



“It Shapes My Days and My Nights:” The 24/7 Biopsychosocial Experience of Living with Multiple Sclerosis: A Qualitative Study

Ö Ozge Ozkutlu¹, Ö Elmas Akin Altinci², Ö Nezehat Ozgul Unluer³

¹University of Health Sciences Türkiye, Gulhane Faculty of Physiotherapy and Rehabilitation, Ankara, Türkiye

²Ankara Yıldırım Beyazıt University Faculty of Health Sciences, Department of Social Work, Ankara, Türkiye

³University of Health Sciences Türkiye, Gulhane Faculty of Physiotherapy and Rehabilitation, Ankara, Türkiye

Abstract

Objective: This study was designed using a qualitative approach to explore the 24/7 experiences of patients with multiple sclerosis (MS).

Materials and Methods: Using purposeful maximum variation sampling, 17 patients with MS who met the 2017 McDonald criteria were included in the study. Data were collected between May and November 2024 using a semi structured interview form developed based on expert opinions; the interviews were audio-recorded and transcribed. Data analysis was performed using MAXQDA 2024 software, using Braun and Clarke’s 6-phase thematic analysis framework.

Results: Five major themes regarding the 24/7 experiences of patients with MS were identified in our study: 1. diagnosis and acceptance process; 2. biopsychosocial effects of MS; 3. effects on family, marriage, and parenting roles; 4. sleep experiences and the psychosocial dimension of sleep; and 5. ways of coping with difficulties and problems encountered.

Conclusion: This qualitative study demonstrated that sleep changes were fundamentally linked to the biopsychosocial dimensions of the disease. Patients described sleep as both restorative and an emotional escape, noting that sleep disturbances led to fatigue, irritability, and reduced coping capacity. Beyond physiological causes, poor sleep may reflect a broader sense of loss of control and uncertainty associated with living with MS.

Keywords: Multiple sclerosis, sleep, biopsychosocial, multidimensionality, quality of life

Introduction

Multiple sclerosis (MS) is the most prevalent chronic inflammatory demyelinating disease of the central nervous system. It is a common condition that primarily affects young adult women, with both genetic and environmental risk factors playing significant roles in its development (1,2).

Understanding the comprehensive impact of MS on well-being requires moving beyond daytime symptomatology to acknowledge the profound nocturnal dimension of the disease.

Current qualitative literature on patients with MS has extensively focused on various domains, including lived experiences (3), relapse (4), rehabilitation (5), stress and coping strategies (6), and caregiver experiences (7). However, given that MS is inherently a “24/7 condition” and that sleep has a pervasive influence both as a physiological necessity and a psychosocial construct, a more integrated focus is warranted. Because sleep experiences cannot be evaluated independently of patients’ clinical journeys or their social identities within the family, this study aims to provide a comprehensive 24/7 perspective.

Address for Correspondence: Ozge Ozkutlu, MD, University of Health Sciences Türkiye, Gulhane Faculty of Physiotherapy and Rehabilitation, Ankara, Türkiye

E-mail: ozge.coban@sbu.edu.tr **ORCID-ID:** orcid.org/0000-0002-0979-7613

Received: 25.06.2026 **Accepted:** 02.09.2026 **Publication Date:** 14.10.2026

Cite this article as: Ozkutlu O, Akin Altinci E, Ozgul Unluer N. “It shapes my days and my nights:” the 24/7 biopsychosocial experience of living with multiple sclerosis: a qualitative study. J Mult Scler Res. 2026;6:62-70



Materials and Methods

Design

This study utilized a qualitative research method. The study was approved by the Health Sciences Ethics Committee of Ankara Yıldırım Beyazıt University (research code: 2023-401, decision no: 09-401, date: 23.11.2023). Detailed information about the study was provided to each participant, who provided informed consent prior to participation.

Participants

Recruitment was primarily conducted via social media platforms. The inclusion criteria were a diagnosis of MS based on the 2017 McDonald criteria (8), established by a specialist neurologist, and at least 1 year postdiagnosis. Participants with communication difficulties or additional chronic illnesses were excluded. A maximum variation purposive sampling strategy was used (9). The study was completed with 17 participants. Interviews were conducted in the interview room at the Gulhane Faculty of Physical Therapy and Rehabilitation.

Procedures

Semistructured interview questions were developed based on a comprehensive literature review, with input from existing scales (10) and qualitative interview forms (11,12). The original form was revised based on feedback from 2 professors from the departments of social work and mental health and disorders. The interview questions were also reviewed by 2 experts in qualitative research and sleep studies to ensure clarity and relevance. The final form featured open-ended questions, with the topics summarized in Table 1. EAA conducted audio-recorded interviews from May to November 2024 after obtaining participant consent.

Statistical Analysis

Thematic analysis was conducted with the assistance of MAXQDA 2024 software. The data were analyzed according to the 6-phase thematic analysis framework outlined by Braun and Clarke (13). Two researchers (EAA and OO) independently coded 4 randomly selected transcripts to foster diverse interpretations. They then engaged in reflexive discussions to negotiate and agree on the initial themes. EAA subsequently coded the remaining transcripts, while OO reviewed the process to challenge assumptions and confirm that the final themes were grounded in the data. EAA had no prior clinical contact with the participants. Reflexive journals were maintained by both researchers (EAA and OO) throughout the data collection and analysis phases. Peer debriefing was conducted through regular discussions with experts in social work and physiotherapy, who reviewed the coding process and emerging themes. The final themes and subthemes were reviewed and agreed upon by both researchers. Illustrative examples of interview statements and their corresponding classifications are presented in Table 2. Although the interview guide covered a range of topics, such

as consulting a sleep expert and receiving guidance on sleep from health care professionals, these topics did not yield data that reached thematic saturation or emerged as salient patterns across the dataset. Therefore, they are not reflected in the final thematic framework, consistent with the principles of reflexive thematic analysis. The sample size was determined based on the richness and depth of the data, ensuring adequate information power to address the research aim (14).

Results

Interviews ranged in length from 22 to 46 minutes. Among the 3 male and 14 female participants, 11 were high school graduates and 11 were married. The participant who received the earliest diagnosis was diagnosed in 2003. Demographic data for each participant are summarized in Table 3. The coding and analysis process resulted in a final set of 5 themes and 14 codes (Figure 1).

Theme 1. Diagnosis and Acceptance

Recognizing MS and Its Diagnosis

The diagnosis process was described as a period of intense uncertainty, fear, and emotional turmoil following the onset of physical symptoms.

"At first, I couldn't feel my arm or leg. I felt weak and tired. I had no desire to do anything. I even had trouble moving. As the "dragging" sensations began and my vision deteriorated, I sought medical attention at a hospital, where I was eventually diagnosed" (Anka).

"I didn't know I was sick. I went to Moscow on official business, and my leg was locked up on the escalator. I couldn't move until I reached the end of the escalator. There were just a few steps left to reach the top, but when I took a step, I was in a lot of pain. My head hurt a lot, my brain hurt a lot, I couldn't stand the heat, I was very nervous, my reactions were harsh, and I didn't recognize myself anymore. I didn't understand; I was depressed, and nothing made me happy" (Balpetegi).

"It shapes my days and my nights" (Anka).

Accepting MS

Findings from participants indicated that acceptance following diagnosis was a long, emotionally turbulent process characterized by individual differences.

"I didn't accept it for the first five years. When did I accept it? When I came to my doctor, when I came to physical therapy, I was in a very bad way, I was throwing the needle. The drugs constantly had side effects on me. When I first went to physical therapy, after seeing the children there, I gave up on everything. I said, "I was wrong". I said I would never utter the word "sick" again. You have to accept it" (Mavis).

"I went to physical therapy years ago, and the physical therapist said something to me that I'll never forget: "Everyone in this world has something in their destiny, and this is what fell into yours". Since

then, I've accepted it. It lives with me. I see it as a guest. As long as we're not bad, we can get along" (Balpetegi).

Theme 2. Biopsychosocial Effects of MS

Physiological Effects

Findings from participants indicated that the physical effects of MS permeated every aspect of life, with the physical limitations of the disease directly affecting both participants' independence and quality of life.

"I have balance problems. When I stir soup during the day, it splashes everywhere. Sometimes, just as I'm about to swallow food, I don't

know how to explain it; it's like a power outage. You know, when everything suddenly shuts off and the generator takes a moment to start. Whatever I'm holding can slip from my hand in an instant. Once, while driving, I meant to hit the brakes but pressed the gas instead. Thank God nothing happened" (Beyaz).

"I feel weak. It's this weakness and constant sleepiness... I don't normally fall asleep easily, but I constantly want to lie down. I can't lift my arms or legs. It's a strange kind of weakness without any apparent reason" (Tosbaga).

"I have difficulty walking. I cannot go far on my own" (Nb).

Table 1. Interview topics and subtopics on MS and sleep experiences

Main topic	Subtopic	Question example
Experience and meaning of MS	Diagnosis and disease progression	Can you share your experience with the MS diagnosis process and treatment options?
	Relationship between MS and sleep	Since your MS diagnosis, how has your sleep changed? Have these changes been more noticeable during specific periods (e.g., relapses or the early stages of the disease)?
Meaning of sleep	Definition of sleep	How do you personally understand sleep? What does good or poor sleep mean to you?
	Importance of sleep	Do you think good or poor sleep is important for your health and well-being?
	General sleep description	How would you describe your sleep in general (e.g., duration, depth, interruptions, and routine)?
	Influencing factors	Do you believe certain situations in your life affect your sleep (e.g., biological, psychological, social, or spiritual factors; medications; or secondary diagnoses)?
Sleep experience	Sleep process	Can you describe a typical night for you, from the moment you go to bed until you wake up? Consider sleep hygiene, partner-related factors, excessive sleep, insomnia, and other relevant experiences.
	Sleep evaluation	How would you describe the quality of your sleep?
	Concerns about sleep	What worries you the most about your sleep?
Sleep problem management	Coping strategies	Do you think you have sleep problems? If so, what strategies or treatments have you considered?
	Thoughts and feelings after poor sleep	When you do not sleep well one night, what do you usually think and feel? What do you think is the reason for your poor sleep?
	Actions after poor sleep	What do you do when you cannot sleep?
	Coping the next day	How does poor sleep affect your ability to cope the next day (e.g., memory, attention, and other daily activities)?
	Perceived control over sleep	Do you feel that you have control over your sleep?
Health care professional intervention	Guidance from health professionals on sleep	Have health care professionals ever discussed sleep with you as part of your treatment for MS? What have they told you?
Hope and future plans	Desired changes	If you had a magic wand to improve your sleep, what would you do?
	Future expectations for the sleep routine	Would you like to change your sleep routine? What is your outlook on your sleep in the future?
	Consult a sleep expert	If you could work with the world's leading sleep expert, what would you want to discuss or change about your sleep habits?

MS: Multiple sclerosis

Table 2. Statements and relevant initial classifications

Selected statement	Initial classification
<i>"My left foot would feel like it was stepping into an empty space. When playing soccer with friends, I would experience something like a cramp in my leg. I thought it was probably just fatigue. When it continued, I had an MRI. That's how I was diagnosed" (Ulucan)</i>	Recognizing MS and the diagnosis process
<i>"Let's go out, eat, go to the movies... Even going out is very difficult for me. And the next few days are difficult too. For example, there's a picnic activity. I force myself to find the strength that day, force myself to participate, force myself to smile so as not to disrupt the atmosphere and to fit in, and then I'm devastated for the next 3 days after coming back. I ruined all my friendships because of this" (Anka)</i>	Changes experienced in social relationships
<i>"If I can't sleep at night, I get irritable. I wait for the evening to come so I can sleep, or sometimes I go to the office and sleep if I can't sleep at home. If necessary, I will cancel my appointments. If necessary, I cancel my daily activities and sleep. I can't stay awake. I have MS, and if I don't sleep, I have attacks" (Gizem)</i>	Changes MS creates in sleep patterns

MRI: Magnetic resonance imaging, MS: Multiple sclerosis

Table 3. Demographic characteristics of participants

Code name	Age, y	Sex	Educational level	Occupation	Employment status	Parental status (child's age, y/sex)	Year of diagnosis
Anka	31	Female	High school	Not working	Married	10/girl; 8/boy	2021
Balpetegi	50	Female	Bachelor's degree	Civil servant/not working	Single	None	2014
Geisha	26	Male	High school	Student	Single	None	2020
Gizem	34	Female	Bachelor's degree	Lawyer	Married	3 /boy	2017
Nb	38	Female	Elementary school	Housewife	Married	17/girl12/boy; 7/ boy	2024
Taco	30	Female	Postgraduate	Ceramics teacher	Single	None	2022
Tosbaga	24	Female	High school	Preschool assistant teacher	Single	None	2022
Ulucan	39	Male	High school	Cook/retired due to disability	Married	10 /girl	2014
Sirinlik	39	Female	Bachelor's degree	Sales representative	Married	5/boy; 10/girl	2014
Merdiven	37	Male	High school	Business owner	Married	11 /girl	2012
Rabia	28	Female	High school	Teacher	Single	None	2024
Yuksel	54	Female	Associate degree	Housewife	Married	34/boy32/girl; 20/ girl	2003
Nry	21	Female	High school	Student	Single	None	2022
Ayse	43	Female	High school	Worker	Married	17/girl; 20/girl	2009
Beyaz	45	Female	High school	Makeup artist/not working	Married	13/boy12/boy; 8/ girl	2006
Mavis	37	Female	High school	Accountant/retired due to disability	Married	16/boy; 8/boy	2011
Deniz	55	Female	High school	Civil servant/retired	Married	32/girl	2017

Psychological Effects

Our findings showed that the disease triggered feelings of hopelessness, anxiety, uncertainty, and loss of control, resulting in significant changes in self-perception and life satisfaction.

"Hopelessness, helplessness... There's nothing I can do. Not knowing anything is worse. I tell myself, 'I'll just adjust myself to staying like

this". They say we don't know. Is there any chance of improvement? We don't know... Complete uncertainty wears a person down even more. They say even the worst thing is better than uncertainty. That's exactly where I am right now" (Anka).

"You get obsessed. For example, you get into an emotional breakdown, you have an argument with someone. You feel guilty,

wondering whether you're the one to blame. These are patterns we pick up in childhood. Later comes excessive guilt, feeling like you're to blame... You immediately think, "Could it be MS?" I read that MS can cause such situations. We go through these ups and downs" (Yuksel).

Social Effects

Research findings showed that MS profoundly affects individuals' social lives, relationships, and social roles.

"Having MS is unbearable for both my close friends and strangers. I'm constantly tired. I'm even tired of saying it. They say I'm making excuses, but going out is torture for me. I go to a party, everyone has fun, and the next day I can't get out of bed for 2 days. The next few days are ruined. That's why I don't go anymore" (Anka).

"People react differently because they don't know anything about MS. They say, "Oh, poor thing". They shouldn't get hung up on that part. I stop contacting toxic people. I don't see people who stress me out. I also stop contacting people who constantly tell me their problems" (Sirinlik).

Theme 3. Reflections on Family, Marriage, and Parenting Roles

Reflections on Family Relations

Some participants stated that the intensive research and support efforts of family members to understand the disease empowered them, whereas others noted that differences in attention changed family dynamics.

"My family was scared too. Because it was an unknown disease. My uncle is a doctor. My dad shared it with him. I have a cousin who is an oncologist. When we asked them, they said there was nothing to be afraid of. Because there is a treatment. We learned by researching. My mom was researching tirelessly, day and night. Researching affects you a little" (Taco).

"We are three siblings. I am the youngest; I have an older sister and brother. My brother was the most valuable person in the house, the one who did everything, achieved everything, and was the hero of everything. With the illness, all the attention was on me" (Geisha).

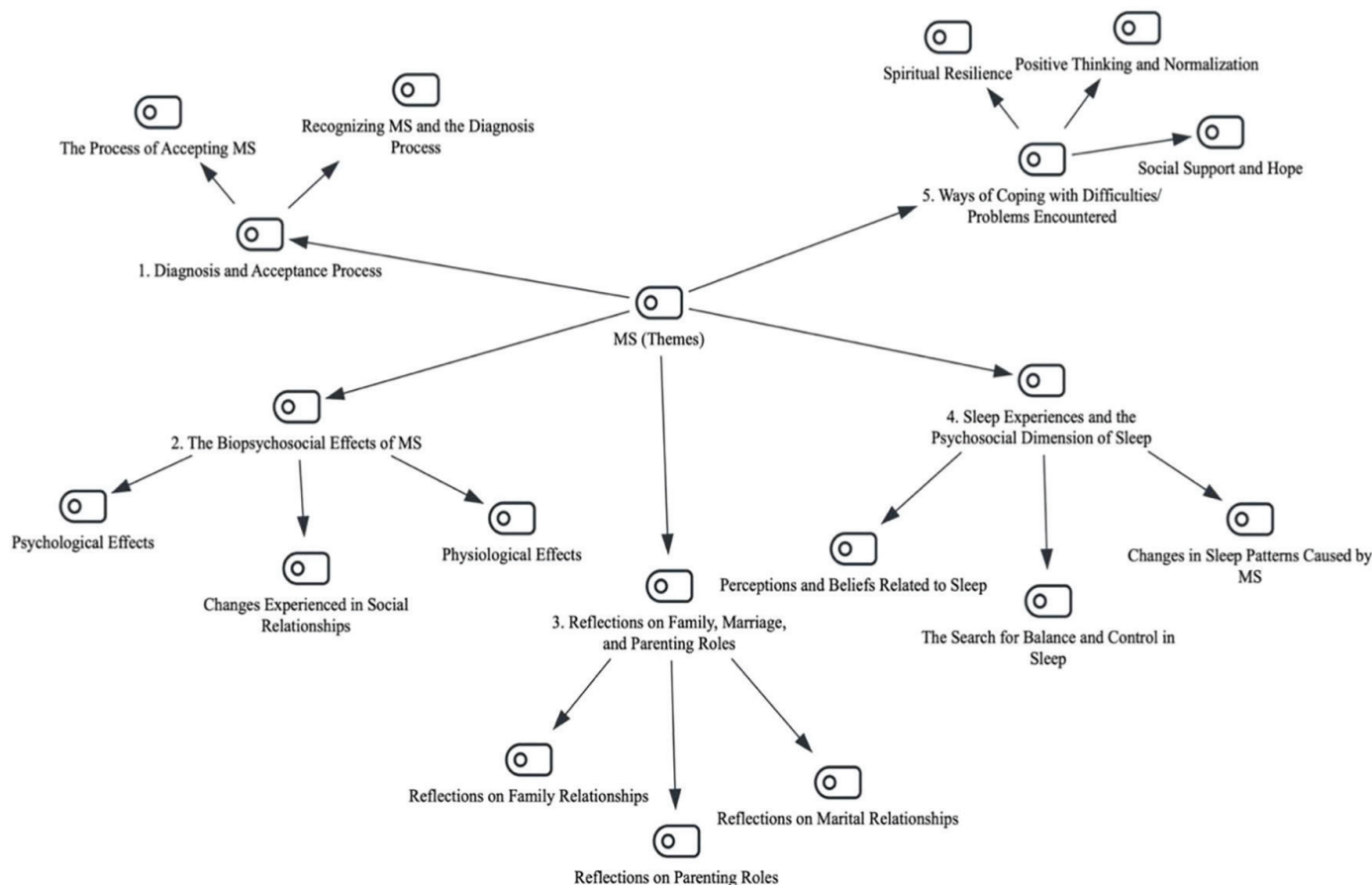


Figure 1. Thematic map of the coding structure. The map presents 5 main themes (central nodes), each with corresponding subthemes (surrounding branches), illustrating the hierarchical organization of the qualitative data analysis

MS: Multiple sclerosis

Reflections on Marital Relationships

Participants indicated that MS had mixed effects on marital relationships.

"I was very affected at first. I got angry quickly. I yelled at my wife. I yelled at my daughter. It was difficult... I directed my anger at them. I couldn't yell outside, so I came home and yelled at my wife. I was very sleepy during that period. I don't know if it was because of the disease" (Ulucan).

"Life is good if I live it according to my wife, but if I approach life a little bit from my perspective and live the way I want to live, that's when our problems start" (Anka).

Reflections on Parenting Roles

The findings obtained within the scope of the research showed that MS creates difficulties in parenting roles, both emotionally and practically.

"All I think about is my children. Will I be able to look after them? Will I be able to care for them? Will I be able to spend enough time with them?" (Anka).

"Sometimes I just want to sit down. I want to spend time at home. I'm sleepy, yes, I know I need to sleep, but then I can't spend time with the kids. I want to watch something or have a coffee by myself and relax, but we just can't do everything at once" (Ayse).

Theme 4. Sleep Experiences and the Psychosocial Dimension of Sleep

Perceptions and Beliefs Related to Sleep

Participants' statements indicated that sleep was viewed not only as physical rest but also as a means of mental, emotional, and physical renewal. Sleep aids in coping with illness, reduces stress, and alleviates the burdens of daily life. Participants described insomnia as a condition that increases both physical fatigue and emotional vulnerability.

"I wake up, and when I wake up, it's very difficult for me to fall asleep. Most of the time, I get up thinking my sleep is over, and the next day, I feel terrible because I couldn't sleep" (Anka).

"When I wake up in the morning, I feel like a formatted computer" (Merdiven).

Changes in Sleep Patterns Caused by MS

Participants stated that MS was a factor that directly affected sleep patterns. Problems such as difficulty falling asleep, frequent awakenings, and inability to sleep despite extreme fatigue were described in terms of both their physiological and psychological dimensions. Some participants resorted to medication or alcohol to cope with insomnia.

"I definitely can't sleep. I mean, I can't do it on my own, I can't manage it. I'm very tired, but I still can't sleep. I think this is related to MS" (Beyaz).

"I used to go to bed around 10 at night. But in the last year, it has greatly increased my sleep onset latency and my desire to sleep. Even if I don't sleep, I keep lying down trying to sleep, but I can't fall asleep. It has created a major problem with falling asleep" (Anka).

"It takes me a minimum of 20 minutes and a maximum of 60 minutes to fall asleep" (Rabia).

Search for Balance and Control in Sleep

Our results showed that the loss of control experienced due to the unpredictable nature of MS led participants to seek order and control in their daily lives. Participants attempted to establish balance through daily routines, sleep habits, and spiritual practices such as prayer to reduce the uncertainty associated with the disease.

"If I have pain, it takes me an hour or more to fall asleep. When I can't fall asleep, I think about nice things. I pray. I dream a lot. I think about my dreams, what I saw yesterday. That's how I fall asleep" (Yüksel).

"Sleep is the most crucial part for me. If I don't sleep well, the next day is miserable. Going to bed too late or being constantly woken up while sleeping affects me" (Sirinlik).

"Actually, it would be better if I went to sleep at 23:00. I'd like to fall asleep more easily at night, sort of like, 'Let me stop thinking and rest; I'll think about it in the morning' (Nry).

Theme 5. Ways of Coping with Difficulties/Problems Encountered

Spiritual Resilience

Our results showed that faith and the concept of destiny played important roles in coping with physical and psychological burdens.

"My faith has a huge impact. After all, I know it comes from God and there's nothing I can do about it. I've always been grateful" (Ayse).

Positive Thinking and Normalization

Participants' statements indicated that positive thinking and normalization were effective strategies for coping with challenges.

"Actually, I tried to stay positive about everything... I always tried to think positively to myself. I still think positively. I usually forget that I'm sick" (Tosbaga).

"I went to physical therapy years ago, and the physical therapist said something to me that I'll never forget: 'Everyone in this world has something in their destiny, and this is what fell into yours.' Since then, I've accepted it. It lives with me. I see it as a guest. As long as we're not bad, we can get along" (Balpetegi).

Social Support and Hope

Our results showed that support from family members and close friends was an important protective factor in coping with the difficulties encountered.

"Everything in life is for us. I went through difficult times. The love of the people around me is probably what kept me going. My husband, my daughter, everyone was so kind to me that they were a great support in my fight against my illness" (Deniz).

"Life goes on no matter what. It goes on through pain. Nothing lasts forever. Whatever happens in life, MS patients in particular should take care of themselves. Stay positive and don't lose your energy. Don't give up on life. Sleep well" (Deniz).

Discussion

The themes and subthemes identified through data analysis included the diagnosis and acceptance process, biopsychosocial effects of MS, reflections on family, marriage, and parenting roles, sleep experiences and the psychosocial dimension of sleep, and ways of coping with difficulties/problems encountered.

Consistent with previous research, the present study confirmed that the diagnosis and acceptance process involves complex emotional trajectories. A meta-synthesis of qualitative studies focusing on the diagnosis of MS highlighted that individuals experienced intense emotional reactions and challenges that hindered their ability to comprehend and adjust to the diagnosis (15). The second theme identified in our study was the biopsychosocial impact of MS. Similar findings have been reported in a qualitative study of patients with MS aged 25-56 years, which also highlighted the relevance of the biopsychosocial model (16). Another study of patients with MS demonstrated that quality of life in MS is associated with multiple biopsychosocial variables (17).

The third theme identified in our study was reflections on family, marriage, and parenting roles. For new and experienced parents without disabilities, obtaining sufficient sleep has been shown to play a crucial role in mental health and, in turn, life satisfaction (18). For patients with MS, however, physical and psychological limitations can make childcare more challenging and less manageable, thereby increasing their vulnerability to sleep problems.

The fourth theme identified in our study was sleep experiences and the psychosocial dimension of sleep. Feeling fully refreshed after sleep might be particularly important because of the characteristic fatigue associated with MS. Insomnia symptoms, combined with the sense of loss of control experienced during the disease course, further illustrate the link between these themes. Previous research has shown that treatments used by people living with MS to initiate or maintain sleep, as well as their effects on sleep quality and daytime sleepiness, are important considerations (19). Approximately 1 in 2 adults with MS report poor sleep quality and daytime sleepiness, and 1 in 5 are diagnosed with an insomnia disorder (20). Similarly, our findings revealed difficulties falling back asleep after waking, consistent with insomnia symptoms that participants also associated with MS. A recent meta-analysis synthesized findings from 13

quantitative studies that used the Pittsburgh Sleep Quality Index and concluded that the limited available evidence suggests that subjective sleep quality is adversely affected by MS (21). While this meta-analysis provides valuable quantitative evidence regarding sleep in MS populations, it does not offer in-depth insight into the lived experience of sleep disruption or the contextual factors that shape sleep perceptions and behaviors. Our study extends this body of knowledge by offering a nuanced qualitative perspective that captures the multidimensional nature of sleep experiences among patients with MS. Specifically, our findings are organized around 3 distinct subthemes: (1) perceptions and beliefs related to sleep, (2) changes in sleep patterns caused by MS, and (3) the search for balance and control in sleep. These subthemes collectively provide a framework for understanding how sleep is experienced, interpreted, and managed within the biopsychosocial context of MS, addressing aspects of the lived experience that quantitative approaches alone may not fully capture.

Our results indicate that patients with MS often seek to regain a sense of control in their lives by establishing daily routines, sleep practices, and spiritual activities. These strategies may help them cope with the unpredictable nature of MS and may serve as psychological coping mechanisms. We highlight the importance of sleep hygiene education (22) as a potentially beneficial approach to enhance patients' sense of control and promote public health. However, specific sleep recommendations for patients with MS appear to be limited, with no MS-specific guidance beyond that provided by established sleep organizations.

Previous research has shown that meaning in life predicts quality of life across all 4 domains of biopsychosocial measures (17), which aligns with our findings regarding spiritual resilience. Social support and positive thinking also emerged as important to coping strategies. Existing literature demonstrates that positive thinking training has been shown to improve quality of life (23) and encourage physical activity among individuals with MS (24). Previous research has also established that higher levels of social support are associated with better mood and quality of life in individuals with MS (25).

The sex distribution in this sample (14 females and 3 males) is broadly consistent with the established epidemiology of MS. As noted by Coyle (26), multiple aspects of MS are influenced by sex-based differences, and this has become an important area of research. In line with this, our findings similarly suggest that sex-based differences may have influenced participants' experiences, particularly in the context of parental roles.

Study Limitations

Several limitations should be acknowledged. First, the absence of a psychological expert on the research team may have influenced the interpretation of the findings. Second, recruitment

through social media may have introduced self-selection bias. Third, the single-center, single-country sample limits the cultural transferability of the findings. Fourth, the single-time-point design precludes examination of longitudinal changes in participants' experiences. Additionally, medication use was not systematically assessed, although it may have influenced participants' sleep experiences. Finally, sociodemographic data were collected but not analyzed. Future research should explore interventions integrating spiritual resilience, patient education, and biopsychosocial support to enhance patients' 24/7 experiences.

Conclusion

This study demonstrated that MS is a 24/7 experience, extending far beyond clinical consultations into every aspect of patients' daily lives. A key finding was the pivotal role of sleep within this trajectory, highlighting that the disease continues to affect individuals' well-being even during non-waking hours. Consequently, it is imperative to manage MS within a comprehensive temporal context. The study's primary strength lies in its qualitative analysis of the individualized 24/7 experiences of 17 patients, including their sleep experiences, supported by a multidisciplinary research team comprising a physical therapist, sleep specialist, and social services expert.

Ethics

Ethics Committee Approval: The study was approved by the Health Sciences Ethics Committee of Ankara Yıldırım Beyazıt University (research code: 2023-401, decision no: 09-401, date: 23.11.2023).

Informed Consent: Detailed information about the study was provided to each participant, who provided informed consent prior to participation. To protect participants' identities, all personal identifiers were removed, and pseudonyms (codenames) were assigned to each participant for the presentation of direct quotes.

Acknowledgments

We would like to thank all participants who took the time to share their views and contribute to the study.

Footnotes

Authorship Contributions

Concept: O.O., E.A.A., N.O.U., Design: O.O., E.A.A., N.O.U., Data Collection or Processing: O.O., E.A.A., N.O.U., Analysis or Interpretation: O.O., E.A.A., N.O.U., Literature Search: O.O., E.A.A., N.O.U., Writing: O.O., E.A.A., N.O.U.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

Data Availability: The qualitative data (interview transcripts) generated and analyzed during the current study are not publicly available due to participant privacy and the sensitive nature of the information. However, the data are available from the corresponding author upon reasonable request.

References

1. Reich DS, Lucchinetti CF, Calabresi PA. Multiple Sclerosis. *N Engl J Med*. 2018;378:169-180.
2. Thompson AJ, Baranzini SE, Geurts J, Hemmer B, Ciccarelli O. Multiple sclerosis. *Lancet*. 2018;391:1622-1636.
3. Persson S, Andersson AC, Gäre BA, Lindenfolk B, Lind J. Lived experience of persons with multiple sclerosis: a qualitative interview study. *Brain Behav*. 2023;13:e3104.
4. Matza LS, Kim K, Phillips G, Zorn K, Chan KS, Smith KC, Mowry EM. Multiple sclerosis relapse: qualitative findings from clinician and patient interviews. *Mult Scler Relat Disord*. 2019;27:139-146.
5. Ghaidar D, Sippel A, Riemann-Lorenz K, Kofahl C, Morrison R, Kleiter I, Schmidt S, Dettmers C, Schulz H, Heesen C. Experiences of persons with multiple sclerosis with rehabilitation-a qualitative interview study. *BMC Health Serv Res*. 2022;22:770.
6. Lex H, Price P, Clark L. Qualitative study identifies life shifts and stress coping strategies in people with multiple sclerosis. *Sci Rep*. 2022;12:6536.
7. Benini S, Pellegrini E, Descovich C, Lugaesi A. Burden and resources in caregivers of people with multiple sclerosis: a qualitative study. *PLoS One*. 2023;18:e0265297.
8. Thompson AJ, Banwell BL, Barkhof F, Carroll WM, Coetzee T, Comi G, Correale J, Fazekas F, Filippi M, Freedman MS, Fujihara K, Galetta SL, Hartung HP, Kappos L, Lublin FD, Marrie RA, Miller AE, Miller DH, Montalban X, Mowry EM, Sorensen PS, Tintoré M, Traboulsee AL, Trojano M, Uitdehaag BMJ, Vukusic S, Waubant E, Weinshenker BG, Reingold SC, Cohen JA. Diagnosis of multiple sclerosis: 2017 revisions of the McDonald criteria. *Lancet Neurol*. 2018;17:162-173.
9. Fraenkel JR, Wallen NE, Hyun HH. How to design and evaluate research in education. New York: McGraw-Hill; 1990.
10. Buysse DJ, Reynolds CF 3rd, Monk TH, Hoch CC, Yeager AL, Kupfer DJ. Quantification of subjective sleep quality in healthy elderly men and women using the Pittsburgh Sleep Quality Index (PSQI). *Sleep*. 1991;14:331-338. Erratum in: *Sleep*. 1992;15:83.
11. Climent-Sanz C, Gea-Sánchez M, Fernández-Lago H, Mateos-García JT, Rubí-Carnacea F, Briones-Vozmediano E. Sleeping is a nightmare: a qualitative study on the experience and management of poor sleep quality in women with fibromyalgia. *J Adv Nurs*. 2021;77:4549-4562.
12. Gotts ZM, Newton JL, Ellis JG, Deary V. The experience of sleep in chronic fatigue syndrome: a qualitative interview study with patients. *Br J Health Psychol*. 2016;21:71-92.
13. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3:77-101.
14. Malterud K, Siersma VD, Guassora AD. Sample size in qualitative interview studies: guided by information power. *Qual Health Res*. 2016;26:1753-1760.
15. Topcu G, Mhizha-Murira JR, Griffiths H, Bale C, Drummond A, Fitzsimmons D, Potter KJ, Evangelou N, das Nair R. Experiences of receiving a diagnosis of multiple sclerosis: a meta-synthesis of qualitative studies. *Disabil Rehabil*. 2023;45:772-783.
16. Kassie SA, Alia J, Hyland L. Biopsychosocial implications of living with multiple sclerosis: a qualitative study using interpretative phenomenological analysis. *BMJ Open*. 2021;11:e049041.
17. Batista AR, Silva S, Lencastre L, Guerra MP. Biopsychosocial correlates of quality of life in multiple sclerosis patients. *Int J Environ Res Public Health*. 2022;19:14431.

18. Divine A, Blanchard C, Benoit C, Downs DS, Rhodes RE. The influence of sleep and movement on mental health and life satisfaction during the transition to parenthood. *Sleep Health*. 2022;8:475-483.
19. Jemere T, van der Mei I, Honan C, Taylor BV, Campbell JA, Breslin M, Laslett LL. Treatments used by people living with MS to get to sleep or stay asleep, and impacts on sleep quality and daytime sleepiness. *Mult Scler Relat Disord*. 2025;101:106565.
20. Zeng X, Dorstyn DS, Edwards G, Kneebone I. The prevalence of insomnia in multiple sclerosis: a meta-analysis. *Sleep Med Rev*. 2023;72:101842.
21. Moradi A, Ebrahimian A, Sadigh-Eteghad S, Talebi M, Naseri A. Sleep quality in multiple sclerosis: a systematic review and meta-analysis based on Pittsburgh Sleep Quality Index. *Mult Scler Relat Disord*. 2025;93:106219.
22. Irish LA, Kline CE, Gunn HE, Buysse DJ, Hall MH. The role of sleep hygiene in promoting public health: a review of empirical evidence. *Sleep Med Rev*. 2015;22:23-36.
23. Nikmanesh Z, Mirkazehi LJ. The effectiveness of positive thinking training in the quality of life and emotion regulation among patients with multiple sclerosis. *J Res Health*. 2020;10:207-216.
24. Hall-McMaster SM, Treharne GJ, Smith CM. 'The positive feel': unpacking the role of positive thinking in people with multiple sclerosis's thinking aloud about staying physically active. *J Health Psychol*. 2016;21:3026-3036.
25. Ratajska A, Glanz BI, Chitnis T, Weiner HL, Healy BC. Social support in multiple sclerosis: associations with quality of life, depression, and anxiety. *J Psychosom Res*. 2020;138:110252.
26. Coyle PK. What can we learn from sex differences in MS? *J Pers Med*. 2021;11:1006.