**Supplemental Table 2. Study Characteristics**

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| --- | --- | --- | --- | --- | --- | --- |
| **Author** | **Leung et al** | **Jeong et al** | **Yildizeli et al** | **Koster et al** | **Gupta et al** | **Todd et al** |
| **Year** | 2015 | 2016 | 2005 | 2009 | 2001 | 2017 |
| **Country** | U.S | South Korea | Turkey | Netherlands | U.S | Germany |
| **Study Design** | Prospective cohort | Retrospective cohort | Retrospective cohort | Prospective cohort | Retrospective (case control) | Prospective cohort |
| **Total Sample Size (N)** | 50 | 247 | 432 | 103 | 202 | 101 |
| **Delirium (Cases)** | 7 | 93 | 23 | 19 | 13 | 27 |
| **Mean /Median age** | 66 |  | 51.7 |  | 68.1 | 76 |
| **Type of Sleep Disorder** | Obstructive sleep apnea | Not specified | Sleep deprivation | Not specified | Obstructive sleep apnea | Not specified |
| **Timing of Sleep Disorder** | Preoperative | Preoperative | Postoperative (before delirium) | Postoperative (after delirium) | Preoperative | Preoperative |
| **Seep Quality Assessment Tool** | PSQI, GSDS, sleep diary | None | None | None | None | PSQI, WASO |
| **Delirium Assessment Tool** | CAM | CAM | DSM-IV | DSM-IV | Stated by Caregivers | CAM |
| **Type of Surgery** | Non cardiac sugery | Thoracic surgery | Thoracic surgery | Cardiac surgery | Orthopedic surgery | Orthopedic surgery |
| CAM: Confusion Assessment Method | | | | | | |
| DSM-IV: Diagnosis and Statistical Manual of Mental Disorders | | | | | | |
| DRS-R-98: Delirium Rating Scale-Revised-98 | | | | | | |
| PSQI: Pittsburgh Sleep Quality Index | | | | | | |
| GSDS: General Sleep Disturbance Scale | | | | | | |
| AHI: Apnea - Hypopnea Index | | | | | | |

**Supplemental Table 2. Study Characteristics (Continued)**

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| **Author** | **Flink et al** | **Roggenbach et al** | **Wang et al** | **Zhang et al** | **Bosmak et al** | **Cheraghi et al** |
| **Year** | 2012 | 2014 | 2015 | 2015 | 2017 | 2016 |
| **Country** | U. S | Germany | China | china | Brazil | Iran |
| **Study Design** | Prospective cohort | Prospective cohort | Retrospective cohort | Prospective cohort | Retrospective cohort | Prospective cohort |
| **Total Sample Size (N)** | 106 | 92 | 200 | 249 | 56 | 40 |
| **Delirium (Cases)** | 27 | 44 | 17 | 76 | 5 | 9 |
| **Mean /Median age** | 73.3 | 67.5 | 65 | 62.9 | 63 | 59.19 |
| **Type of Sleep Disorder** | Obstructive sleep apnea | Obstructive sleep apnea | Not specified | Not specified | Not specified | Not specified |
| **Timing of Sleep Disorder** | Preoperative | Preoperative | Postoperative (before delirium) | Postoperative (before delirium) | Preoperative | Preoperative |
| **Seep Quality Assessment Tool** | Polysomnography or use of continuous positive airway pressure | AHI using nocturnal polygraphic readings from portable polygraphs | None | None | None | PSQI |
| **Delirium Assessment Tool** | CAM, DRS-R-98, DSM IV, patient chart documentation | CAM for ICU | CAM | CAM | Patient Chart records | CAM for ICU |
| **Type of Surgery** | Orthopedic surgery | Cardiac surgery | Orthopedic surgery | Cardiac surgery | Orthopedic surgery | Cardiac surgery |
| CAM: Confusion Assessment Method | | | | | | |
| DSM-IV: Diagnosis and Statistical Manual of Mental Disorders | | | | | | |
| DRS-R-98: Delirium Rating Scale-Revised-98 | | | | | | |
| PSQI: Pittsburgh Sleep Quality Index | | | | | | |
| GSDS: General Sleep Disturbance Scale | | | | | | |
| AHI: Apnea - Hypopnea Index | | | | | | |