Reynolds and colleagues (2018) highlight the role that comorbid medical conditions play in exacerbating negative quality of life outcomes for pediatric populations. They demonstrated that in minority youth with persistent asthma, those with more comorbid conditions also experienced, on average, poorer sleep and academic outcomes. More specifically, higher cumulative risk index (CRI) scores (i.e., more comorbidities) were significantly related to decreased sleep duration and increased school absences. CRI scores were also assessed as a moderator between asthma-related lung function and sleep and academic functioning. They found that better lung function was associated with better sleep efficiency for individuals with one comorbid condition; CRI scores did not moderate the relationships among the remaining models. Multiple comorbidities may create a more complex picture for understanding the relationship between lung function and sleep quality. Additionally, higher sleep-disordered breathing (SDB) risk was associated with more school absences in the full sample and in the Latino group, but not for the African-American group. However, African-American children had higher rates of SDB risk than Latino children. This work contributes to the literature on sleep problems and underscores the compounding impact of chronic medical conditions on functional outcomes. However, certain family- and cultural-level components were not fully explored, and further research is needed to better understand the complex relationships between comorbidities of chronic health conditions and sleep quality.

Factors that potentially impact children’s sleep are critical to investigate, particularly in pediatric populations, given that sleep problems contribute to negative cognitive, academic, and socioemotional outcomes and approximately 50–70% of children with chronic medical and/or neurodevelopmental conditions experience sleep problems (Evans, Djilas, Seidman, Zeltzer, & Tsao, 2017; Köse, Yilmaz, Ocakoglu, & Özbaran, 2017). While the current study demonstrated a strong relationship between comorbid conditions and sleep quality, other unexplored areas may provide additional explanation for these findings, including socioeconomic status (SES), cultural differences in sleep practices and beliefs, and parent knowledge of healthy child sleep. This commentary will discuss the possible contribution of these three variables to the results found by Reynolds and colleagues and provide suggestions for future directions. Obtaining a more comprehensive view of the factors that impact sleep and other quality of life outcomes is especially important for youth with chronic medical conditions.

Ethnicity and SES appear to impact the amount and quality of children’s sleep. While the current study investigated group differences in sleep by ethnicity, the authors did not thoroughly explore the potential impact of SES. Consistent with prior research demonstrating that SES plays a role in sleep quality (Buckhalt, 2011; Buckhalt, El-Sheikh, & Keller, 2007; El-Sheikh, Kelly, Buckhalt, & Benjamin Hinnant, 2010), Reynolds and colleagues (2018) found that the relationship between poverty status and sleep duration in the overall sample approached significance.
However, the authors did not include SES in their models pertaining to the relationships among comorbidities and sleep quality. Research indicates that SES is implicated in the relationships between sleep and cognitive functioning and psychosocial adjustment (Buckhalt et al., 2007; El-Sheikh et al., 2010). Thus, SES may provide a unique contribution to understanding children’s sleep, particularly when assessing sleep outcomes in ethnically diverse youth with chronic medical conditions. For example, SES is important to consider in asthma management (Largent, Nickerson, Cooper & Delfino, 2012). Therefore, in the results found by Reynolds and colleagues (2018), SES could relate to and explain a portion of the variance in the relationships among asthma control, ethnicity, sleep quality, and academic outcomes. Considering the role of SES among these variables in future studies would likely provide a more comprehensive picture as to how these factors are linked to one another.

Relatively, sleep habits are influenced by cultural factors, including beliefs about the purpose of sleep, culturally normed sleep practices, and expectations for adequate sleep duration (Owens, 2004). Reynolds and colleagues (2018) investigated sleep outcomes across ethnicities but did not assess for potential differences in sleep practices or beliefs by culture. It may be that group differences based on ethnicity could be better explained by specific sleep-related practices or beliefs that co-vary with ethnicity. Sleep-related beliefs and practices could also differ in families with comorbid medical conditions as increased medical complexity may impact expectations for sleep habits or beliefs regarding the relative importance of sleep. Thus, future research would benefit from including measures assessing beliefs about sleep and culturally defined sleep practices to better understand the role of culture in children’s sleep.

In addition to sleep-related practices, parental sleep knowledge is associated with sleep habits (Owens, Jones, & Nash, 2011), although this relationship has not been examined in diverse cultures. Parent knowledge of healthy child sleep habits is relatively poor, even in typically developing children (Fehr, 2015; Owens & Jones, 2011; Owens et al., 2011; Schreck & Richdale, 2011). An intervention to increase sleep knowledge was found to be effective for adolescents (Cortesi, Giannotti, Sebastiani, Bruni, & Ottaviano, 2004). However, gains in knowledge were not associated with sleep habits, indicating a more complex model is needed. Currently, there is little research available on parent knowledge of child sleep in families of youth with health conditions (McDowell, Galland, Campbell, & Elder, 2017). Factors related to parent knowledge of healthy child sleep were not included in the current study. Understanding parent sleep knowledge and associated variables in this population could inform interventions to increase awareness and knowledge of sleep, actual positive sleep habits, and comprehension of the significant impact of risk factors for youth with multiple comorbid chronic health conditions.

Overall, the current study makes vital contributions to the literature on child sleep. Still, further investigation is necessary to address gaps in the current research. This includes expanding research on sleep in youth with chronic medical conditions to explore the potential contributions of SES and culturally influenced sleep norms and practices. Further, understanding additional family-level factors that relate to sleep outcomes, including parent knowledge of healthy child sleep, would provide vital information about the complex interplay among the individual, family, and cultural components that impact sleep outcomes for youth with chronic health conditions.

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**References**


