Psychosocial and psychosomatic aspects of insomnia

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Summary

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As shown in this review, insomnia is very common and often constitutes a chronic health problem caused by diverse medical, psychiatric and psychosocial conditions as well as substance abuse. Approximately 10% of the general population and 20% of primary care attendees suffer from severe insomnia. Clinical hallmarks of sleeplessness are the patients' complaints about insufficient and non-restorative sleep, severe daytime consequences without any tendency to fall asleep and presence of symptoms on three days per week for more than one month. Insomniacs tend to suffer from psycho-physiologic hyperarousal that prevents physical and mental relaxation. They are more susceptible to stress and seem to have a high sympathetic drive. Insomnia therefore has been compared to chronic caffeine intoxication. It must be pointed out that insomnia is probably more a qualitative rather than a quantitative disorder of sleep. Neither doctors nor patients routinely talk about disturbed sleep during consultations which might be one reason why insomnia very often goes undiagnosed. Consequently, physicians should routinely inquire about their patients' sleep and sleeping habits and take, if appropriate, a full sleep history on the basis of which further investigational and therapeutic steps can be planned: well-established tools of proved efficacy are available to treat both primary and secondary insomnia. Acute or transient insomnia lasting less than four weeks can be treated with hypnotics. Chronic insomnia is the domain of nonpharmacological psychotherapy, which can be conducted in a single or group setting.

Keywords: insomnia; daytime consequences; hyperarousal; evaluation; diagnosis; non-pharmacologic treatment; psychotherapy

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Introduction

Insomnia or sleeplessness is the most frequent syndrome indicating the presence of a sleep disorder in highly-developed Western countries. In many cases, insomnia is a chronic health problem which may drag on for months or years. The reason for this is not so much that insomnia per se inevitably has a chronic course, but rather that it is often not recognised. This precludes differential diagnosis and treatment in the initial stage [1]. Only one third of patients with disturbed sleep, mostly those with pronounced symptoms leading to severe subjective impairment, talk to their doctor about the problem [2]. About one third of primary care physicians do not inquire about sleep disorders when examining patients in their surgery [3]. On the one hand, this may be because transient insomnia is a common psycho-physiological phenomenon with a life-time prevalence of almost 100% so that it is not immediately assumed to be pathological. On the other hand, insomnia is a condition which is subjectively experienced, interpreted and reported very differently. A frequent result of this is that neither the patient nor the physician attributes the impairment of subjective well-being during the day to disturbed night sleep. Further insomnia may result from very heterogeneous somatic and psychiatric – often substance-related – conditions which are clinically more prominent than the sleep-related symptoms. Finally, it is confusing that the definition of insomnia has not been operationalised and clinicians often lack diagnostic guidelines for their daily work.

From a psychosocial perspective, this review presents an introduction focusing on the definition, possible clinical classification, epidemiology,

characteristics, causes, diagnostics and therapy of insomnia. Reviews and "practice parameters" published in recent years in the journal *Sleep* by the American Academy of Sleep Medicine [1, 4–6] are the basis of this paper. Moreover, further important review articles and original papers will be cited to provide the reader with more comprehensive information.

Definition and classification

How affected patients experience and report on their insomnia depends on their subjective perception. Moreover, there may be substantial interindividual differences. This makes it difficult to arrive at a generally valid objective definition of sleep-related problems. The term insomnia or sleeplessness is to a certain extent misleading. It does not stand for purely lack of sleep in the quantitative sense (sleep deprivation), but sleep that is subjectively not restorative and refreshing. For this reason, the patient's statement on the duration of sleep should not be part of a definition of insomnia and should, if at all, only supplement the qualitative description of symptoms. The affected patients suffer from an agonising feeling of exhaustion which is paradoxically associated with a pronounced incapacity to relax and to recover irrespective of the time of day or night. Insomnia can practically be ruled out when patients complain of sleeplessness without any daytime consequences.

Classification of insomnia is always clinically based. It may comprise its cause, symptoms and its time course, but mostly allows no inferences with regard to the aetiology and pathogenesis. Primary or psycho-physiological insomnia must be distinguished from secondary insomnia triggered by a medical, psychiatric or substance-related disorder. Disturbances of initiating and maintaining sleep, including early morning awakening, may be described as well as unsatisfactory sleep. Depending on the subjective suffering entailed and the degree of impairment of well-being during the day, insomnias can be categorised from moderately, severe to slight. Chronic insomnia has a duration of more than four weeks, whereas acute or transient insomnia lasts from a few days to weeks and has a much better prognosis.

Epidemiology

The prevalence of insomnia depends mainly on (a) the population investigated and (b) the criteria for defining insomnia. The major differences in the way in which insomnia is defined in epidemiological studies often render it impossible to make comparisons. For this reason, Ohayon [7] has suggested four categories of prevalence. According to this classification, between 30 and 48% of the general population suffer from *symptoms* of insomnia. If one also inquires as to the *severity* and *frequency*, 10–28% appraise their symptoms as moderate to severe and 16–21% are often or continually insomniac. In addition to insomnia, 9–15% suffer from *daytime consequences*. Chronic insomnia according to the criteria of DSM IV can be *diagnosed* in about 6%.

Patients in general practice show higher prevalences. Hohagen et al. [3] used DMS III-R criteria and found 18.7% severe, i.e. chronic insomnias. Shochat et al. [2] described 19% of the insomnia cases encountered in basic care as chronified and thus as severe. However, they did not use any operationalised criteria. Almost every fifth patient in family doctor surgeries is thus likely to suffer from chronic insomnia requiring meticulous differential diagnostic evaluation.

The elderly suffer from insomnia about 1.5 times more frequently than young people and women about 1.3 times more often than men. Whereas younger patients more frequently have problems in initiating sleep, disorders of maintaining sleep are more often found in older patients, in whom the continuity of sleep is more susceptible to disturbance for physiological reasons. Accordingly, older women are particularly at risk.

Causes

In various investigations on the general population Ohayon [7] was able to diagnose insomnia on the basis of DSM IV criteria in a total of 12.7% of a representative random sample (n = 5622). Differential diagnostic evaluation in these over 700 insomnia patients revealed the following (once more according to DSM IV). There was a psychiatric disturbance, most frequently an anxiety disorder, in 46%. Insomnia was substance-induced in only 2%. Another specific sleep disorder occurred in 5% (e.g. restless legs, periodic limb movement disorder). In 7% of the cases, the insomnia was associated with a general medical cause and in 24% a diagnosis could not be made according to DSM IV. This shows that psychiatric and general medical factors such as drugs and medication are important triggering factors for "secondary" insomnia.

The incidence of primary insomnia is reported to be 16% in the investigation quoted above. In clinical parlance, the term "primary" is mostly used when the onset of the insomnia cannot be associated with any triggering factor in the psychiatric and medical diagnostic sense. Since the term "primary" may give rise to misconceptions, the various possible interpretations should briefly be discussed here: (a) the insomnia occurs in the absence of any triggering factor, i.e. quasi "sui generis", and is thus not to be regarded as a syndrome, but represents the disorder itself. This approach is inconsistent with conventional medical concepts of aetiology and pathogenesis which imply a correlation between cause and effect. It cannot be denied that both the typical pyschophysiological concomitant manifestations (such as hyperarousal, see below) and the cognitive behavioural thesis according to which the genesis and maintenance of insomnia is explained by processes of conditioning and characteristic thought sequences are to a certain degree autonomous. However, these characteristics are too unspecific to enable primary insomnia to be regarded as a discrete entity in the nosological sense. (b) The term "primary" can be equated with "idiopathic", i.e. an underlying cause (e.g. a disease, a life event, etc.) is implicitly assumed, but is not known. (c) Finally, "primary" can mean that a trigger is present, but it is difficult to discern or easy to overlook so that the insomnia only appears to occur without an overt cause. Against the background of their clinical experience, the authors consider the last interpretation to be the most practical one and assume that insomnia is among the most frequent of all neurotic symptoms and has subtle psychological triggers that are not discernible at first glance. Sigmund Freud (1917) designated sleep as a state "[...] in welchem alle Objektbesetzungen [...] aufgegeben und ins Ich zurückgezogen werden" [8]. He also compared the "psychological characteristics" of sleep with a prenatal state that is to a certain extent uncontestably peaceful and self-sufficient: "Die biologische Tendenz des Schlafes scheint also die Erholung zu sein, sein psychologischer Charakter das Aussetzen des Interesses an der Welt. Unser Verhältnis zur Welt [...] scheint es mit sich zu bringen, dass wir sie nicht ohne Unterbrechung aushalten. Wir ziehen uns darum zeitweise in den vorweltlichen Zustand zurück [...]" [8]. This withdrawal is not possible in insomnia because of psychological or psychosocial stress and the consequent conflict generated. Such correlations should be considered in the evaluation (see below).

Characteristics

Disturbed night sleep

Night sleep is felt to be poor and unrestorative in insomnia. From the patients' perspective, the qualitatively unsatisfactory sleep is often confused with lack of sleep in quantitative terms. For a long time it was assumed that larger numbers of awakenings do indeed occur during the night in primary or psycho-physiological insomnia, which typically occurs independently of medical or psychiatric causes. More recent investigations defining the latency and efficiency of sleep and the wake time after sleep onset on the basis of EEG criteria showed that primary insomniacs need longer to fall asleep than normal sleepers. On the whole, they also lie awake longer during the night. However, the number of awakenings did not differ significantly from that of controls [9] and the total sleep duration is not substantially less than that of normal sleepers. Bonnet and Arand [10] simulated in normal sleepers the same sleeping patterns they had previously recorded in insomniacs without being able to reproduce the typical symptoms of primary insomnia. Therefore, the procedure is not a valid model to explain insomnia. Thus the details of what makes night sleep so unsatisfactory in insomniacs are still unclear.

Subjective well-being during the day and daytime sleepiness

Insomniac patients experience appreciable impairments in their subjective well-being during the day. Typically the perception of being continually tired, exhausted and lethargic is at the forefront; they feel that they have reduced drive and limited physical and mental performance continually or at certain times of the day, such as after lunch or in the early evening. Being unrested and already "done in" in the morning and entirely unable to cope with the long, strenuous day is frequent. The sensations patients describe as tiredness and exhaustion often correspond to very dissimilar symptoms which usually cannot be compared to each other: these may range from bad temper, irritation, apathy, weak drive via clinically relevant depression to objectively raised tendency to fall asleep during the day. For reasons of differential diagnosis it is important to distinguish disturbed well-being during the day from raised daytime sleepiness. In contrast to patients with obstructive sleep apnoea or sleep deprivation, insomniacs typically do not exhibit shortened sleep latency as

measured with the multiple sleep latency test (MSLT) [1]. However, a disorder of vigilance with a true tendency to fall asleep during the day is not typically found in insomniacs. This again indicates that insomnia is not comparable to simple sleep deprivation. The same applies to the neuropsychological profile of insomnia patients as compared to that of those with sleep deprivation [1].

Personality and psychiatric symptoms

In epidemiological terms, the manifestation of psychological abnormalities and psychiatric disorders is frequently associated with insomnia. However, even above and beyond formal diagnostic criteria of psychiatric disorders, patients with insomnia frequently have personality traits such as anxiousness, often feel depressed and complain of somatic symptoms. Moreover, they tend to be introverted and have difficulty in expressing negative thoughts and feelings and they do not like to confront conflicts. They also think more often about their sleep during the day [1, 11].

However, since these are mostly cross-sectional investigations, it remains unclear whether the personality traits were already present before the onset of insomnia and thus have a true predictive value, or whether they are a result of trying symptoms which often last for years. These findings might also explain the poorer quality of life in insomniacs [12].

Raised psycho-physiological excitation level (hyperarousal)

Various physiological parameters were investigated with regard to the question as to what factors and mechanisms are involved in the pathogenesis of the vegetative hyperarousal that appears to be characteristic especially in primary insomnia. 24-hour measurements reveal raised basal metabolism [13] probably preventing the physiological decrease in peripheral temperature at sleep onset. Heart rate variability (HRV) is reduced in insomniacs during awakenings and REM sleep, pointing to an increased sympathetic drive [14]. The pulse rate is higher in the pre-sleep phase and under stress compared to controls [1]. Skin conductance is decreased and cortisol secretion is raised. It seems that insomnia patients are more susceptible to stress and that all together the central and peripheral neuronal and humoral stress systems [15] are excessively activated. Primary insomnia was therefore compared to chronic caffeine intoxication [16]. Psychological correlates of this arousal are feelings of nervousness, constant tension, inability to relax and anxiousness.

Steps in evaluation and diagnosis

Objective parameters such as clinical tests or pathognomonic polysomnographic patterns that can be used in daily routine diagnostics [17] are not available. The most important instrument in the clarification thus is still the *interview*. Detailed recording of the psychiatric and medical history as well as exploration is entirely sufficient to achieve correct diagnosis. Ideally, the interview should take place at different levels. Careful questioning with regard to symptoms and their development over time enables an unproblematic start. The symptoms become clearer and insights into the extent of the patient's suffering is obtained. Besides this descriptive level, a more profound psychological dimension should also be explored. Especially in primary insomnia, the diagnostic challenge for the psychiatrist is to lead the patient to discover contents of which he or she is oblivious or only partially aware, and let her or him experience him-/herself "als Abwehrenden" to use Meerwein's words [18]. Issues experienced as extremely shameful such as marital problems, sexual disorders, fear of separation and unfulfilled desires with regard to professional career may often become a chronic burden and must therefore be addressed with empathy.

With the *Epworth Sleepiness Scale* a subjective tendency to fall asleep during the day can be explored. This is of crucial importance for differential diagnosis and further investigation and therapy [19]. Typically, insomnia patients show a pronounced tendency to impaired subjective well-being, but do not have daytime sleepiness.

If it is possible to interview patients several times, a *sleep log* is indispensable for diagnostic and therapeutic purposes. On the one hand, the therapist gets an insight into the patients' sleep habits. On the other hand, patients can be asked to observe themselves in terms of sleep-related behaviours. Misperceptions about the latency and duration of sleep can sometimes be clarified and mistakes of sleep hygiene corrected. *Actimetry* provides supplementary information for the assessment of the rest-activity cycles and helps to detect disturbances of circadian rhythm [20, 21]. Additional evaluation in the sleep laboratory is indicated in less than 5% of cases, for example when restless legs or periodic limb movements are suspected. The *Hospital Anxiety Depression Scale*

[22] is a psychometric screening-instrument which is easy to carry out and may be helpful to detect a possible affective disorder.

By analogy to DSM IV, Hajak [23] has suggested for practical purposes that the following criteria should be fulfilled for diagnosis of chronic insomnia irrespective of its cause: (I) complaints about disturbed and/or unrestorative sleep, (II) appreciable consequences during the day with severe impairment of psychosocial functioning, (III) ruling out of real daytime sleepiness and (IV) the symptoms of insomnia are present on three or more days of the week for at least one month.

Treatment

Pharmacological and nonpharmacological (especially psychotherapeutic) methods are available for treating insomnia. Acute or transient insomnia can be treated by medication. Administration of hypnotics should be limited to 10–14 days and not given without psychoeducative flanking measures (see below). Chronic insomnia persisting for more than four weeks may not primarily be treated by medication. Cognitive behavioural methods which act at a symptomatic level are available; their efficacy has empirically been tested [4, 6]. Explaining the phenomena of healthy and pathological sleep to the patient as well as talking about sleep hygiene rules (i.e. *psychoeducation*) should take place at the outset. In accordance with the concept of psycho-physiological hyperarousal, the excessive intellectual cognitive activity of the patient can positively be influenced with techniques such as *thought stop* and *cognitive restructuring*. Mental relaxation exercises by means of *imaginary journeys* are also often helpful. The physical tension can be countered by *autogenic training* and *progressive muscle relaxation*. Finally, the modification of behaviour in general, i.e. the introduction of *bedtime rituals* and so on, and in specific terms, i.e. with the assistance of *stimulus control,* is important. The latter helps the patient to deal with insomnia and lying awake at night. He or she is instructed not to remain in bed, but to get up after a certain time, i.e. after 10–20 minutes, and engage in another activity until she or he feels sufficiently tired. Moreover, the sleep efficiency, namely the time in bed during which the patient actually sleeps, is improved. Various of the specified elements can also be combined. Detailed treatment manuals are available for therapists and for patients [24–26].

The cognitive behavioural techniques cited have meticulously been investigated. Their efficacy in chronic sleep disorders is regarded as proved. They can also be used successfully in less well-motivated patients with poor capacity for introspection. In this way, major advances in treatment have been made in recent years, especially in restricting the uncritical use of hypnotics. However, one of the drawbacks is that these approaches mainly aim to eliminate symptoms and do not consider dynamic aspects of the human psyche. Moreover, it is not clear whether they have a long-term effect.

Controlled studies have not been carried out on the efficacy of psychodynamic therapies. Nevertheless, on the basis of their clinical experience the authors suggest that psychoanalytically oriented therapies should be given in appropriate and well-motivated patients, especially in those with chronic neurotic insomnia.

Conclusion

Insomnia is a syndrome which is often misinterpreted and frequently becomes a chronic health problem despite the availability of effective means of treatment. It is therefore important that patients are regularly asked about the quality of their sleep in order to be able to appraise whether further steps such as time-consuming recording of a detailed sleep history or referral to a sleep medicine centre are indicated. Poor, unsatisfactory sleep and pronounced disturbance of subjective well-being during the day in which a raised tendency to fall asleep must be ruled out meet the definition of chronic insomnia when they have been observed on more than three days per week over one month. Differential diagnosis of insomnia is broad in scale and should, if necessary, be discussed in consultation with specialists. About 50% of insomnia patients suffer from a psychological disorder, anxiety and depression being most frequent. In 10–20%, there is a chronified primary insomnia which must be tackled mainly by means of psychotherapy. The treatment with hypnotics should always be for a limited time and only administered in acute insomnia with a clearly identifiable trigger.

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