Features of nightmares during in-lab video polysomnography

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INTRODUCTION

- Nightmares are characterized as repeated dysphoric dreams with awakening from sleep causing significant distress and impairment.

- Nightmares are rarely captured in the sleep lab and previous literature highlights subjective nightmare characteristics.

- The purpose of this study is to characterize nightmares and sleep in patients reporting a nightmare during in-lab video polysomnography (PSG).

- The primary out come is to reveal prevalence of nightmare during PSG study.

- The secondary out come is to provide objective data in characterize nightmare.

METHODS

Study Sample: We review of 2571 post-PSG questionnaire performed in our laboratory between December 2017 and September 2018

Nightmares and Trauma-Related Nightmares:
A single item from the PSQI was used to assess nightmare frequency. A response of bad dreams at least weekly is consistent with NDO.
A single item from the PSQI-A was used to assess TRN. For the diagnosis of TRN, individuals were required to have at least weekly bad dreams on the PSQI and memories/nightmares of traumatic experiences on the PSQI-A.

OSA: Patients with a PSG demonstrating apneas or hypopnes with an apnea-hypopnea index (AHI) > 5 events/h were rendered a diagnosis of OSA, and (AHI) >15 events/h were identified as moderate/severe OSA.

Mental Health Disorders and Traumatic Brain Injury: Diagnoses of interest to include depression, anxiety, PTSD, and traumatic brain injury (TBI) were obtained from each patient's EMR.

PSG Data:
Level 1 PSG tests were performed in accordance with American Academy of Sleep Medicine (AASM) standards within an AASM accredited laboratory.
PSG was performed with 16 channels, including: EOG, EEG, ECG, EMG, airflow measurements oronasal-thermal sensors and nasal air pressure transducers, transtracheal sounds via microphone, rib cage and abdominal movement by thoracoabdominal belts, and continuous pulse oximetry.
Studies were scored utilizing the 2012 AASM scoring guidelines. PSG-measured variables, to include sleep onset latency (SOL), rapid eye movement (REM) sleep latency, total sleep time (TST), SE, sleep stages (stage N1, stage N2, stage N3, stage R sleep), wake after sleep onset (WASO), arousal index, AHI, and maximal desaturation were analyzed.
All test results were reviewed and adjudicated by a board-certified sleep medicine physician.

RESULTS
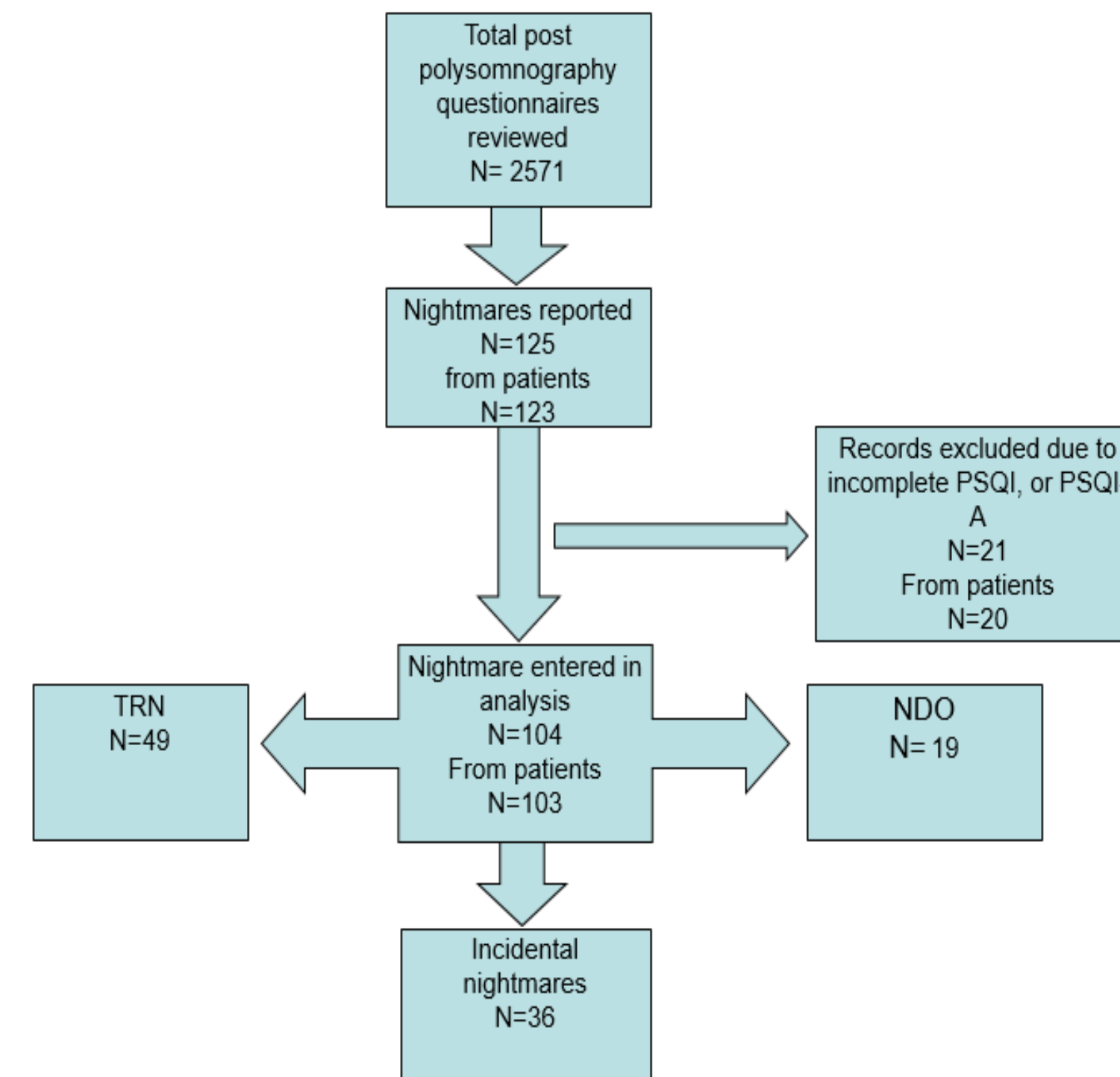
- 125 nightmares were reported by 123 different patients.

- The prevalence of nightmare during PSG was 4.86%

- The cohort consist of 104 patients with 67 males and 37 females, age range 24-65 (mean = 36.6).

- Among 104 episodes of nightmares 49 consist with TRN, and 19 consist with NDO, and 36 are incidental.

- 10 nightmare were reported as "accurate replay of previous traumatic event.", 48 were reported as "Mix of replay/non-replay events", while 44 were reported as "non-replay or unknown".

- 5 PSGs patient's body movement were consistent with REM sleep without atonia, and 6 PSGs, patient's behavior were consistent with dream enactment.

Demographic variables	Entire sample	TRN (n= 49)	NDO (N= 19)
Age	38.1 ± 10.9	36.9 ± 8.5	39.5 ± 13.2
Sex	64.4	80.0	20.5
BMI	28.1 ± 4.6	27.9 ± 3.9	28.9 ± 4.3

Questionnaires/conditions	Entire sample	TRN (n= 49)	NDO (N= 19)
ESS score	12.8 ± 5.5	12.6 ± 5.7	15.2 ± 5.9
ISI score	18.1 ± 5.7	20.2 ± 4.6	17.8 ± 5.0
AHI	12.6 ± 16.0	9.8 ± 12.3	10.9 ± 11.5
Chronic pain	28 (27%)	11 (78.6	3 (21.4)
Anxiety	38 (36.5%)	18 (66.7)	9(33.3)
Depression	31 (30.0%)	17 (77.3%)	5 (22.7)

PSG variables	Entire sample	TRN (n= 49)	NDO (N= 19)
REM latency (min)	136.9 ± 81.3	12.6 ± 16.0	12.6 ± 16.0
TST (min)	346.1 ± 58.5	347.3 ± 51.2	346.6 ± 48.1
Stage N1 sleep (%TST)	10.5 ± 8.7	10.6 ± 7.6	8.7 ± 7.9
Stage N2 sleep (%TST)	56.6 ± 11.5	58.7 ± 11.5	52.1 ± 12.3
Stage N3 sleep (%TST)	15.4 ± 10.9	13.7 ± 11.2	20.7 ± 12.5
AHI (events/hr)	12.6 ± 16.0	12.3 ± 1.8	11.5 ± 2.6
REM arousal index (event/hr)	16.0 ± 15.9	12.6 ± 16.0	12.6 ± 16.0
Lowest oxygen desaturation (%)	88.1 ± 7.13	89.5 ± 3.8	86.9 ± 9.0

DISCUSSION

- This is the first study to characterize nightmares occurring during in-lab video PSG.

- The rate of nightmare occurrence during PSG was 4.86% in our study, which approximates the prevalence of nightmare disorder in the general population.

- More than half of patients in our largely military cohort reported replicative trauma related nightmares.

- Our data suggests nightmares may be more common in the monitored setting than previously thought.

- Deeper analysis of REM sleep may reveal objective evidence of reported nightmares that is often overlooked.

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