



Is sleep disordered breathing a risk factor for REM sleep behavior disorder in military Veterans with Parkinson’s disease?

Sarwar, A.I.^{1, 2} and Moore, S.¹

¹ Michael E. DeBakey VA Medical Center, Parkinson’s Disease Research, Education and Clinical Center
² Baylor College of Medicine, Houston, Texas

Objective: To study the association of sleep disordered breathing with REM sleep behavior disorder in U.S. military Veterans with Parkinson’s disease.

Background: Both REM sleep behavior disorder (RBD) and sleep disordered breathing (SDB) are common in patients with Parkinson’s disease (PD). Prior smaller studies involving non-Veterans from other countries have found SDB to be more frequent and severe in PD patients with RBD. No such observation in U.S. military Veterans has been reported.

Methods: A total of 126 Veterans with PD followed in our movement disorders clinic were evaluated for the presence of RBD using the English language version of the REM Sleep Behavior Questionnaire-Hong Kong (RBDQ-HK) [cut off score 20]. Groups with and without RBD were assessed for risk for SDB using modified Berlin Questionnaire. All subjects were screened for excessive daytime sleepiness using Epworth Sleepiness Scale (ESS) [cut off score 10]. PD disease severity and cognition were assessed using Hoehn and Yahr rating scale (H&Y) and Unified Parkinson’s Disease Rating Scale (UPDRS), respectively.

Results: The groups with and without RBD included 64 and 62 subjects respectively. SDB risk as estimated by three category 1 questions of modified Berlin questionnaire (Snoring, Gasping, Observed Apnea) was significantly increased in the group with RBD as compared to the one without. However, when the groups were sub-divided into “Sleepy” (ESS ≥ 10) and “Non-Sleepy” (ESS < 10), the significant difference was only noted in the “Sleepy” group. The groups were comparable with respect to age, gender distribution, disease severity (H&Y, median = 2.0 for both), and cognition (UPDRS question 1, median = 1 for both).

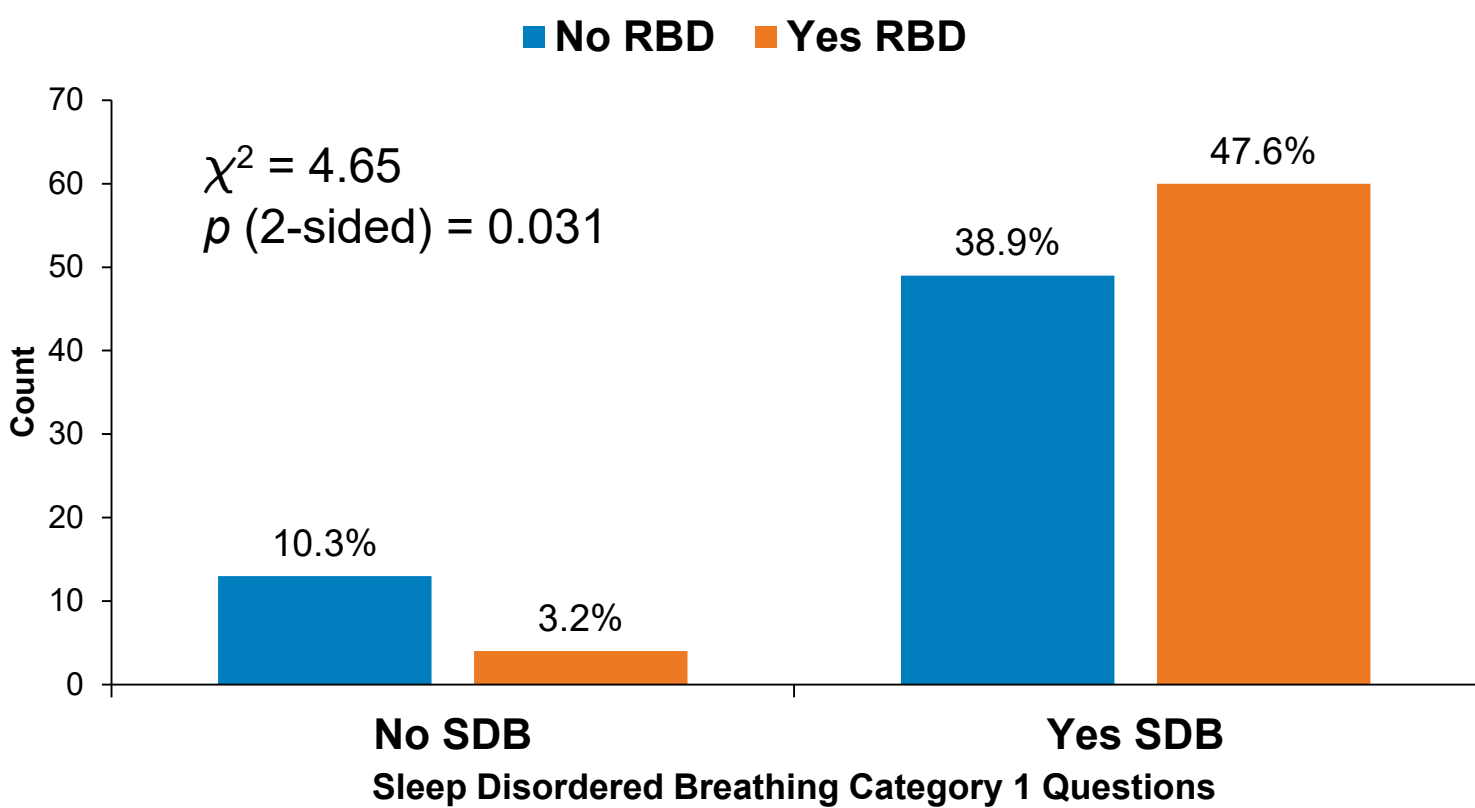
Conclusions: The risk for sleep disordered breathing is higher in US military Veterans with Parkinson’s disease who also endorse symptoms suggestive of REM sleep behavior disorder. Day time sleepiness may be a biomarker for this association in this group of patients. Additional work is needed to confirm these findings.

REM Behavior Disorder Scores for Each Sleep Disordered Breathing Question

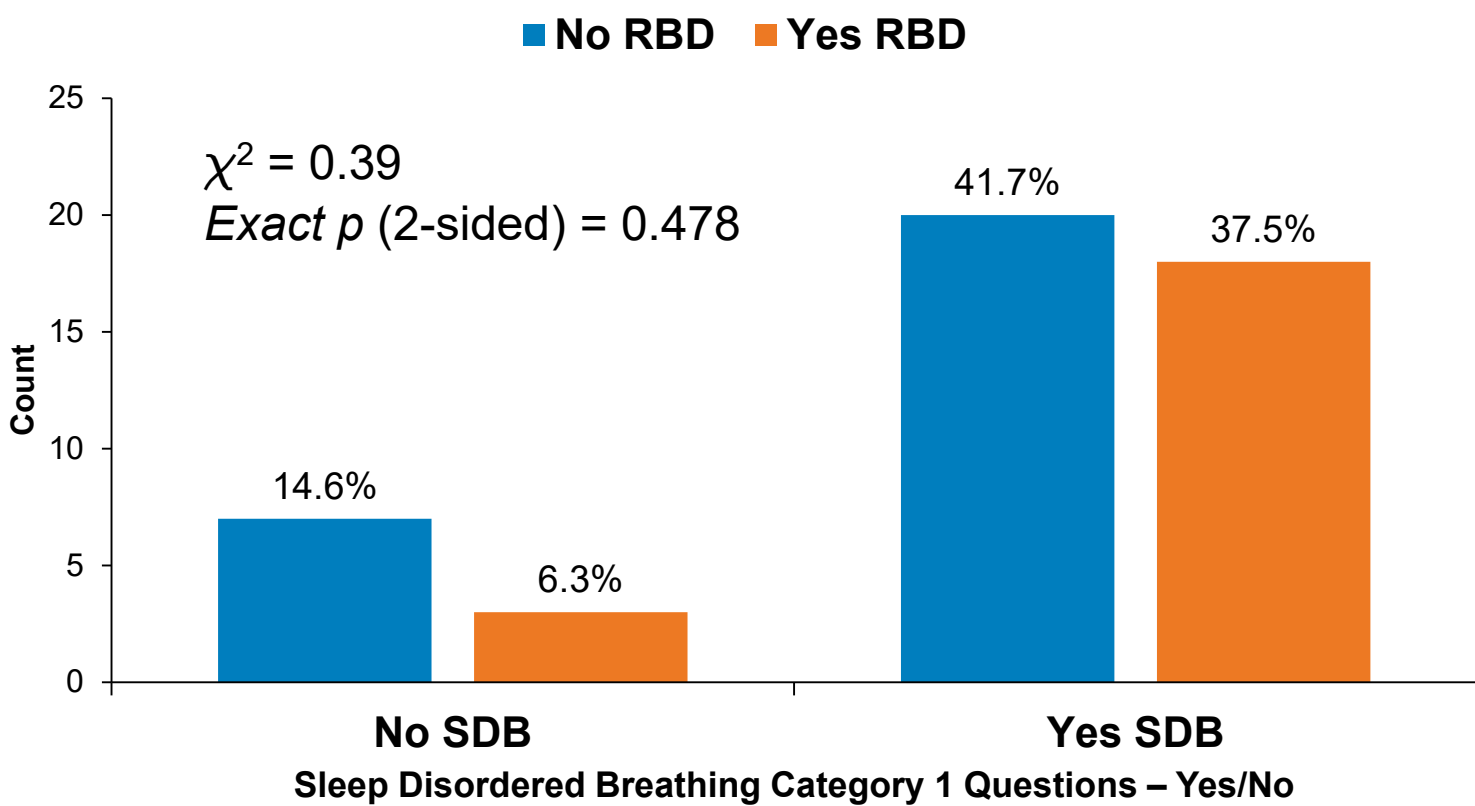
Subset of 3 questions from an 8-item sleep symptom checklist:	Category **	No Median	Yes Median	p-value Mann-Whitney
I snore loudly	1	11	24.5	0.050*
I awaken gasping or choking for breath	1	15	28	0.044*
I’ve been told that I stop breathing in my sleep	1	14.5	31.5	0.026*

**per Berlin questionnaire

Presence/Absence of REM Behavior Disorder among Subjects with or without Sleep Disordered Breathing



Non-Sleepy



Sleepy

