meta-analysis regarding female patients and kidney transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	3	0.90 (0.81-0.99)	0.574
Europe	4	0.94 (0.84-1.05)	
Risk of bias			
Low	5	0.90 (0.82-0.97)	0.241
Moderate	2	1.00 (0.87-1.14)	

Suppl. Table S24. Subgroup analysis of the meta-analysis regarding low socioeconomic status and kidney transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	3	0.63 (0.56-0.69)	**0.015**
Europe	2	0.81 (0.68-0.95)	
Asia	1	0.40 (0.24-0.67)	
Oceania	1	0.94 (0.54-1.64)	
South America	1	0.59 (0.20-1.73)	
Risk of bias			
Low	6	0.63 (0.56-0.72)	**0.012**
Moderate	2	0.89 (0.75-1.06)	

Suppl. Table S25. Subgroup analysis of the meta-analysis regarding Black patients and living-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	6	0.41 (0.30-0.56)	0.964
Europe	1	0.40 (0.21-0.75)	
Risk of bias			
Low	5	0.35 (0.29-0.42)	**0.015**
Moderate	2	0.59 (0.29-1.20)	

Suppl. Table S26. Subgroup analysis of the meta-analysis regarding Asian patients and living-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	3	0.36 (0.24-0.55)	0.161
Europe	1	0.66 (0.45-0.96)	
Risk of bias			
Low	3	0.36 (0.24-0.55)	0.161
Moderate	1	0.66 (0.45-0.96)	

Suppl. Table S27. Subgroup analysis of the meta-analysis regarding Indigenous patients and living-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	4	0.41 (0.37-0.44)	**<0.001**
Europe	3	0.19 (0.13-0.28)	

Suppl. Table S28. Subgroup analysis of the meta-analysis regarding female patients and living-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	1	1.06 (0.74-1.52)	
Europe	1	0.94 (0.74-1.20)	N/A
Oceania	1	0.84 (0.75-0.95)	
Risk of bias			
Low	2	0.88 (0.73-1.07)	0.738
Moderate	1	0.94 (0.74-1.20)	

Suppl. Table S29. Subgroup analysis of the meta-analysis regarding low socioeconomic status and living-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	1	0.59 (0.38-0.92)	
Europe	2	0.42 (0.36-0.49)	0.229
Oceania	1	0.79 (0.25-2.50)	
Risk of bias			
Low	1	0.59 (0.38-0.92)	0.176
Moderate	3	0.43 (0.37-0.50)	
Exposure			
Low income	3	0.48 (0.34-0.69)	0.873
Low education	1	0.46 (0.36-0.59)	

Suppl. Table S30. Subgroup analysis of the meta-analysis regarding Black patients and deceased-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	5	0.74 (0.45-1.22)	0.684
Europe	1	0.95 (0.80-1.13)	
Risk of bias			
Low	4	0.85 (0.49-1.46)	0.550
Moderate	2	0.63 (0.28-1.44)	

Suppl. Table S31. Subgroup analysis of the meta-analysis regarding Asian patients and deceased-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	2	0.79 (0.54-1.16)	0.302
Europe	1	1.12 (1.00-1.25)	
Risk of bias			
Low	2	0.79 (0.54-1.16)	0.302
Moderate	1	1.12 (1.00-1.25)	

Suppl. Table S32. Subgroup analysis of the meta-analysis regarding Indigenous patients and deceased-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	4	0.47 (0.36-0.61)	**0.019**
Oceania	2	0.27 (0.19-0.39)	

Suppl. Table S33. Subgroup analysis of the meta-analysis regarding female patients and deceased-donor transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	1	0.78 (0.58-1.04)	N/A
Europe	1	0.60 (0.53-0.67)	
Oceania	1	1.03 (0.47-2.26)	
Risk of bias			
Low	1	0.78 (0.58-1.04)	0.709
Moderate	2	0.68 (0.44-1.06)	

Suppl. Table S34. Subgroup analysis of the meta-analysis regarding low socioeconomic status and preemptive transplantation.

Subgroup	Studies no.	OR (95% CI)	*P* for subgroup difference
Study location			
North America	1	0.84 (0.81-0.87)	0.526
Europe	2	0.40 (0.10-1.53)	

Suppl. Table S35. Subgroup analysis of the meta-analysis regarding Black patients and graft failure.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	6	1.43 (1.26-1.62)	0.619
Europe	2	1.62 (0.91-2.87)	
Risk of bias			
Low	5	1.35 (1.23-1.47)	**0.004**
Moderate	3	1.79 (1.65-1.95)	

Suppl. Table S36. Subgroup analysis of the meta-analysis regarding Indigenous patients and graft failure.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	2	1.13 (0.40-3.16)	0.615
Oceania	1	1.53 (0.85-2.76)	

Suppl. Table S37. Subgroup analysis of the meta-analysis regarding Hispanic patients and graft failure.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Risk of bias			
Low	3	0.83 (0.73-0.95)	0.248
Moderate	2	1.07 (0.59-1.91)	

Suppl. Table S38. Subgroup analysis of the meta-analysis regarding female patients and graft failure.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	4	0.99 (0.91-1.08)	0.995
Europe	1	0.99 (0.73-1.35)	
Risk of bias			
Low	3	1.02 (0.92-1.13)	0.361
Moderate	2	0.94 (0.91-0.97)	

Suppl. Table S39. Subgroup analysis of the meta-analysis regarding low socioeconomic status and graft failure.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	7	1.15 (0.96-1.37)	
Europe	2	1.06 (0.94-1.20)	0.389
Asia	2	1.28 (1.17-1.41)	
Risk of bias			
Low	6	1.18 (1.07-1.31)	
Moderate	4	1.05 (0.86-1.28)	0.128
Serious	1	1.49 (1.22-1.82)	
Exposure			
Low income	5	1.08 (0.91-1.28)	
Low education	4	1.14 (1.01-1.28)	0.220
Unemployment	2	1.34 (1.15-1.58)	

Suppl. Table S40. Subgroup analysis of the meta-analysis regarding Black patients and kidney transplantation mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Risk of bias			
Low	3	0.93 (0.77-1.12)	0.499
Moderate	1	1.06 (0.94-1.19)	

Suppl. Table S41. Subgroup analysis of the meta-analysis regarding female patients and kidney transplantation mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	2	0.87 (0.84-0.90)	0.366
Europe	1	0.78 (0.62-0.99)	

Suppl. Table S42. Subgroup analysis of the meta-analysis regarding low socioeconomic status and kidney transplantation mortality.

Subgroup	Studies no.	HR (95% CI)	*P* for subgroup difference
Study location			
North America	6	1.12 (1.05-1.19)	0.090
Europe	2	0.92 (0.69-1.25)	
Asia	2	1.35 (0.94-1.94)	
Oceania	1	0.64 (0.37-1.09	
Risk of bias			
Low	7	1.11 (0.94-1.31)	0.405
Moderate	3	0.90 (0.60-1.36)	
Exposure			
Low income	7	1.01 (0.78-1.32)	0.961
Low education	3	1.10 (1.02-1.18)	
Unemployment	1	1.12 (0.86-1.46)	

Supplementary S8: Sensitivity analysis

Suppl. Table S43. Meta-analysis outcomes of studies conducted in the USA.

Outcome	Black race	Asian race	Indigenous people	Hispanic ethnicity	Female sex	Low SES
AVF/AVG vs. CVC	**1.08 (1.07-1.10)**	**1.11 (1.08-1.15)**	1.04 (0.98-1.10)	-	**0.85 (0.84-0.86)**	0.84 (0.69-1.03)
AVF vs. AVG	**0.58 (0.51-0.66)**	-	**1.30 (1.12-1.51)**	-	**0.43 (0.38-0.47)**	-
Successful AVF use	**0.88 (0.83-0.93)**	-	-	-	**0.82 (0.76-0.88)**	-
Primary AVF patency	**0.87 (0.86-0.88)**	-	-	-	**0.79 (0.72-0.87)**	-
Transition to AVF/AVG	1.06 (0.92-1.22)	-	-	-	**0.92 (0.85-1.00)**	**0.80 (0.73-0.88)**
Home dialysis	0.91 (0.74-1.12)	**0.64 (0.41-1.00)**	-	-	-	-
Peritoneal dialysis	**0.58 (0.46-0.73)**	1.02 (0.98-1.07)			1.06 (0.97-1.17)	**0.47 (0.40-0.55)**
Dialysis survival	**0.74 (0.68-0.81)**	**0.62 (0.51-0.77)**	**0.69 (0.67-0.71)**	**0.81 (0.73-0.89)**	0.98 (0.96-1.01)	**1.11 (1.06-1.17)**
Waitlisting	**0.78 (0.68-0.90)**	**1.20 (1.18-1.22)**	**0.77 (0.61-0.99)**	1.09 (0.87-1.37)	**0.89 (0.88-0.90)**	**0.55 (0.44-0.72)**
Kidney transplantation	0.74 (0.48-1.14)	**0.49 (0.41-0.59)**	**0.44 (0.42-0.47)**	1.10 (0.51-2.37)	0.95 (0.81-1.11)	**0.65 (0.64-0.66)**
Living-donor transplantation	**0.48 (0.29-0.79)**	**0.49 (0.43-0.55)**	**0.40 (0.36-0.44)**	1.22 (0.57-5.60)	1.06 (0.74-1.52)	**0.59 (0.38-0.92)**
Deceased-donor transplantation	0.77 (0.40-1.49)	**0.95 (0.91-0.99)**	**0.52 (0.46-0.60)**	1.23 (0.40-3.75)	**0.94 (0.93-0.95)**	0.78 (0.58-1.04)
Preemptive transplantation	**0.46 (0.44-0.49)**	-	-	-	**1.40 (1.35-1.45)**	**0.84 (0.81-0.87)**
Graft survival	**1.43 (1.26-1.62)**	-	1.13 (0.40-3.16)	0.90 (0.68-1.20)	0.99 (0.91-1.08)	1.16 (0.94-1.44)
Kidney transplantation survival	0.96 (0.83-1.12)	-	-	**0.69 (0.66-0.71)**	**0.87 (0.84-0.90)**	**1.11 (1.04-1.18)**

Effect estimates are odds ratios or hazard ratios (95% confidence intervals). Bolt text indicated statistical significance.
SES: socioeconomic status; AVF: arteriovenous fistula; AVG: arteriovenous graft

Supplementary S9: Summary of findings

Suppl. Table S44. Summary of findings and certainty of evidence assessment

				GRADE					
	Studies	**ES (95% CI)**	**95% PI**	***Study limitations***	***Directness***	***Consistency***	***Precision***	***Publication bias***	***Certainty of evidence***
Dialysis									
Mortality									
Black race	18	0.68 (0.61-0.75)	0.61-0.75	Low risk	Yes	No	Yes	Undetected	***Moderate***
Asian race	12	0.67 (0.61-0.72)	0.52-0.85	Moderate risk	Yes	Yes	Yes	Undetected	***Moderate***
Indigenous race	11	1.02 (0.85-1.23)	0.56-1.89	Low risk	Yes	No	No	Undetected	***Low***
Hispanic ethnicity	8	0.80 (0.73-0.88)	0.63-1.02	Low risk	Yes	No	Yes	Undetected	***Moderate***
Female sex	26	0.99 (0.95-1.04)	0.84-1.17	Moderate risk	Yes	No	Yes	Undetected	***Low***
Low SES	23	1.22 (1.14-1.31)	0.95-1.57	Moderate risk	Yes	No	Yes	Suspected	***Very Low***
Arteriovenous fistula/graft *vs*. Central venous catheter									
Black race	2	1.08 (1.07-1.10)	1.07-1.10	Low risk	Yes	Yes	Yes	Undetected	***High***
Asian race	2	1.04 (0.76-1.44)	0.65-1.66	Low risk	Yes	Yes	No	Undetected	***Moderate***
Indigenous race	3	0.93 (0.82-1.07)	0.73-1.20	Low risk	Yes	No	Yes	Undetected	***Moderate***
Female sex	5	0.81 (0.69-0.95)	0.57-1.15	Low risk	Yes	No	Yes	Suspected	***Low***
Low SES	5	0.81 (0.65-1.00)	0.52-1.26	Low risk	Yes	No	Yes	Suspected	***Low***
Arteriovenous fistula *vs*. graft									
Black race	4	0.58 (0.51-0.66)	0.45-0.75	Low risk	Yes	Yes	Yes	Undetected	***High***
Indigenous race	2	0.93 (0.42-2.09)	0.25-3.44	Low risk	Yes	No	No	Undetected	***Low***
Female sex	5	0.43 (0.39-0.47)	0.36-0.51	Low risk	Yes	Yes	Yes	Undetected	***High***
Successful arteriovenous fistula use									
Black race	2	0.89 (0.84-0.94)	0.84-0.94	Low risk	Yes	Yes	Yes	Undetected	***High***
Female sex	3	0.64 (0.40-1.02)	0.26-1.59	Low risk	Yes	No	No	Suspected	***Very Low***

Primary arteriovenous fistula patency									
Black race	2	0.87 (0.86-0.88)	0.86-0.88	Low risk	Yes	Yes	Yes	Undetected	***High***
Female sex	4	0.73 (0.56-0.96)	0.72-0.87	Low risk	Yes	No	No	Undetected	***Low***
Low SES	3	0.77 (0.65-0.91)	0.65-0.91	Moderate risk	Yes	Yes	Yes	Undetected	***Moderate***
Transition to arteriovenous fistula/graft									
Black race	2	1.06 (0.92-1.22)	0.84-1.34	Low risk	Yes	No	No	Undetected	***Low***
Female sex	2	0.92 (0.85-1.00)	0.80-1.06	Low risk	Yes	No	Yes	Undetected	***Moderate***
Low SES	2	0.80 (0.73-0.88)	0.73-0.88	Moderate risk	Yes	Yes	Yes	Undetected	***Moderate***
Home dialysis									
Black race	2	1.00 (0.83-1.21)	0.78-1.28	Low risk	Yes	Yes	Yes	Undetected	***High***
Asian race	2	0.86 (0.52-1.42)	0.39-1.91	Low risk	Yes	No	No	Undetected	***Low***
Peritoneal dialysis									
Black race	5	0.65 (0.49-0.88)	0.33-1.30	Moderate risk	Yes	No	Yes	Undetected	***Low***
Asian race	3	1.28 (1.00-1.64)	0.78-2.09	Low risk	Yes	No	No	Undetected	***Low***
Indigenous race	2	0.83 (0.61-1.14)	0.48-1.43	Low risk	Yes	No	No	Undetected	***Low***
Female sex	7	1.07 (0.92-1.25)	0.74-1.55	Moderate risk	Yes	No	Yes	Undetected	***Low***
Low SES	5	0.56 (0.44-0.70)	0.38-0.89	Moderate risk	Yes	No	Yes	Undetected	***Low***
Kidney transplantation									
Waitlisting									
Black race	7	0.80 (0.70-0.91)	0.59-1.09	Low risk	Yes	No	Yes	Undetected	***Moderate***
Asian race	2	1.25 (1.08-1.44)	1.01-1.55	Low risk	Yes	Yes	No	Undetected	***Moderate***
Indigenous race	3	0.63 (0.44-0.91)	0.32-1.22	Low risk	Yes	No	No	Undetected	***Low***
Hispanic ethnicity	3	1.09 (0.87-1.37)	0.70-1.69	Low risk	Yes	No	No	Undetected	***Low***
Female sex	14	0.89 (0.87-0.90)	0.87-0.91	Low risk	Yes	Yes	Yes	Undetected	***High***
Low SES	11	0.58 (0.51-0.66)	0.41-0.82	Low risk	Yes	No	Yes	Undetected	***Moderate***
Kidney transplantation									
Black race	5	0.70 (0.49-0.99)	0.31-1.58	Low risk	Yes	No	No	Undetected	***Low***

Asian race	2	0.59 (0.42-0.82)	0.33-1.02	Low risk	Yes	No	No	Undetected	***Low***
Indigenous race	7	0.37 (0.27-0.50)	0.16-0.85	Low risk	Yes	No	Yes	Undetected	***Moderate***
Hispanic ethnicity	2	1.10 (0.51-2.37)	0.30-3.99	Low risk	Yes	No	No	Undetected	***Very Low***
Female sex	7	0.91 (0.85-0.98)	0.77-1.08	Low risk	Yes	No	Yes	Undetected	***Moderate***
Low SES	8	0.68 (0.58-0.79)	0.47-0.97	Low risk	Yes	No	Yes	Undetected	***Moderate***
Living-donor transplantation									
Black race	7	0.40 (0.31-0.50)	0.24-0.68	Low risk	Yes	Yes	Yes	Undetected	***High***
Asian race	4	0.42 (0.28-0.62)	0.18-0.95	Low risk	Yes	No	No	Undetected	***Low***
Indigenous race	7	0.31 (0.22-0.43)	0.13-0.74	Low risk	Yes	No	Yes	Suspected	***Low***
Hispanic ethnicity	3	1.22 (0.27-5.60)	0.10-15.28	Low risk	Yes	No	No	Undetected	***Low***
Female sex	3	0.88 (0.79-0.98)	0.77-0.99	Moderate risk	Yes	Yes	Yes	Undetected	***Moderate***
Low SES	4	0.45 (0.38-0.54)	0.36-0.57	Moderate risk	Yes	Yes	Yes	Undetected	***Moderate***
Deceased-donor transplantation									
Black race	6	0.77 (0.51-1.16)	0.27-2.21	Low risk	Yes	No	No	Undetected	***Low***
Asian race	3	0.89 (0.65-1.22)	0.48-1.64	Low risk	Yes	No	No	Undetected	***Low***
Indigenous race	6	0.39 (0.29-0.53)	0.18-0.85	Low risk	Yes	No	No	Undetected	***Low***
Hispanic ethnicity	2	1.23 (0.40-3.75)	0.19-8.19	Low risk	Yes	No	No	Undetected	***Low***
Female sex	2	0.94 (0.93-0.95)	0.93-0.95	Low risk	Yes	Yes	Yes	Undetected	***High***
Low SES	3	0.69 (0.54-0.89)	0.46-1.03	Moderate risk	Yes	No	Yes	Undetected	***Low***
Preemptive transplantation									
Black race	2	0.46 (0.44-0.49)	0.44-0.49	Low risk	Yes	Yes	Yes	Undetected	***High***
Female sex	2	1.16 (0.79-1.71)	0.60-2.25	Low risk	Yes	No	No	Undetected	***Low***
Low SES	3	0.51 (0.21-1.28)	0.08-3.15	Low risk	Yes	No	No	Undetected	***Low***
Graft failure									
Black race	8	1.44 (1.27-1.63)	1.07-1.94	Low risk	Yes	No	Yes	Undetected	***Moderate***
Indigenous race	3	1.42 (0.85-2.37)	0.85-2.37	Low risk	Yes	Yes	No	Undetected	***Moderate***
Hispanic ethnicity	5	0.90 (0.68-1.20)	0.49-1.68	Low risk	Yes	No	No	Undetected	***Low***

Female sex	5	0.99 (0.92-1.07)	0.85-1.15	Low risk	Yes	No	Yes	Undetected	***Moderate***
Low SES	11	1.17 (1.07-1.28)	0.93-1.47	Low risk	Yes	No	Yes	Undetected	***Moderate***
Mortality									
Black race	4	0.96 (0.83-1.12)	0.71-1.31	Low risk	Yes	No	Yes	Undetected	***Moderate***
Hispanic ethnicity	2	0.69 (0.66-0.71)	0.66-0.71	Low risk	Yes	Yes	Yes	Undetected	***High***
Female sex	3	0.87 (0.84-0.90)	0.84-0.90	Low risk	Yes	Yes	Yes	Undetected	***High***
Low SES	11	1.06 (0.91-1.23)	0.69-1.63	Low risk	Yes	No	Yes	Suspected	***Low***

ES: effect size; PI: prediction intervals; GRADE: Grading of Recommendations, Assessment, Development and Evaluations; SES: socioeconomic status

Supplementary S10: PRISMA checklist

1Section 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.	1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	2
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	2
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	2, 3
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.	3
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	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.	3
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
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.	2, 3
	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.	4
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
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.	4
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
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	4
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	4
	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.	4

1Section and Topic	Item #	Checklist item	Location where item is reported
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	4
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	4
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	4
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	4
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.	5, Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Appendix 2
Study characteristics	17	Cite each included study and present its characteristics.	5-6, Appendix 3
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Appendix 4
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.	Appendix 5
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	7-12
	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.	7-12
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Appendix 7
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Appendix 8
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	NA
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Appendix 9
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	12-14
	23b	Discuss any limitations of the evidence included in the review.	14-15
	23c	Discuss any limitations of the review processes used.	15
	23d	Discuss implications of the results for practice, policy, and future research.	15
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.	2
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	2

1Section and Topic	Item #	Checklist item	Location where item is reported
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	NA
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	17
Competing interests	26	Declare any competing interests of review authors.	17
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.	17

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

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