Insomnia Classifications: Are They Clinically Useful?

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ABSTRACT

Insomnia is caused by a variety of physiologic, emotional, environmental, or behavioral conditions. As such, patients with insomnia complaints represent a heterogeneous group. A diagnostic classification system that appropriately and reliably assists in distinguishing or differentiating insomnia subtypes is vital because treatment decisions are largely determined by the eventual insomnia diagnosis assigned. This article reviews the evolution of insomnia classification systems and briefly describes those in current use. Subsequently, these classification systems are evaluated by considering their reliability, validity, and utility in clinical applications. In addition, limitations of the existing insomnia nosologies are discussed, and methods for countering these limitations are considered.

Keywords: Insomnia classification, insomnia diagnosis, reliability, validity

INTRODUCTION

Chronic insomnia is a highly prevalent and often debilitating condition ascribed to multiple causes, including primary disorders of sleep, medical conditions that include chronic pain, psychiatric illnesses, and use or abuse of medications or illicit substances.[1-10] Given this multitude of causative factors, patients with insomnia represent a rather heterogeneous group that can be divided into many distinctive subgroups. Over the past several decades, several nosologies, or diagnostic systems for classification of insomnia subgroups, have been developed. In their clinical applications these nosologies facilitate clinician-to-clinician communication and guide decisions about treatment, prognosis, and administrative procedures.[11] Such nosological classification systems are highly relevant to advanced practice nurses (APNs) because they are often the first clinicians to encounter the patient with insomnia. This article provides a history and description of the nosologies developed for insomnia classification. In addition, the discussion highlights a number of shortcomings inherent in these systems and provides suggestions for their future improvement.

DEVELOPING AN INSOMNIA NOSOLOGY

The steps typically involved in the development of a nosology include (1) obtaining professional sponsorship, (2) assembling an "expert" panel, (3) selecting an appropriate framework for grouping the disorders of interest, (4) choosing possible diagnostic categories and subcategories, (5) arriving at a consensus about those categories, and, finally, (6) writing up the nosology. Factors that can influence the ultimate structure of the classification system include the unique characteristics and dynamics of the consensus panel and practical considerations such as coding and reimbursement. Often, diagnostic systems developed for other disorders are examined for strengths and weaknesses to guide and optimize the new classification system. In all cases, research about insomnia phenotypes, as well as clinical experience, and case studies are important when developing a new classification system.

Under ideal circumstances, diagnostic classification of related medical disorders is based on their clearly defined and distinctive pathophysiologies. In the case of insomnia, however, classification has been largely dependent on factors such as symptom presentation (ie, sleep onset or sleep maintenance problems), sleep laboratory findings, clinical utility, expert experience, and consensus, because much remains unknown about the cause and pathophysiology of insomnia per se.[11] Nonetheless, over the past several decades, considerable efforts have been devoted to the development of insomnia classification systems. The history and results of these efforts are reviewed briefly in the ensuing discussion.

INSOMNIA NOSOLOGIES

Several organizations, including professional sleep societies, the World Health Organization, and the American Psychiatric Association (APA), have published insomnia classification systems. A historical account and description of the major insomnia nosologies published thus far are provided in Table 1. As suggested by the information in this table, these systems have differed in the number and types of insomnia categories they describe. In general, these systems have either tended to "lump" patients with insomnia into a few fairly global categories or "split" such patients into a much larger number of more highly specific subtypes. Given their clear differences, it is obvious that these systems can lead to markedly discrepant diagnostic assignments in their clinical applications. As such, it is important for the APN to consider what the research reveals about each of these systems before selecting one for ongoing clinical use. The choice of a system can only be based on weighing the facts and considering whether an existing system is working—an empirical decision.

In an effort to improve the diagnostic utility of the International Classification of Sleep Disorders (ICSD), the classification system was recently updated (Table 1, ICSD 2). In addition, a "crosswalk" between ICSD 2 and ICD-9 codes has been developed to assist with comparison of these two systems (available at: *www.aasmnet.org/PDF/CrosswalkCard.pdf*).[12]

DIAGNOSTIC RELIABILITY

If a classification system is to be useful, clinicians using the system should generally agree in their diagnostic assignments when independently evaluating the same group of patients. That is to say, the system should be easy enough to use such that there is good reliability between clinicians who use the system. To date, relatively little research has examined the reliability of insomnia nosologies, and results of such research has provided mixed results. Tests of the APA nosologies (ie, the DSM-III-R and DSM-IV systems) have shown good inter-rater agreement for insomnia diagnoses when clinicians use pre-prepared highly structured interviews,[13] but only modest agreement when they use the unstructured interviews typically used in usual clinical practice.[11] Similar impressions are derived from the few reliability tests[14-16] of the ICSD nosology, although these studies have failed to provide information about the reliability of many of the insomnia diagnoses in this system. To date, interclinician agreement for insomnia diagnoses listed in the International Classification of Diseases (ICD) remains unexplored. Given the current status of this research, it appears that the available insomnia nosologies have only modest reliability. As such, there currently is little assurance that clinicians will consistently agree about their insomnia diagnoses regardless of the specific classification system they chose. The APN who is familiar with these classifications is in a position to assess whether a particular system has utility in the clinical setting and may be able to gather information that could be useful in future decisions about the use of such systems.

VALIDITY OF INSOMNIA CLASSIFICATION SYSTEMS

The key question in evaluating the validity of classification systems is, "when the diagnostic system is applied, does the subsequent clinical classification subdivide heterogeneous groups of patients into 'true' or naturally occurring homogeneous subgroups?" Whereas establishing the validity of a specific diagnosis is not particularly difficult, verifying the validity of an entire classification system is challenging from a procedural standpoint. However, one previously used method to test the validity of insomnia nosologies is that of comparing classification results derived from clinical evaluations with those derived from a computer-based statistical method known as cluster analysis. As outlined in Figure 1, the cluster analysis is conducted with a set of variables thought to be relevant, which in the case of insomnia might include