Sleep Disturbance and Pain Assessment: A Comparative Study between Sleep Diary, Questionnaire and Actigraphy in Chronic Low Back Pain

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PURPOSE/ BACKGROUND
- Sleep disturbance in chronic low back pain (CLBP) is a common problem, which may intensify pain. Few studies have examined subjective (self-assessment) and objective (actigraphy) measures of sleep simultaneously.

AIMS
- This study aimed to evaluate the association between pain experience in CLBP and sleep disturbance, using subjective and objective sleep indicators.

METHODS
- CLBP (N=69; mean age 56±12 yrs.; 57% female) patients were enrolled and self-report measures of sleep assessment (quality, disturbance) Pittsburgh Sleep Quality Index (PSQI), sleep diary and pain experiences (severity and interference with activities) using Brief Pain Inventory (BPI) obtained. All participants completed PSQI in the past month and sleep diary for average of six nights. A subset of the sample (N=13; mean age 55±9 yrs.; 92% female) also tracked their sleep for six nights using actigraphy.

RESULTS
- Eighty five percent of the total sample had mean PSQI scores at or above the cut-score indicating poor sleep.
- Individuals who reported greater PSQI sleep disturbance also recorded greater sleep awakening (r=.4, p=.002) and feeling less rested upon awakening (r=-.35, p=.013) in their sleep diaries.
- Greater pain severity was associated with greater sleep disturbance (r=.59, p=.000) and with poorer sleep quality (r=-.26, p=.06) and feeling less rested (r=.29, p=.03).
- Likewise, pain interference was associated with greater sleep disturbance (r=.45, p=.000) and with poorer sleep quality (r=-.32, p=.019) and feeling less rested (r=.32, p=.019).

CONCLUSIONS
- Findings demonstrate that CLBP patients who reported greater sleep disturbance experienced greater pain severity and greater pain interference with activities.
- Actigraphy data adds insight to understand sleep disturbances.
- Including assessment and management of sleep disturbance will provide for more comprehensive management in CLBP.

FUTURE NURSING IMPLICATIONS
- Subjective and objective measures can help provide a full assessment of sleep disturbance.
- Need for longitudinal studies to better identify the validity of the subjective and objective measures.
- Improve the understanding of sleep parameters that are most relevant to assess sleep disturbance in CLBP.
- Interventions to help promote sleep and thereby improve quality of life in CLBP.
- Robust studies – identify reliable and valid assessment methods.
- Wearable technologies should be incorporated in pain research to identify patterns of activity that influence pain and other symptoms.