The Use of Actigraphy and its Impact on Perceived Sleep Quality and Activity Levels in Individuals With Traumatic Brain Injury in an Inpatient Rehabilitation Setting.

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THE USE OF ACTIGRAPHY AND ITS IMPACT ON PERCEIVED SLEEP QUALITY AND ACTIVITY LEVELS IN INDIVIDUALS WITH TRAUMATIC BRAIN INJURY IN AN INPATIENT REHABILITATION SETTING

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OBJECTIVES: The purpose of this study was to examine sleep quality, activity levels, and rehabilitation outcomes in patients with Traumatic Brain Injury (TBI) participating in inpatient neuro-rehabilitation.

RESULTS: For 4 consecutive days, subjective ratings of sleep quality, measured using the Pittsburgh Sleep Quality Index, and activity levels were collected from patients with TBI (N=4) by a trained rater. Gait distance measures by physical therapy were also collected daily. Participants were asked to wear a Fitbit device on days 3 and 4 only. Activity and sleep variables from the Fitbit were recorded. Patients’ medical records were reviewed for demographic data, clinical characteristics, and rehabilitation outcomes (measured by Care Tool scores and length of stay) at admission and discharge.

RESULTS: 4 participants (3 males and 1 female) with mild TBI completed the study and preliminary results supported statistically significant trends between data collected via Fitbit and participants’ ratings of their functioning (e.g. ratings of sleep quality correlated with number of steps taken; R~.99; p<.01; and active minutes; R=.94; P=0.5; and steps taken correlated with ratings of pain before bed; R=.98; P=.01). Fitbit metrics also correlated significantly with length of stay (e.g. number of steps on day 3; R=.95; p<.05) and Care Tool scores (e.g. time slept at night on day 4; R=.90; p<.05). We also observed trends of statistically significant correlations between participants’ estimates of their sleep quality and rehabilitation outcomes (e.g. number of hours slept at night and Care Tool scores at admissions and discharge; ranging from R=.95-.99; p<.05).

CONCLUSIONS: These initial data suggest relationships between participants’ perceptions of their sleep and activity levels, objective data collected from an actigraphy device, and rehabilitation outcome measures. Given the low sample size at present, the implications of these findings are not fully understood, but it is expected that further data collection will yield meaningful results.

THERAPY CONSULTS AND LENGTH OF STAY IN ELDERLY PNEUMONIA

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OBJECTIVES: To examine the relationship of physical therapy with length of stay in elderly patients admitted for pneumonia.

RESULTS: In our study of ninety-two elderly patients diagnosed with pneumonia, the physical therapy consult group of sixty-one patients showed a greater average hospital stay (+1.99 days 95% CI [0.43, 3.55]), frequency of social work consult, >2 (2, N=92) = 20.21, p = 0.000007, and frequency of rehabilitation disposition, >2 (2, N=92) = 13.37, p = 0.001. Since social work consults and rehabilitation dispositions independently related to longer stays (+2.07 days [0.60, 3.54]; +3.18 days [1.72, 4.64], respectively), we excluded cases with the variables and repeated our study. Subsequent analysis of thirty-nine patients no longer showed a significantly longer stay in the physical therapy group of twenty patients (+0.84 days [-0.68, 2.36]). No significant differences were noted between the physical therapy consultation and non-consult groups in terms of pneumonia severity, comorbidities prior functional level, age, sex, race, or insurance status.

CONCLUSIONS: In our study, elderly pneumonia patients who receive physical therapy do not average shorter stays. Our focus on presence, not timing, of physical therapy may explain discrepancy with past study. We also identify social work and discharge placement as independent associates with longer stays. Findings may aid design of trials that define physical therapy’s role in pneumonia care.