



Minimizing Bias in Systematic Reviews: Comment on Kunisaki et al, Provider types and Outcomes in Obstructive Sleep Apnea Case Finding and Treatment: A Systematic Review

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Minimizing Bias in Systematic Reviews

We read with interest the systematic review by Kunisaki and colleagues and are concerned that various aspects of their systematic review severely limit their conclusions. The authors concluded that healthcare delivery to patients with obstructive sleep apnea (OSA) by sleep specialists was the same as that by non-specialists. For one of the most important outcomes, adherence to continuous positive airway pressure (CPAP) therapy, which influences the downstream health benefits of treating OSA, pooled analysis was not provided in the manuscript. Performing a meta-analysis of the same studies included by the authors reveals a mean difference of 29 minutes (95% confidence interval [95%CI]; -5, 63 minutes; $P=0.09$) of nightly CPAP use favoring sleep specialists with consistency ($I^2=0\%$; $P=0.44$). If we include our prior study (1) to their meta-analysis ($n=502$) we find greater CPAP adherence by 40 minutes (95%CI 10, 70; $P=0.008$) in the sleep specialists group with consistency ($I^2=10\%$; $P=0.35$). Our study involved prospectively enrolled participants in a multi-center real-world setting but was excluded for unclear reasons. Also, included studies were misclassified in that studies with arms that included nurses with 15 years of experience in managing sleep patients or sleep medicine trained nurses were categorized as non-sleep specialists. Other studies focused more on how studies were scored rather than how healthcare was delivered. A majority of included studies did not consider the accreditation status of the sleep center and by ignoring such context/setting they failed to account the effect of care delivery protocols and attendant quality metrics. Moreover, most included studies were not performed in the United States thus limiting the generalizability of this study within the U.S.. The authors suggest that there is a need for large pragmatic studies that includes both nonacademic and academic settings. Such studies exist but these studies were excluded for unclear reasons(1, 2). In general, systematic reviews need to provide strict inclusion and exclusion criteria that are devoid of bias even though the authors themselves may exercise a consensus-derived decision to exclude certain “inconvenient” data. PRISMA guidelines require that reasons for exclusion of individual studies, provision of measures of consistency of the pooled analysis, and sensitivity analyses are provided. Other guidelines recommend investigators contacting authors of published data for additional information if needed (3). Adoption of such guidelines could have helped minimize bias in this important review.

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