PILOT STUDY:

SLEEP DISTURBANCE
AND
FATIGUE
IN RENAL TRANSPLANT PATIENTS

Kandace J. Landreneau, PhD, RN, CCTC
Associate Professor, Graduate Studies and Research
Northwestern State University
There have only been a few studies about sleep disturbance in Renal Transplant patients. Sleep problems have not been fully studied in renal transplant patients yet...
SLEEP DISTURBANCE

- Sleep Disturbance is **NOT** a Sleep Disorder
  
  (Sleep Disorders: Sleep Apnea, Restless Legs Syndrome, Periodic Leg Movement, etc.)

- Sleep Disturbance is commonly known as problems related to:
  
  trouble falling asleep
  
  trouble staying asleep
  
  etc.
FATIGUE

- Tired
- Anemia
- Interferes with daily activities
SPECIFIC AIMS OF THE PILOT STUDY

- Pilot test feasibility of recruitment strategies, completion time for all measures and use of actigraphy for both the wrist and ankle.

- Establish effect sizes for estimating sample size for the larger study.

- Describe prevalence of insomnia subtypes (initiation insomnia, maintenance insomnia, daytime sleepiness, sleep restriction) by gender.

- Test relationships between objective sleep disturbance (actigraphy wake/sleep rhythm, total sleep time day and night, wake after sleep onset) and a) selected biomarkers (Hgb, Hct), and b) dimensions of fatigue of both men and women.

- Test relationships between subjective sleep disturbances (time to fall asleep, awakenings) and fatigue.
DESIGN

- Descriptive, pre-post test design
- Participant as his/her own control
SAMPLE AND SETTING

- Convenient sample – (one of the world's largest renal transplant programs)
- 10 Renal Transplant (RT) participants consented
- 4 RT participants had sleep disturbance
- Pilot study sample: 4 RT participants
DATA COLLECTION

- Demographics sheet
- Sleep disturbance questionnaires
- Fatigue questionnaires
- Actigraphy – 7 days
- Sleep Diary – 7 days
DATA ANALYSIS

- Since the sample n=4,

  it is better to stay with just describing the 4 participants
DATA ANALYSIS
PARTICIPANT #1

- GSDS score of 3.9 (must have a score of 3 or >3 = sleep disturbance)
- Moderate fatigue in the mornings and evenings
- Daytime functioning was fair over the 7 days
- Sleep quality in diary (self-report) was fair over 7 days
- Sleep efficiency over 7 nights of actigraphy was 22% - terrible!
- Average minutes of sleep in 7 nights was less than 2 hours each night - again, terrible!
- Daytime napping over the 7 days was only an average of 1 hour per day – not enough sleep!
ABNORMAL SLEEP PATTERN - #1
2 DAYS AND NIGHTS - NORMAL
DATA ANALYSIS

PARTICIPANT #2

- GSDS score of 3 (must have a score of 3 or >3 = sleep disturbance)

- Moderate fatigue in the mornings and a large amount of fatigue in the evenings

- Daytime functioning was self-reported as fair over the 7 days

- Sleep quality, in diary (self-report), was good over 7 days

- Sleep efficiency over 7 nights of actigraphy was 41% - terrible!

- Average minutes of sleep in 7 nights was less than 3 hours each night – again, terrible!

- Daytime napping over the 7 days was only an average of 2 MINUTES per day – not enough sleep!
DATA ANALYSIS
PARTICIPANT #3

- GSDS score of 3 (must have a score of 3 or >3 = sleep disturbance)

- Moderate fatigue in the mornings and a large amount of fatigue in the evenings

- Daytime functioning was moderately affected over the 7 days

- Sleep quality, in diary (self-report), was fair over 7 days

- Sleep efficiency over 7 nights of actigraphy was 56% - terrible!

- Average minutes of sleep in 7 nights was almost 5 hours each night – not enough sleep!

- Daytime napping over the 7 days was NONE per day – not enough sleep during the night and need naps during the day.
DATA ANALYSIS
PARTICIPANT #4

- GDS score of 3 (must have a score of 3 or >3 = sleep disturbance)
- Minimal fatigue in the mornings and a large amount of fatigue in the evenings
- Daytime functioning was moderately affected over the 7 days
- Sleep quality, in diary (self-report), was good over 7 days
- Sleep efficiency over 7 nights of actigraphy was 92% - fantastic!
- Average minutes of sleep in 7 nights was almost 8 hours each night – good!
- Daytime napping over the 7 days averaged 1 ½ hours per day – which is fine.
- This participant sleeps well and no morning fatigue.
DISCUSSION

- Small n, Pilot Study - the findings are not statistically significant

- Sample (4 participants) is too small to do correlations.

- Even though there were only 4 participants, self report of sleep quality correlated with actigraphy in all 4 participants.

- The better the self-report, the better the sleep efficiency and the more minutes of sleep.

- Between the lab values (Creatinine/BUN/Hgb/Hct) and sleep variables (fatigue, sleep quality, sleep efficiency), the better the sleep and the more minutes of sleep, the lower the creatinine and BUN.