

Supplemental File 1 Search strategy

PubMed query

(Physicians[Mesh] OR Doctor[tiab] OR Doctors[tiab] OR Physician[tiab] OR Physicians[tiab] OR Clinician[tiab] OR Clinicians[tiab] OR "General practitioner"[tiab] OR "General practitioners"[tiab] OR Cardiologist[tiab] OR Cardiologists[tiab] OR Dermatologist[tiab] OR Dermatologists[tiab] OR Endocrinologist[tiab] OR Endocrinologists[tiab] OR Gastroenterologist[tiab] OR Gastroenterologists[tiab] OR Geriatrician[tiab] OR Geriatricians[tiab] OR Neurologist[tiab] OR Neurologists[tiab] OR Oncologist[tiab] OR Oncologists[tiab] OR Obstetrician[tiab] OR Obstetricians[tiab] OR Pediatrician[tiab] OR Pediatricians[tiab] OR Paediatrician[tiab] OR Paediatricians[tiab] OR Psychiatrist[tiab] OR Psychiatrists[tiab] OR "Family Physician"[tiab] OR "Family Physicians"[tiab] OR Surgeon[tiab] OR Surgeons[tiab] OR Urologist[tiab] OR Urologists[tiab] OR Psychiatrist[tiab] OR Psychiatrists[tiab] OR Resident[tiab] OR Residents[tiab] OR Registrar[tiab] OR Registrars[tiab] OR Consultant[tiab] OR Consultants[tiab] OR Specialist[tiab] OR Specialists[tiab])

AND

("Practice Patterns, Physicians"[Mesh] OR "Clinical Competence"[Mesh] OR Individual[tiab] OR Individuals[tiab])

AND

(Variability[tiab] OR Variation[tiab] OR Vary[tiab])

AND

("Outcome and Process Assessment, Health Care"[Mesh] OR "Quality of Health Care"[Mesh] OR "Patient Care"[Mesh] OR "Patient care"[tiab] OR "Care quality"[tiab] OR ((Treatment[tiab] OR Medical[tiab] OR Surgical[tiab]) AND (Outcome[tiab] OR Outcomes[tiab])))

AND

("Epidemiologic Studies"[Mesh] OR "case-control studies"[Mesh] OR "Cohort Studies"[Mesh] OR "Case control"[tiab] OR Longitudinal[tiab] OR Prospective[tiab] OR Retrospective[tiab] OR "Cross sectional"[tiab] OR "Cross-Sectional Studies"[Mesh] OR Investigated[tiab] OR Analysis[tiab] OR Data[tiab] OR "statistics and numerical data"[sh] OR "epidemiology"[sh])

AND

(Doctor[ti] OR Doctors[ti] OR Physician[ti] OR Physicians[ti] OR Clinician[ti] OR Clinicians[ti] OR "General practitioner"[ti] OR "General practitioners"[ti] OR Cardiologist[ti] OR Cardiologists[ti] OR Dermatologist[ti] OR Dermatologists[ti] OR Endocrinologist[ti] OR Endocrinologists[ti] OR Gastroenterologist[ti] OR Gastroenterologists[ti] OR Geriatrician[ti] OR Geriatricians[ti] OR Neurologist[ti] OR Neurologists[ti] OR Oncologist[ti] OR Oncologists[ti] OR Obstetrician[ti] OR Obstetricians[ti] OR Pediatrician[ti] OR Pediatricians[ti] OR Paediatrician[ti] OR Paediatricians[ti] OR Psychiatrist[ti] OR Psychiatrists[ti] OR "Family Physician"[ti] OR "Family Physicians"[ti] OR Surgeon[ti] OR Surgeons[ti] OR Urologist[ti] OR Urologists[ti] OR Psychiatrist[ti] OR Psychiatrists[ti] OR Resident[ti] OR Residents[ti] OR Registrar[ti] OR Registrars[ti] OR Consultant[ti] OR Consultants[ti] OR Specialist[ti] OR Specialists[ti] OR Individual[ti] OR Individuals[ti] OR Variability[ti] OR Variation[ti] OR Vary[ti] OR "Patient care"[ti] OR "Care quality"[ti] OR ((Treatment[ti] OR Medical[ti] OR Surgical[ti]) AND (Outcome[ti] OR Outcomes[ti])))

Embase Query:

('physician'/exp OR Doctor:ti,ab OR Doctors:ti,ab OR Physician:ti,ab OR Physicians:ti,ab OR Clinician:ti,ab OR Clinicians:ti,ab OR "General practitioner":ti,ab OR "General practitioners":ti,ab OR Cardiologist:ti,ab OR Cardiologists:ti,ab OR Dermatologist:ti,ab OR

Dermatologists:ti,ab OR Endocrinologist:ti,ab OR Endocrinologists:ti,ab OR Gastroenterologist:ti,ab OR Gastroenterologists:ti,ab OR Geriatrician:ti,ab OR Geriatricians:ti,ab OR Neurologist:ti,ab OR Neurologists:ti,ab OR Oncologist:ti,ab OR Oncologists:ti,ab OR Obstetrician:ti,ab OR Obstetricians:ti,ab OR Pediatrician:ti,ab OR Pediatricians:ti,ab OR Paediatrician:ti,ab OR Paediatricians:ti,ab OR Psychiatrist:ti,ab OR Psychiatrists:ti,ab OR "Family Physician":ti,ab OR "Family Physicians":ti,ab OR Surgeon:ti,ab OR Surgeons:ti,ab OR Urologist:ti,ab OR Urologists:ti,ab OR Psychiatrist:ti,ab OR Psychiatrists:ti,ab OR Resident:ti,ab OR Residents:ti,ab OR Registrar:ti,ab OR Registrars:ti,ab OR Consultant:ti,ab OR Consultants:ti,ab OR Specialist:ti,ab OR Specialists:ti,ab)
AND
('clinical practice'/exp OR 'Clinical Competence'/exp OR Individual:ti,ab OR Individuals:ti,ab)
AND
(Variability:ti,ab OR Variation:ti,ab OR Vary:ti,ab)
AND
('treatment outcome'/exp OR 'health care quality'/exp OR 'Patient Care'/exp OR "Patient care":ti,ab OR "Care quality":ti,ab OR ((Treatment:ti,ab OR Medical:ti,ab OR Surgical:ti,ab) AND (Outcome:ti,ab OR Outcomes:ti,ab)))
AND
('epidemiology'/exp OR 'case control study'/exp OR 'cohort analysis'/exp OR "Case control":ti,ab OR Longitudinal:ti,ab OR Prospective:ti,ab OR Retrospective:ti,ab OR "Cross sectional":ti,ab OR 'cross-sectional study'/exp OR Investigated:ti,ab OR Analysis:ti,ab OR Data:ti,ab)
AND
(Doctor:ti OR Doctors:ti OR Physician:ti OR Physicians:ti OR Clinician:ti OR Clinicians:ti OR "General practitioner":ti OR "General practitioners":ti OR Cardiologist:ti OR Cardiologists:ti OR Dermatologist:ti OR Dermatologists:ti OR Endocrinologist:ti OR Endocrinologists:ti OR Gastroenterologist:ti OR Gastroenterologists:ti OR Geriatrician:ti OR Geriatricians:ti OR Neurologist:ti OR Neurologists:ti OR Oncologist:ti OR Oncologists:ti OR Obstetrician:ti OR Obstetricians:ti OR Pediatrician:ti OR Pediatricians:ti OR Paediatrician:ti OR Paediatricians:ti OR Psychiatrist:ti OR Psychiatrists:ti OR "Family Physician":ti OR "Family Physicians":ti OR Surgeon:ti OR Surgeons:ti OR Urologist:ti OR Urologists:ti OR Psychiatrist:ti OR Psychiatrists:ti OR Resident:ti OR Residents:ti OR Registrar:ti OR Registrars:ti OR Consultant:ti OR Consultants:ti OR Specialist:ti OR Specialists:ti OR Individual:ti OR Individuals:ti OR Variability:ti OR Variation:ti OR Vary:ti OR "Patient care":ti OR "Care quality":ti OR ((Treatment:ti OR Medical:ti OR Surgical:ti) AND (Outcome:ti OR Outcomes:ti)))

PsycINFO Query

(Doctor OR Doctors OR Physician OR Physicians OR Clinician OR Clinicians OR "General practitioner" OR "General practitioners" OR Cardiologist OR Cardiologists OR Dermatologist OR Dermatologists OR Endocrinologist OR Endocrinologists OR Gastroenterologist OR Gastroenterologists OR Geriatrician OR Geriatricians OR Neurologist OR Neurologists OR Oncologist OR Oncologists OR Obstetrician OR Obstetricians OR Pediatrician OR Pediatricians OR Paediatrician OR Paediatricians OR Psychiatrist OR Psychiatrists OR "Family Physician" OR "Family Physicians" OR Surgeon OR Surgeons OR Urologist OR Urologists OR Psychiatrist OR Psychiatrists OR Resident OR Residents OR Registrar OR Registrars OR Consultant OR Consultants OR Specialist OR Specialists).ti,ab
AND
("Practice Patterns" OR "Clinical Competence" OR Individual OR Individuals).ti,ab

AND

(Variability OR Variation OR Vary).ti,ab

AND

("Quality of Health Care" OR "Patient Care" OR "Patient care" OR "Care quality" OR
((Treatment OR Medical OR Surgical) AND (Outcome OR Outcomes))).ti,ab

AND

(Epidemiologic OR case-control OR "Cohort Studies" OR "Case control" OR Longitudinal OR
Prospective OR Retrospective OR "Cross sectional" OR "Cross-Sectional Studies" OR
Investigated OR Analysis OR Data).ti,ab

Supplemental File 2: Authors' judgments and justifications of the included RCTs using Cochrane assessment table for the risk of bias.

Arvidsson, 2005	Risk of bias	Reason/Quotation
Random sequence generation (selection bias)	Low risk	"Patients were randomized in computer-generated blocks"
Allocation concealment (selection bias)	Low risk	"Patients were randomized in computer-generated blocks of 20 and stratified for each centre using numbered closed envelopes"
Blinding of participants and personnel (performance bias)	High risk	Surgical intervention so the blinding is not applicable but there is no report whether the outcome is likely to be influenced by lack of blinding or not
Blinding of outcome assessment (detection bias)	Low risk	"An independent observer scored the surgeons' performance"
Incomplete outcome data (attrition bias)	Low risk	Missing outcome data balanced in numbers across intervention groups, with similar reasons for missing data across groups
Selective reporting (reporting bias)	Low risk	The study protocol is not available but it is clear that the published reports include all expected outcomes
Other bias	Unclear risk	No sufficient data to judge
Fountain, 2004	Risk of bias	Reason/Quotation
Random sequence generation (selection bias)	Low risk	"They were then randomized on a 2 : 1 basis (LH: AH/VH) to one of the surgical procedures"
Allocation concealment (selection bias)	Unclear risk	No sufficient data to judge
Blinding of participants and personnel (performance bias)	High risk	Un-blinded trial. Although It is about a surgical intervention so the blinding is not applicable, there is no report whether the outcome is likely to be influenced by lack of blinding or not
Blinding of outcome assessment (detection bias)	High risk	
Incomplete outcome data (attrition bias)	Low risk	No lost to follow up
Selective reporting (reporting bias)	Low risk	The study protocol is not available but it is clear that the published reports include all expected outcomes
Other bias	Unclear risk	No sufficient data to judge

Eklund, 2009	Risk of bias	Reason/Quotation
Random sequence generation (selection bias)	Low risk	"Randomization was performed in computer-generated blocks of 20 and stratified for each center"
Allocation concealment (selection bias)	Low risk	"Randomization was performed in computer-generated blocks of 20 and stratified for each center, using numbered and closed envelopes"
Blinding of participants and personnel (performance bias)	High risk	open versus laparoscopic surgical repair so the blinding is not applicable but there is no report whether the outcome is likely to be influenced by lack of blinding or not
Blinding of outcome assessment (detection bias)	Unclear risk	The study did not address whether the outcome assessment was blinded or not.
Incomplete outcome data (attrition bias)	Low risk	Missing outcome data is not significant and balanced in numbers across intervention groups; "At a median of 5.1 (4.4 –9.1) years after operation, 1275/1353 (94.2%) patients completed the follow-up "
Selective reporting (reporting bias)	Low risk	The study protocol is not available but it is clear that the published reports include all expected outcomes.
Other bias	Unclear risk	Insufficient information to assess whether an important risk of bias exists.