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# Daytime sleepiness in depression—underestimated in psychiatric inpatients

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## Abstract

**Background:** Sleep disorders are among the most common symptoms of depression. Both the ICD-10/11 and DSM-5 list sleep disorders of all types as diagnostic criteria for depression, but these are not defined in detail.

**Objective:** This study focused on the prevalence of daytime sleepiness and associated sleep disorders in patients diagnosed with a severe depressive episode.

**Materials and methods:** In total, 192 inpatients with a moderate/severe depressive episode from an open acute psychiatric ward were included. Sleep history immediately after admission and sleep-related questionnaires, such as the Epworth Sleepiness Scale (ESS), Fatigue Severity Scale (FSS), and Regensburg Insomnia Scale (RIS), were collected. Polysomnographic assessment was performed in 82 patients with suspected sleep disorders. Patient groups (e.g., with and without sleepiness or apnea) were compared.

**Results:** The prevalence of daytime sleepiness (ESS > 10) was 25.3%. Fatigue and insomnia were reported in 66.7 and 75.7% of patients, respectively. Polysomnography revealed a prevalence of sleep apnea of 18.2%, and sleep apnea was newly diagnosed in 80% of these patients. Daytime sleepiness was more common in patients with undiagnosed sleep apnea. Patients with daytime sleepiness had more fatigue but did not have more severe depression.

**Conclusion:** The present results highlight the importance of assessing sleep history in psychiatric patients, especially those with depression. The ESS may be a useful tool to specifically assess daytime sleepiness as opposed to depression-related fatigue. A systematic assessment of sleepiness and specific sleep disorders, in particular sleep apnea, might contribute to improved treatment of inpatients with depression.

## Keywords

Fatigue · Diagnostics · Sleep apnea · Epworth Sleepiness Scale · Prevalence

## Supplementary Information

The online version of this article (<https://doi.org/10.1007/s11818-024-00445-8>) contains supplementary material, which is available to authorized users.

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## Introduction

Sleep disturbances are frequent symptoms reported by patients with depressive disorders. Sleep disorders, such as insomnia, typically co-occur with depressive episodes and have been reported by more than 85% of patients [16]. As an associated symptom of depressive episodes according to the International Classification of Disease (ICD)-10, ICD-11,

and the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5, sleep disorders should always be assessed in patients with depression [11]. Notably, sleep disorders are also seen as a transdiagnostic process in mental disorders such as depression [12]. In this context, a bidirectional relationship between insomnia and depression has been established [14]. Persistent insomnia has been shown to be a risk factor for the development and

	<b>Daytime sleepiness</b>	<b>Fatigue</b>
Definition	Daytime sleepiness is the inability to stay awake and alert during the day with unintentional occurrence of sleep almost daily for at least 3 months. Excessive daytime sleepiness is defined by subjective complaints or interferences with function [1]	Fatigue is “a subjective lack of physical and/or mental energy that is perceived by the individual or the caregiver to interfere with usual and desired activities” [26]
Symptoms	Reduced alertness or wakefulness	Feeling of tiredness, exhaustion, weariness, or persistent lack of energy
	Increased likelihood of falling asleep or dozing off unintentionally (especially in monotonous, sedentary situations)	Increased mental or physical fatigue
	Increased sleep drive during breaks or when resting (e.g., lying down for a nap)	Not necessarily associated with increased sleep pressure during breaks or when resting (e.g., lying down to relax)
Semantics	Tiredness is often used as a synonym (e.g., by patients with hypersomnia)	Tiredness is often used as a synonym (e.g., by patients with insomnia)
Common questionnaires	E.g., Epworth Sleepiness Scale (ESS)	E.g., Fatigue Severity Scale (FSS)
Objective measurements	MSLT, MWT, EEG, pupillography, psychomotor vigilance task; sustained attention and vigilance tasks, driving simulators	No validated measurement methods
Effective countermeasures	Sleep or short naps, but not rest per se	Relief and improvement with rest
	Stimulants temporarily effective	Limited efficacy of stimulants
	Alertness management	–
<i>MSLT</i> Multiple Sleep Latency Test, <i>MWT</i> Maintenance of Wakefulness Test, <i>EEG</i> electroencephalography		

recurrence of depression [27]. In addition to insomnia, a variety of sleep disorders are often seen in patients with depression, including sleep-related breathing disorders (SRBDs) [33] and restless legs syndrome (RLS) [21, 35]. Sleep apnea can disrupt sleep structure and impair the quality of sleep, often contributing to daytime sleepiness. Some of the symptoms of sleep apnea and depression are similar, such as fatigue, difficulty concentrating, irritability, psychomotor retardation, and weight gain; these similarities can delay diagnosis [13]. Treating sleep apnea with continuous positive airway pressure (CPAP) can reduce depressive symptoms [29], tiredness, and fatigue, and improve energy levels [9]. When patients, and many clinicians, discuss impairments in daily living due to sleep disturbances (i.e., drowsiness, exhaustion, fatigue), they often refer to this as “tiredness” and very rarely as “daytime sleepiness.” Fatigue is commonly defined as a subjective lack of physical and/or mental energy, while daytime sleepiness is characterized by an inability to stay awake and alert during the day (Table 1; [1]). This increased tendency to fall asleep or doze off during daily activities is often caused by an underlying sleep disorder, poor sleep, or sleep deprivation due to self-imposed lifestyle or occupational factors. Thus, patients

with insomnia mostly experience daytime tiredness or fatigue but not sleepiness. They are often in a state of hyperarousal, which leads to difficulty napping during the day, similar to the difficulty sleeping at night. In particular, the subjectivity of tiredness-related symptoms and their similarity to depressive symptoms, such as a lack of motivation or energy, make it difficult to distinguish between sleepiness and fatigue in people with depression. As a result, sleep disorders associated with excessive daytime sleepiness (EDS; Table 1) or hypersomnolence are often underdiagnosed in patients with depression [5]. Furthermore, EDS may require a distinct treatment approach, such as implementing effective measures to counteract sleepiness, including napping or stimulants. EDS may also interfere with the treatment of depression, as encouraging daytime napping can be counterproductive to dealing with depressive symptoms. In addition, antidepressant medication may have positive or negative effects on sleep and alertness [32]. In general, studies on the prevalence of EDS in psychiatric patients are scarce and often focus on highly selective patient samples. The aim of this retrospective study was to estimate the prevalence and severity of daytime sleepiness as measured using the Epworth Sleepiness Scale (ESS) in psy-

chiatric inpatients with major depression. Additionally, we evaluated the presence of symptoms related to insomnia, as well as sleep-related movement and breathing disorders during sleep that may be indicated by EDS. Sleep screening, using tools such as the ESS [22], was performed prior to a structured sleep history interview to evaluate the tools’ clinical relevance for assessing sleepiness and these specific sleep disorders in this particular patient population.

## Materials and methods

### Study design and participants

This retrospective study included 192 patients who were consecutively admitted to the Department of Psychiatry and Psychotherapy at the University of Regensburg (Regensburg, Germany) for inpatient treatment of an affective disorder. As part of the department’s clinical diagnostic routine, the patients completed several questionnaires about their sleep behavior and associated symptoms shortly after admission. In addition, a sleep history was taken by a somnologist (R.P.) accredited by the German Society for Sleep Research and Sleep Medicine. If a clinically relevant sleep disorder was suspected, further diagnostic

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polysomnography (PSG) was performed in the in-house sleep laboratory.

This study was conducted in accordance with the guidelines of the Declaration of Helsinki and was approved by the responsible ethics committee. All data were pseudonymized before storage.

A total of 242 patients over 18 years of age completed the questionnaires, and 50 patients were excluded. The inclusion criterion was a diagnosis of a moderate to severe depressive episode, i.e., ICD-10 code: F32/33.1 (moderate), F32/33.2 (severe), and F32/33.3 (with psychotic symptoms). Diagnosis was based on clinical assessment supplemented by the Beck Depression Inventory (BDI) [4]. The exclusion criteria included significant cognitive impairments, acute suicidality, or severe psychotic disorders such as schizoaffective disorders or schizophrenia. To obtain the most homogeneous possible group of patients with depression, we also excluded patients with a minor depressive episode or bipolar depression.

### Assessments

#### Sociodemographic and biometric data

Patient characteristics included sex, age, body mass index (BMI), and ICD-10 classifications of depressive, psychiatric, or other somatic disorders. In addition, the use of psychiatric medications was recorded (Supplementary Material Table 1).

#### Daytime sleepiness

The ESS is the most widely used test to measure subjective daytime sleepiness as a trait. The ESS assesses sleep propensity (i.e., the likelihood of dozing off or falling asleep) in different everyday situations in contrast to feelings of tiredness. The ESS is a self-administered eight-item questionnaire (rating of 0–3 for each item; total score of 24). Based on normative data from the German population, a score greater than 10 is considered “clinically suspicious,” and a score greater than 12 is considered “clinically relevant” [31]. In this study, both cutoff values were used.

#### Fatigue

The nine-item Fatigue Severity Scale (FSS) measures fatigue, defined by Krupp et al.

[25] as a sense of physical tiredness and lack of energy that is distinct from sadness or weakness. The FSS uses a seven-point Likert scale with items ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A mean score  $\geq 4$  indicates increased fatigue levels. The applied German version of the FSS [34] specifically asks for the prevalence and severity of “tiredness” and not “exhaustion” [37].

#### Insomnia

The Regensburg Insomnia Scale (RIS) [10] is a 10-item rating scale used to assess the cognitive, behavioral, and emotional aspects of psychophysiological insomnia. A cutoff score of more than 12 (maximum 40) indicates clinically relevant insomnia that warrants further investigation.

#### Sleep-related movement and breathing disorders

The presence of RLS was evaluated face-to-face by an RLS expert and was based on the five essential diagnostic criteria defined by the International RLS Study Group [2]. If an SRBD was suspected, PSG was performed.

#### Statistical analysis

The main outcome parameters were the prevalence of EDS and specific sleep disorders such as SRBDs. Descriptive statistics are provided as frequencies in absolute numbers and percentages. Patient characteristics and assessment parameters were compared between patients with and without EDS or SRBDs using the Mann–Whitney U test and the chi-squared test for dichotomous variables. In addition, Spearman’s rank correlation coefficient was used to evaluate relationships between variables. Statistical analyses were performed using SPSS Statistics (version 25.0; IBM Corp., Armonk, NY, USA). A two-tailed  $p$ -value of  $\alpha < 0.05$  was considered statistically significant.

### Results

#### Study population

■ **Table 2** provides an overview of patient characteristics. The study population consisted of 109 women (56.8%) and 83 men (43.2%). The mean age ( $\pm$  standard de-

viation) of the sample was  $44.01 \pm 13.55$  years. The mean BMI of the sample ( $n = 185$ ) was  $27.21 \pm 6.47$  kg/m<sup>2</sup> (overweight). A diagnosis of at least one other psychiatric disorder, such as an anxiety disorder, in addition to the depressive episode, was seen in 32.2% ( $n = 62$ ) of the patients, and 64.6% ( $n = 124$ ) of patients had one or more somatic diseases. According to the ICD-10 criteria, most patients in this study population were experiencing a severe depressive episode without psychotic symptoms ( $n = 165$ ), and 51.1% ( $n = 98$ ) of these patients had a recurrent depressive episode. Most patients were administered psychotropic medication (93.2%). Sedative medication was used in 82.3% of patients and non-sedative medication in 63.0% (Supplementary Materials Table 1).

#### Prevalence of daytime sleepiness and specific sleep disorders

Overall, 84.4% of the patients reported sleep-related symptoms. The most common symptom was clinically relevant insomnia (75.7%), followed by increased levels of fatigue (66.7%). In this study, 25.3% of patients reported clinically suspicious daytime sleepiness (ESS > 10), and 16.7% had clinically relevant daytime sleepiness (ESS > 12). On average, patients had an ESS score of 7.6 and an FSS score of 4.8.

SRBDs were seen in 18.2% ( $n = 35$ ) of all patients. Seven of these patients had previously been diagnosed with obstructive sleep apnea syndrome and treated with continuous positive airway pressure therapy. Sleep apnea was newly diagnosed during hospitalization in 80.0% ( $n = 28$ ) in this patient subgroup. In 94.6% of these de novo patients, the diagnosis was based on PSG data. RLS was found in 4.7% ( $n = 9$ ) of the patients, with four patients being diagnosed with RLS for the first time. Overall, 16.1% of patients had a previously unknown hypersomnolence-related/specific sleep disorder. None of the patients had a history of central disorders of hypersomnolence, such as narcolepsy.

#### Depression and daytime sleepiness

In our patient sample, there were no significant differences in sex, age, or BMI between the groups of patients with and

**Table 2** Patient characteristics and questionnaire results of the study sample and comparison of subgroups (participants with normal vs. increased sleepiness and with no vs. newly diagnosed sleep apnea)

		Total patients	No sleepiness ESS < 10	Increased sleepiness ESS > 10	p-value	Patients without or treated (n = 7) sleep apnea	Patients with newly diagnosed sleep apnea	p-value
Patient characteristics	(n)	192	139	47	–	164	28	–
	Male sex (%)	43.2	43.9	42.3	0.874 <sup>a</sup>	40.9	57.1	0.108 <sup>a</sup>
	Age (M ± SD)	44 ± 14	44 ± 14	44 ± 13	0.892	43 ± 14	51 ± 9	0.002*
	BMI (M ± SD)	27.2 ± 6.5	26.9 ± 6.5	28.2 ± 6.9	0.230	26.4 ± 5.8	32.0 ± 7.9	0.001*
	BDI (M ± SD)	29.2 ± 9.8	28.8 ± 9.9	30.6 ± 9.8	0.402	29.3 ± 10.1	28.3 ± 8.3	0.571
	Recurrent depression (%)	51.1	53.2	48.9	0.610 <sup>a</sup>	53.0	39.4	0.178 <sup>a</sup>
	Additional psychiatric disorder (%)	32.2	33.1	31.9	0.882 <sup>a</sup>	32.9	28.6	0.649 <sup>a</sup>
Epworth Sleepiness Scale (ESS)	(n)	186	139	47	–	158	28	–
	(Mean score ± SD)	7.6 ± 4.8	5.3 ± 2.8	14.2 ± 2.7	n. a.	7.4 ± 4.7	8.2 ± 5.2	0.527
	ESS > 10 (%)	25.3	0	100	n. a.	22.2	42.9	0.020**
	ESS > 12 (%)	16.7	0	65.9	n. a.	15.8	21.4	0.423 <sup>a</sup>
Fatigue Severity Scale (FSS)	(n)	171	124	41	–	148	23	–
	(Mean score ± SD)	4.8 ± 1.5	4.6 ± 1.6	5.3 ± 1.2	0.008*	4.7 ± 1.5	5.1 ± 1.4	0.230
	FSS > 4 (%)	66.7	61.3	82.9	0.011**	64.2	82.6	0.081 <sup>a</sup>
Regensburg Insomnia Scale (RIS)	(n)	169	124	42	–	141	28	–
	(Mean score ± SD)	18.7 ± 7.8	18.4 ± 8.0	20.0 ± 7.4	0.226	18.2 ± 7.8	21.2 ± 7.5	0.096
	RIS > 12 (%)	75.7	74.2	81.0	0.376 <sup>a</sup>	73.8	85.7	0.571 <sup>a</sup>

The Mann–Whitney U test was generally used to compare differences between subgroups

BDI Beck-Depression-Scale, BMI Body-Mass-Index, M mean, SD standard deviation, n. a. not applicable

<sup>a</sup>chi-squared test was applied for categorical variables

\*p-values < 0.05

without daytime sleepiness. Patients with recurrent depression or other psychiatric or somatic diseases did not show a higher prevalence of daytime sleepiness than patients without these conditions. Patients with ESS scores >10, which is clinically suspicious, had significantly more newly diagnosed sleep apnea compared to patients with ESS scores ≤10 ( $p=0.02$ ). This difference was not observed regarding RLS.

Although there was no correlation between ESS scores and BDI or RIS scores, patients with daytime sleepiness had a significantly higher prevalence and severity of fatigue ( $p<0.05$ ) compared with those without daytime sleepiness. FSS scores correlated positively with ESS scores (Spearman's  $\rho$  0.166,  $p=0.033$ ).

### Depression and sleep apnea

Patients with newly diagnosed sleep apnea were  $8.6 \pm 2.0$  years older than the

rest of the patient population ( $p=0.002$ ). They had a higher BMI, with a mean BMI of  $32.03 \pm 7.87$  kg/m<sup>2</sup> compared to that of  $26.35 \pm 5.81$  kg/m<sup>2</sup> in the rest of the population ( $p<0.001$ ). Most patients with newly diagnosed sleep apnea suffered from additional somatic diseases (85.7%;  $p=0.011$ ). A novel diagnosis of sleep apnea was more common in men compared with women, but this difference was not statistically significant ( $p=0.108$ ; **Table 2**).

While there were more patients with an ESS score > 10 and newly diagnosed sleep apnea than with an ESS score > 10 and no newly diagnosed sleep apnea, the ESS scores were not significantly higher, and the majority of the patients with newly diagnosed sleep apnea had ESS scores < 10.

### Discussion

In a sample of psychiatric inpatients experiencing a severe depressive episode, the majority (75.7%) experienced insomnia. The symptom complexes of fatigue and daytime sleepiness, which were seen in 66.7 and 25.3% of the patients, respectively, should be distinguished from insomnia. While reports of insomnia can be considered typical and common in the diagnosis of depression, daytime sleepiness is not a classic depressive symptom.

The prevalence of 25.3% for increased daytime sleepiness (ESS scores > 10; 16.7% for scores >12) in the patient group of the current study was higher than in the general population, but only slightly. In a larger German study with more than 9000 participants, 22.7% had clinically suspicious ESS scores (> 10), but participants were not excluded due to pre-existing diseases [30]. When comparing the preva-

lence of EDS in inpatients with depression to that of healthy controls, it is important to consider that inpatients in psychiatric hospitals typically follow a consistent daily routine. In contrast, population-based studies inherently involve sleep deprivation related to lifestyle factors. In our study, both ESS score cutoffs ( $> 10$  and  $> 12$ ) were selected following the normative study by Sauter et al. [31] that revealed prevalences of 15 and 5%, respectively, in 239 healthy subjects. However, the studied sample did not represent the true general population.

A similar observation was made by Hawley et al. when comparing psychiatric patients with a normative population [18]. Although psychiatric inpatients more commonly experienced daytime sleepiness than healthy controls (34% vs. 27% with ESS  $\geq 10$ ), this finding must be interpreted considering the relatively high prevalence in the unselected control group. Some studies have shown daytime sleepiness prevalences of more than 50% in patients with depression [8, 20], but these studies may have introduced selection bias while drawing patient samples from sleep clinics.

In the present study, there was no significant correlation between daytime sleepiness and the severity of depression, and previous studies have also revealed heterogeneous findings. In general, sleepiness or even EDS cannot only be attributed to depression but may have other causes [7].

EDS is often indicative of hypersomnolence-related sleep disorders such as comorbid sleep apnea [11, 15]. In fact, 18.2% of patients in the present study showed polysomnographic evidence of sleep apnea syndrome, with significantly elevated ESS scores, mean age, BMI, and additional somatic diagnoses. The prevalence of sleep apnea syndrome was thus higher than in the general population, although another study in psychiatric inpatients showed an even higher prevalence of 23.8% [5]. In that study, however, the diagnosis was not made using PSG but using an eight-channel apnea screening, which could explain the higher prevalence.

In the present patient population, 18.2% had sleep apnea, with 80% of these patients being diagnosed for the first time during their hospital stay. Com-

pared with the general population, with a prevalence of 2–7% [1], the prevalence of sleep apnea was significantly higher in inpatients with depression in the present study. These results were consistent with studies showing prevalences of 19.8–36.8% [33]. Although the frequent occurrence of OSAS in depression has been known for some time, SRBDs remain presumably underdiagnosed in psychiatric inpatients [5]. There is strong evidence for frequent comorbidity between SRBDs and psychiatric disorders, particularly depression. Therefore, screening procedures for SRBDs (i.e., evaluating subjective signs of SRBDs such as snoring, observed apneas, non-restorative sleep, and impaired daytime functioning; polygraphy as an objective screening measure) should be included in the routine work-up of psychiatric hospitals.

The present study also found a previously unknown specific sleep disorder in 16.1% of patients using sleep history and sleep-specific questionnaires. In addition to the anamnesis of typical risk factors and symptoms, the ESS can be helpful in diagnosing sleep apnea or other EDS-related sleep disorders such as RLS. Clinically suspicious ESS scores were seen significantly more often in patients with undiagnosed sleep apnea, consistent with previous studies [5, 19]. Although Sauter et al. recommend a cutoff value of 12 [31], the commonly used cutoff value of 10 proved to be a better choice in the current study. The ESS is widely used, and scores may correlate with the severity of sleep apnea [24]. A study of inpatients with psychiatric disorders found a positive correlation between the occurrence of sleep-related breathing disorders and the risk factors of age, BMI, male sex, and ESS scores [5]. Treating sleep apnea with CPAP can reduce tiredness and fatigue and improve energy levels [9]. However, epidemiological studies have shown that SRBDs are not consistently associated with impaired daytime functioning or EDS [23], and patients may also underestimate their own daytime sleepiness [6]. Thus, in line with the present finding that many newly diagnosed patients did not have daytime sleepiness (57.1%), the ESS is too nonspecific to be used as a screening tool for

SRBDs, and should only be used in combination with other screening methods.

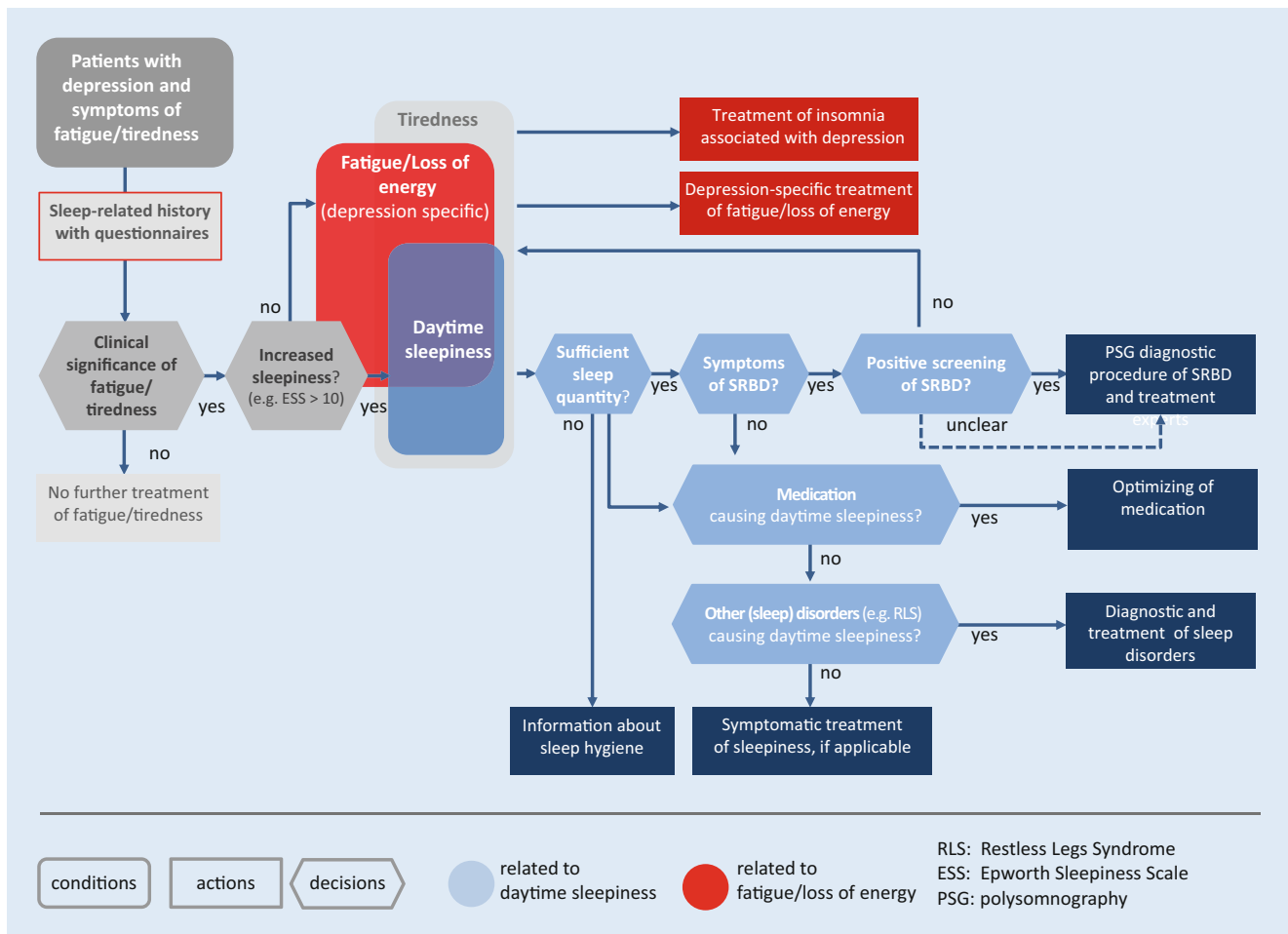
In psychiatric settings, clinicians and psychologists should be aware of the typical symptoms and risk factors for sleep apnea or other sleep disorders and suggest further evaluation when appropriate [3]. The ESS should be used routinely in combination with other tools due to its limited sensitivity (42.9%). PSG is particularly indicated in patients with refractory depression and sleep apnea and treatment of sleep apnea can positively affect both depression and general health [17]. Thus, treating SRBDs with CPAP can diminish depressive symptoms [29], sleepiness [16], tiredness, and fatigue, and improve energy levels [9].

The present study has some limitations. Some patients did not complete both the ESS and FSS, and the missing data could not be retrieved. It remains unclear whether the wording used in the German translation of the FSS [34], which uses “tiredness” instead of “exhaustion,” influenced the distinction between fatigue and daytime sleepiness, since tiredness is a very broad semantic concept. It is important to note that the study lacked a control group, such as inpatients of an orthopedic ward, to directly compare the prevalences of EDS and SRBDs. Further, the majority of patients in this study group were taking psychiatric drugs during the study period. Daytime sleepiness and fatigue may occur to some extent as side effects of medications or other diseases, and the causal effects of this remain unclear. However, due to the small number of exclusion criteria, the risk of selection bias was low.

This study has highlighted a number of issues that still need to be addressed. Considering that insomnia is a major risk factor for the development and maintenance of depression, the question arises of whether daytime sleepiness may also have such an influence. Longitudinal studies examining the effects of daytime sleepiness on the progression of depression are needed.

## Conclusion

Among the prominent symptoms of tiredness, exhaustion, and lack of energy in depression, sleepiness, as a distinct symptom, can be easily overlooked. If patients



**Fig. 1** ▲ Flowchart for the diagnostic assessment of sleepiness and sleep-related breathing disorders (SRBDs) in patients with depression

with severe depression report fatigue or tiredness, specific aspects of the propensity to fall asleep or unintentional sleep should be assessed. The presence of daytime sleepiness can guide the diagnostic evaluation for comorbid sleep disorders associated with EDS such as SRBDs or RLS.

The fact that 80% of the patients herein with sleep apnea were newly diagnosed during their inpatient treatment underlines the importance of collecting sleep-specific medical history in psychiatric patients. Although sleepiness seems to be less prevalent and less severe than fatigue or lack of energy, it is present in a substantial number of patients with depression. Yet sleepiness is an underestimated and undertreated clinical condition in depression that requires specific diagnosis and appropriate treatment in psychiatric settings.

### Conclusion for clinical practice

- Daytime sleepiness, characterized by sleep propensity in daily activities, should be distinguished from more global clinical concepts of tiredness, fatigue, and lack of energy.
- Patients with depression should be asked about sleep-related symptoms, especially sleepiness. Special attention should be given to patients at risk of sleep-disordered breathing disorders (SRBDs; see Fig. 1 for a diagnostic assessment flowchart).
- An early and comprehensive evaluation of the patient's sleep history should be supplemented with standardized questionnaires, such as the Epworth Sleepiness Scale (ESS), to screen for excessive daytime sleepiness. The ESS is a useful tool for quick and inexpensive assessment of daytime

sleepiness and can be easily integrated into psychiatric routines.

- Elevated ESS scores may indicate the presence of undiagnosed hypersomnolence-related sleep disorders, including SRBDs. However, the ESS is not intended to screen for sleep apnea syndrome itself. To diagnose SRBDs, it is necessary to evaluate typical signs of suspected SRBDs and perform objective assessments such as polygraphy or polysomnography, with the latter being the gold standard.

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**Author Contribution.** A.-M. Odenthal: data acquisition, analysis of data, first manuscript draft; J. Ottersbach: analysis of data; F.C. Weber: analysis of data, first manuscript draft; T.C. Wetter: conception and design of the study, data acquisition; R.F.J. Popp: conception and design of the study, data acquisition, analysis of data, first manuscript draft. All authors reviewed and approved the final manuscript.

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**Data availability statement.** Study data are available from the corresponding author on reasonable request.

## Declarations

**Conflict of interest.** A.-M. Odenthal, J. Ottersbach, F.C. Weber, T.C. Wetter and R.F.J. Popp declare that they have no competing interests.

All procedures performed in studies involving human participants or on human tissue were in accordance with the ethical standards of the institutional and/or national research committee and with the 1975 Helsinki declaration and its later amendments or comparable ethical standards. Since the data examined in the present case originate exclusively from routine clinical practice, a separate ICF is not necessary, but is covered by the general informed consent for treatment.

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## Tagesschläfrigkeit bei Depressionen – bei stationären Psychatriepatienten unterschätzt

**Hintergrund:** Schlafstörungen gehören zu den häufigsten Symptomen einer Depression. Sowohl in der International Classification of Disease (ICD)-10/11 als auch im Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 werden Schlafstörungen aller Art als diagnostische Kriterien für Depressionen aufgeführt, jedoch nicht näher definiert.

**Zielsetzung:** In der vorliegenden Studie wurde die Prävalenz von Tagesschläfrigkeit und assoziierten Schlafstörungen bei Patienten mit depressiver Episode untersucht.

**Material und Methoden:** Insgesamt wurden 192 stationäre Patienten mit einer moderaten/schweren depressiven Episode aus einer offenen psychiatrischen Akutstation in die Studie eingeschlossen. Unmittelbar nach stationärer Aufnahme wurden eine Schlafanamnese erhoben und schlafbezogene Fragebögen wie die Epworth Sleepiness Scale (ESS), die Fatigue Severity Scale (FSS) und die Regensburg Insomnia Scale (RIS) ausgehändigt. Bei 82 Patienten mit Verdacht auf Schlafstörungen wurde eine polysomnographische Untersuchung durchgeführt. Die Patientengruppen (z. B. mit und ohne Tagesschläfrigkeit oder Apnoe) wurden miteinander verglichen.

**Ergebnisse:** Die Prävalenz von Tagesschläfrigkeit (ESS > 10) betrug 25,3%. Fatigue und Insomnie wurden von 66,7% bzw. 75,7% der Patienten angegeben. Die Polysomnographie ergab eine Prävalenz der Schlafapnoe von 18,2%, die bei 80% dieser Patienten neu diagnostiziert wurde. Tagesschläfrigkeit trat häufiger bei Patienten mit nichtdiagnostizierter Schlafapnoe auf. Patienten mit Tagesschläfrigkeit gaben häufiger Fatigue an, wiesen aber keine schwerere Depression auf.

**Schlussfolgerungen:** Die vorliegenden Ergebnisse verdeutlichen, wie wichtig die schlafmedizinische Anamnese bei psychiatrischen Patienten ist, v. a. bei Patienten mit Depressionen. Die ESS kann ein nützliches Instrument sein, um speziell die Tagesschläfrigkeit im Gegensatz zur depressionsbedingten Fatigue zu beurteilen. Eine systematische Bewertung der Tagesschläfrigkeit und spezifischer Schlafstörungen, insbesondere der Schlafapnoe, könnte dazu beitragen, die Behandlung stationärer Patienten mit Depression zu verbessern.

### Schlüsselwörter

Fatigue · Diagnostik · Schlafapnoe · Epworth Schläfrigkeitsskala · Prävalenz