

## ***Supplementary file S1. Full search strategies of all used databases***

### **Search Query Pubmed**

("Back Pain"[Mesh] OR "Neck Pain"[Mesh] OR back pain\* OR neck pain\* OR spine pain\* OR spinal pain\* OR Vertebrogenic pain\* OR lumbar pain\* OR cervical pain\* OR Discogenic pain\* OR facet pain\* OR facet joint pain\* OR zygapophyseal pain\* OR zygapophyseal joint pain\* OR Backache\* OR discopathy OR lumbago OR whiplash OR trapezius myalgia OR dorsalgi\* OR vertebral pain\*) AND ("Sleep"[Mesh] OR "Sleep Wake Disorders"[Mesh] OR sleep problem\* OR sleeping problem\* OR sleep disorder\* OR sleeping disorder\* OR sleeping difficult\* OR sleep difficult\* OR sleep disturb\* OR sleeping disturb\* OR sleep pattern\* OR sleeping pattern\* OR sleepless\* OR wakeful\* OR sleep dysfunction\* OR sleeping dysfunction\* OR Non-restorative sleep\* OR unrefreshing sleep\* OR insufficient sleep\* OR short sleep\* OR sleep disease\* OR sleeping sickness\* OR sleep sickness\* OR insomnia\* OR "sleep quality" OR "sleep onset" OR sleep efficien\* OR sleep fragment\* OR sleep latency OR polysomnography OR sleep diar\* OR actigraph\* OR sleeping disease\* OR "sleep continuity" OR dyssomni\* OR sleep deprivat\* OR hyposomni\*) AND ("Epidemiology"[Mesh] OR "Epidemiologic Factors"[Mesh] OR "Prognosis"[Mesh] OR "etiology"[Subheading] OR risks OR etiology OR causalit\* OR variable\* OR indicator\* OR incidence OR frequenc\* OR causation\* OR prognos\* OR outcome\* OR factor\* OR predict\* OR probabilit\* OR prevalence\* OR hazard ratio\* OR odds ratio\* OR determinant\* OR contribut\* OR characteristic\* OR predispos\* OR epidemiology OR cause\*)

### **Search Query Embase**

("back pain\$":ti,ab,kw OR "neck pain\$":ti,ab,kw OR "spine pain\$":ti,ab,kw OR "spinal pain\$":ti,ab,kw OR "vertebrogenic pain\$":ti,ab,kw OR "lumbar pain\$":ti,ab,kw OR "cervical pain\$":ti,ab,kw OR "discogenic pain\$":ti,ab,kw OR "facet pain\$":ti,ab,kw OR "facet joint pain\$":ti,ab,kw OR "zygapophyseal pain\$":ti,ab,kw OR "zygapophyseal joint pain\$":ti,ab,kw OR 'backache\$':ti,ab,kw OR 'discopathy':ti,ab,kw OR 'lumbago':ti,ab,kw OR 'whiplash':ti,ab,kw OR 'trapezius myalgia':ti,ab,kw OR 'dorsalgi\*':ti,ab,kw OR "vertebral pain\$":ti,ab,kw) AND (sleep\*:ti,ab,kw OR wakeful\*:ti,ab,kw OR insomnia\*:ti,ab,kw OR polysomnography:ti,ab,kw OR actigraph\*:ti,ab,kw OR dyssomni\*:ti,ab,kw OR hyposomni\*:ti,ab,kw) AND (epidemiolog\*:ab,kw,ti OR etiology:ab,kw,ti OR risk\$:ab,kw,ti OR variable\$:ab,kw,ti OR indicator\$:ab,kw,ti OR incidence:ab,kw,ti OR frequenc\*:ab,kw,ti OR prognos\*:ab,kw,ti OR causation\$:ab,kw,ti OR cause\$:ab,kw,ti OR causalit\*:ab,kw,ti OR outcome\$:ab,kw,ti OR factor\$:ab,kw,ti OR predict\*:ab,kw,ti OR probabilit\*:ab,kw,ti OR prevalence\$:ab,kw,ti OR "hazard ratio\$":ab,kw,ti OR "odds ratio\$":ab,kw,ti OR determinant\$:ab,kw,ti OR contribut\*:ab,kw,ti OR predispos\*:ab,kw,ti OR characteristic\$:ab,kw,ti)

### **Search Query Web of Science**

# 1

TOPIC: ("back pain\$" OR "neck pain\$" OR "spine pain\$" OR "spinal pain\$" OR "Vertebrogenic pain\$" OR "lumbar pain\$" OR "cervical pain\$" OR "discogenic pain\$" OR "facet pain\$" OR "facet joint pain\$" OR "zygapophyseal pain\$" OR "zygapophyseal joint pain\$" OR backache\$ OR discopathy OR lumbago OR whiplash OR "trapezius myalgia"

OR dorsalgia\* OR "vertebral pain\$")

*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*

# 2

TOPIC: (sleep\* OR sleepless\* OR wakeful\* OR insomnia\* OR polysomnography OR actigraph\* OR dyssomni\* OR hyposomni\*)

*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*

# 3

TOPIC: (epidemiolog\* OR etiology OR risk\$ OR variable\$ OR indicator\$ OR incidence OR frequenc\* OR prognos\* OR causation\$ OR cause\$ OR causalit\* OR outcome\$ OR factor\$ OR predict\* OR probabilit\* OR prevalence\$ OR "hazard ratio\$" OR "odds ratio\$" OR determinant\$ OR contribut\* OR predispos\* OR characteristic\$)

*Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years*

# 4

#1 AND #2 AND #3