

Attainment of Sleep Recommendations by Persons with Bardet-Biedl Syndrome



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Background: Sleep disorders, decreased sleep duration and poor sleep quality are associated with obesity. People with Bardet-Biedl Syndrome (BBS) often are obese hence sleep is an important consideration in managing BBS and improving patients' quality of life. This study set out to evaluate participants sleep patterns and attainment of daily sleep recommendations.

Methods: The Clinical Registry Investigating Bardet-Biedl Syndrome (CRIBBS) is a health registry of people with BBS created to accelerate research and develop effective treatments. This study recruited 103 participants through CRIBBS. Sleep was objectively assessed in participants using wrist-worn triaxial accelerometry (ActiGraph Link). Link was mailed to participants to wear for 12 full days. Descriptive analyses included total sleep time, wake after sleep onset, number of awakenings, and sleep efficiency stratified by age group, gender, and BMI category. Further statistical analyses assessed participants above, achieving, and below sleep recommendations; and composite global sleep score stratified by age group. Correlation analyses identified relationships between sleep measures adjusting for age and BMI.

Results: Participants showed meaningful differences in meeting daily sleep recommendations. More male participants than females met recommendations (81% vs 66%). More participants of normal weight met recommendations compared to overweight and obese participants (100%, 78%, and 58% respectively). Participants meeting daily recommendations showed higher sleep efficiency compared to those below recommendations (83.3% vs 80.6%). Additionally, adult participants (>30years) showed higher composite sleep scores in comparison to younger adult participants. Younger children (<12years) also had better composite sleep scores compared to older children implying fewer awakenings, better sleep efficiency and longer sleep duration.

Conclusions: This study provided novel information on differences in meeting sleep recommendation based on age, BMI and gender in the BBS population. Study data also provided comprehensive reference sleep values and key information to shape management or additional research efforts in BBS.