**Supplemental Table 48. Description of studies that have evaluated a multi-component sleep protocol in the ICU**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **First author and year** | **Study design** | **Population** | **Intervention components** | **Outcomes studied** | **Sample size per group** | **Results** | **Limitations** | **Quality of evidence** |
| Hu 2015 [1] | RCT | Heart surgery patients (2/3 valves) in ICU for ≥ 48 h | Earplugs and eye masks at night and 30 min of relaxing music (vs usual care) | Patient self-reported sleep (RCSQ) | 20 intervention, 25 control | Perceived sleep quality better in the intervention group | Allocation concealment unclear. Outcome assessments not blinded. Population not generalizable. | Low to very low; highest for sleep quality and delirium. |
| Kamdar 2013 [2] | Observational pre- postintervention | Medical ICU ≥ 24 h | 1. Nighttime environmental interventions.  Daytime interventions to promote normal circadian  rhythms and nighttime sleep.  2. Above  plus nonpharmacological sleep aids.  3. Pharmacologic guideline added for patients unable to sleep despite the Stage  1 and 2 interventions | In ICU: Patient sleep on RCSQ reported by patients or assessed by nurses if needed (45%).  Delirium (CAM-ICU).  Post-ICU:  Patient retrospective sleep repost (SICQ).  Neuro cognitive function.  LOS.  Mortality. | 122 baseline  178 intervention | No improvement in sleep quality.  Delirium decreased.  No reduction in ICU or hospital length of stay  or mortality | Low uptake of some internventions especially ear plugs, eye shades and music. | Very low |
| Li 2011 [3] | Observational pre- postintervention | Med-surg ICU | Eye shades plus earphones with relaxing music | Sleep – self-reported.  Deliium  CAM-ICU | 15 baseline, 13 intervention | No improvement in self-reported sleep.  No decrease in delirium | Small sample size | Low |
| Patel 2014 [4] | Observational pre- postintervention | Med-surg ICU ≥ 1 night, off sedation 24 h. | Noise and light reduction, patient care practices to minimise interruptions, target sedation, early mobilization; simultaneously introduced. | Self-reported sleep (RCSQ)  Delirium – CAM-ICU | 31 baseline, 29 intervention | Improved self-reported sleep quality.  Decreased delirium. | Unclear if patients still affected by sedatives. | Very low |

RCSQ – Richards-Campbell Sleep Questionnaire; CAM-ICU – Confusion Assessment Method for the ICU; SICQ – Sleep in Intensive Care Questionnaire

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