

Non-motor Symptoms Affect Sleep Quality in Early Parkinson's, Study Finds

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People with early-stage Parkinson's disease and non-motor symptoms such as depression, anxiety, urinary tract issues, and hallucinations or delusions are more likely to experience sleep disorders, a recent study has found.

Better cognitive function appears to predict better sleep quality in these patients, according to the researchers who conducted the study, titled "Nonmotor Symptoms Affect Sleep Quality in Early-Stage Parkinson's Disease Patients With or Without Cognitive Dysfunction" and published in *Frontiers in Neurology*.

Parkinson's is characterized by motor symptoms such as tremor, slowness of movement (bradykinesia), and uncontrolled involuntary movement (dyskinesia), as well as by non-motor symptoms including sleep problems and cognitive decline.

In Parkinson's, sleep issues include not only difficulties in falling asleep but also sleep fragmentation, temporary paralysis during the night, obstructive sleep apnea, and daytime sleepiness.

Several non-motor symptoms of the disease, such as depression, anxiety, and excessive urination at night (nocturia), are known to affect sleep quality in Parkinson's patients. But not a lot of research has been done on the potential link between non-motor symptoms and sleep quality among those with early-stage disease, either with or without cognitive impairment.

To address this, a team of researchers in China assessed a group of 389 patients with early-stage Parkinson's disease who had been diagnosed in the previous five years. Patients were an average of 63.9 years old, and 63.5% were men.

After answering a questionnaire about their demographics and clinical information, participants were assessed for sleep problems using the Parkinson's disease sleep scale (PDSS) and for cognitive function with the Montreal Cognitive Assessment (MoCA).

Motor symptoms were examined with the Unified PD Rating Scale (UPDRS) part III and global non-motor symptoms with the Non-Motor Symptoms Questionnaire (NMS-Quest). Depression was also assessed with the Hamilton Depression Scale (HAMD), while the Hamilton Anxiety Rating Scale (HAMA) was administered to examine anxiety.

Results showed that 23.7% of participants reported significant sleep problems, and 39.8% had cognitive impairment. More patients with cognitive impairment experienced sleep disorders than those without (34.8% vs. 16.2%).

Patients with and without sleep disorders were fairly similar in terms of sex, age, disease duration, levodopa-equivalent dose, and motor symptoms. But those with sleep disorders had higher (worse) scores in seven of the nine subdomains of the NMS-Quest, including gastrointestinal symptoms, urinary tract symptoms, apathy/attention/memory, depression/anxiety/anhedonia, cardiovascular symptoms, and miscellaneous.

This same population also had higher scores in all domains of the HAMD scale, which is indicative of depression, and the HAMA scale, indicating anxiety.

Those with sleep disorders also had worse overall scores on MoCA and in the specific domains of naming, attention, delayed memory, and orientation, compared with those without sleep problems.

The researchers then divided the patients into groups according to whether or not they had cognitive impairment to study the differences among those with and without sleep problems in each group.

Of those without cognitive problems, patients with sleep disorders had worse motor symptoms, a more advanced disease, and used a higher dose of levodopa than those without sleep disorders.

After controlling for these differences, the team found that people with sleep problems also had worse scores on the same seven domains of the NMS-Quest as those in the overall population, had worse scores in depression, and more frequently experienced anxiety. These patients without cognitive impairment but with sleep problems also had worse cognitive function.

Findings were largely similar when people with and without sleep problems were compared in the group with cognitive impairment. But cognitive function was not significantly different between the two groups.

Statistical analysis to determine which symptoms were associated with poor sleep quality demonstrated that urinary tract symptoms, hallucinations and delusions, a feeling of hopelessness, and anxiety all significantly increased the odds of having sleep disorders. But a better cognitive performance, particularly in the orientation domain, lowered these odds by about 88%.

In the group of patients with cognitive impairment, hallucinations and delusions increased the odds of sleep disorders by nearly four times, greater scores in the HAMD scale weight loss domain increased them by twofold, and anxiety by 15%.

Among those without cognitive impairment, factors increasing the odds of sleep disorders included greater anxiety scores and higher levodopa doses, while better cognitive performance on the naming and orientation domains were predictive of better sleep quality.

These findings suggest that approximately one-quarter of Parkinson's patients experience sleep problems, and that there is an association between the presence and severity of non-motor symptoms and sleep quality.

"Patients with cognitive dysfunction suffered a higher percentage of sleep disorders," the researchers wrote, suggesting that "better cognition may predict better sleep quality."

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