

tenderness, difused myalgia and fatigue in healthy individuals [5] especially if this disruption continues for consecutive nights of sleep.

However, the sleep abnormality and unrefreshed sleep in fibromyalgia could be more than a reduction in SWS and alpha-intrusion pattern. Emerging information has shown the comorbidity of fibromyalgia with obstructive sleep apnea (OSA) [8-13]. Obstructive sleep apnea (OSA) is characterized by recurrent episodes of partial and complete airway obstruction during sleep resulting in excessive daytime sleepiness [14]. Polysomnography is used to diagnose obstructive sleep apnea and its severity based on the apnea-hypopnea index (AHI). OSA is defined when the AHI is ≥ 5 where AHI of 5-15 is mild, 15-30 is moderate, and >30 is severe [10]. A study looking at male sleep apnea patients found 27% had criteria for fibromyalgia [12]. In another study by Rosenfeld VW et al., obstructive sleep apnea was reported to be 45% in the fibromyalgia group [9].

Across studies, there is a vast amount of evidence that suggests that sleep and pain are also related. Sleep complaints are present in 67-88% of chronic pain disorders and at least 50% of individuals with insomnia suffer from chronic pain [15,16]. Longitudinal evidence shows a directional effect of pain on sleep involving patients with fibromyalgia, rheumatoid arthritis and burn injury [16]. Roehrs et al. found a loss of 4 hours of REM sleep was associated with hyperalgesia [17]. A decrease in REM sleep is a common issue for fibromyalgia patients who may attribute to the musculoskeletal pain and stiffness found in these patients. Whereas, in patients with obstructive sleep apnea the apneic episodes generally occur during REM sleep. For some patients, they exclusively occur during REM sleep which could also be related to a hyperalgesic state. The aim of this study is to evaluate the frequency of OSA in fibromyalgia patients and its occurrence with REM and non-REM sleep.

Materials and Methods

Research design

This study was a retrospective chart review conducted at Loyola University Medical Center with IRB approval. IRB protocol number 208577.

Subject

Charts of all the patients who visited the clinic of one psychosomatic medicine specialist from January 2015 to December 2015 were reviewed for patients diagnosed with fibromyalgia, OSA, and patients with combined fibromyalgia and OSA.

The inclusion criteria consisted of:

1. Patients formerly diagnosed with fibromyalgia by their primary care physician
2. Patients diagnosed with OSA.

(62%), apnea/hypopnea worse in REM sleep n=6 (75%), with a mean REM Apnea Hypopnea Index of 37.5 events per hour.

Diagnosis of Fibromyalgia

N=14 (11 Females; 3 Males; Mean Age 54.6)

Sleep Apnea N=10 (71%) (8 Females; 2 Males; Mean Age 59.5)

13. May KP, West SG, Baker MR, Everett D W (1993) Sleep apnea in male patients with the fibromyalgia syndrome. *Am J Med* 94: 505-508
14. Franklin KA, Lindberg E (2015) Obstructive sleep apnea is a common