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Case Report

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Social isolation as a potential contributor to non-24-hour sleep-wake disorder in a sighted patient: a case report

Abstract

Non-24-hour sleep-wake disorder (N24SWD) is uncommon in sighted individuals. We report a case of a 19-year-old sighted man with anxiety, depression, prior suicidal ideation, and profound social isolation who presented with a three-year history of insomnia. Home sleep apnea testing demonstrated an apnea-hypopnea index of 2 events/hour. A two-week sleep diary revealed a progressive daily delay in sleep onset and wake times consistent with a free-running circadian rhythm, supporting the diagnosis of N24SWD. This case highlights social isolation and disruption of social zeitgebers as potential contributors to circadian dysregulation in susceptible sighted individuals. Further research is needed to better understand the relationship between environmental factors and N24SWD in this population.

Keywords: non-24-hour sleep-wake disorder, circadian rhythm sleep-wake disorders, social isolation, free-running circadian rhythm, sighted patient

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Introduction

A 19-year-old man with a history of anxiety, depression, and prior suicidal ideation presented with a three-year history of insomnia. Due to psychiatric symptoms, he completed the last two years of high school through home-schooling and has remained largely housebound since graduation. He lives with his working parents, who have limited ability to supervise his daily routine.

Physical examination revealed a body mass index of 16 kg/m² and an Epworth Sleepiness Scale score of 0/24. Physical examination was otherwise normal. Home sleep test showed an Apnea-Hypopnea index of 2.1 events/hour sleep.

A two-week sleep log (Figure A) demonstrated a progressive daily delay in sleep onset and wake times, consistent with a free-running (non-24-hour) sleep-wake rhythm and supporting the diagnosis of non-24-hour sleep-wake disorder (Figure 1).

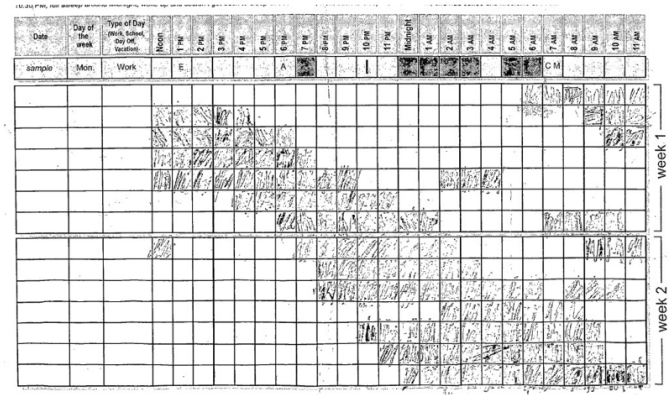

Figure 1 2-week sleep diary showed a daily drift of sleep-wake times consistent with non-24-hour sleep-wake disorder.

Non-24-hour sleep–wake disorder (N24SWD) occurs when the internal circadian rhythm fails to align with environmental cues, causing a continual daily delay in sleep and wake times.[1] The condition is common in individuals without light perception, affecting approximately 50–80% of totally blind patients, but is uncommon in sighted individuals.[2]

Daily light exposure serves as the primary circadian zeitgeber, although other environmental synchronizers may also contribute to circadian entrainment.[3] Previous reports have described N24SWD in both otherwise healthy sighted individuals[4] and in sighted patients with neurodevelopmental and psychiatric comorbidities, including autism spectrum disorder, attention-deficit/hyperactivity disorder, and anxiety disorders.[5] Similar to these reports, our patient exhibited significant psychiatric illness and profound social isolation, raising the possibility that disrupted environmental time cues and reduced exposure to social zeitgebers may contribute to circadian dysregulation in susceptible individuals. This case highlights the need for coordinated psychiatric and sleep medicine evaluation and emphasizes the importance of further research into the mechanisms and risk factors underlying N24SWD in sighted populations.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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