Advancing Effective Clinician Education on Evaluating the Complaint of Excessive Sleepiness and Managing Sleep-Wake Disorders

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Introduction

Insufficient or fragmented sleep affects 50 to 70 million Americans[1] and the resultant complaint of excessive sleepiness (ES) is reported by 21% of women and 30% of men in the United States.[2] Common causes of ES include insufficient time allocated for sleep, sedating medications, and sleep-wake disorders (SWD).[3-5] The psychological, cognitive, and physiological consequences of ES are significant, with considerable health, safety, social, and economic consequences.[4,5] Despite its high prevalence and associated morbidity, ES is underdetected and SWDs are underdiagnosed and undertreated.[6] Such suboptimal clinician performance is related to a number of clinical practice gaps, many addressable via continuing medical education (CME).

In a 2010 publication, we reported the effectiveness of a CME activity with over 1,100 participants.[7] Output from posttests from 824 of those learners and activity evaluations from 534 revealed that the activity resulted in improved clinical knowledge and competence related to sleep disorders, most prominently in the area of screening and identification. Additionally, the analysis revealed additional educational needs and where supplemental educational strategies would be useful. Specifically, additional education is warranted regarding the importance of using objective assessment tools and the value of referral and improved collaboration between primary care providers and sleep specialists.

To more precisely delineate the educational needs from the learner's perspective, this needs assessment investigation was performed to answer the central question—"What do practicing clinicians believe are best educational strategies for influencing their practice behavior regarding management of SWDs?"

Methods

Survey Development and Launch

We developed a structured survey that was targeted to primary care clinicians and was based on ongoing educational need concepts that had emerged from our 2010 publication.[7] The survey included a total of 12 items—seven that collected demographics and practice characteristics, three asking for self-assessment of current clinical competence, and two related to sleep medicine education (Table 1).

Table 1. Survey Items on Self-Assessment and Medical Education

Knowledge level for 5 core topics
Confidence in implementing 5 clinical strategies
Perceived value in use of 5 clinical strategies
Participation in hands-on sleep medicine education
Suggested types of helpful CME activities on sleep medicine topics

In December 2011, we queried the proprietary learner database at CME Outfitters to captured e-mail addresses of those learners who self-identified primary care as their clinical specialty. In January 2012, we sent the structured survey to those captured email addresses via Survey via Survey Monkey® (SurveyMonkey.com, LLC; Palo Alto, CA).

Data Tabulation and Analysis

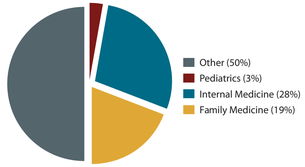
Responses related to demographics and practice characteristics were summed and tabulated as percent responding to each answer/answer category. Responses for self-assessed knowledge, confidence, and perceived value were tabulated as mean rating for the group of respondents. Responses for participation in hands-on sleep medicine education were tabulated as percent responding "Yes." Open-ended responses regarding suggested topics for ongoing sleep medicine CME activities were manually categorized into major themes.

Results

Demographics

There were 745 e-mail addresses that successfully received the survey link. Thirty-four clinicians submitted responses to one or more survey items. Of those who responded to the question about primary degree (n = 33), 28 were MDs, 3 were DOs, and 2 were RNs. Of those who responded to the question about specialty (n = 32), half held primary board certification in Family Medicine, Internal Medicine, or Pediatrics (Figure 1). The majority (72%) had been in clinical practice 20 or more years. The respondent pool was geographically diverse based on region of practice, with 16 states represented.

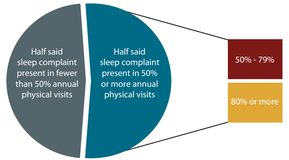
Figure 1. Primary Board Certification (n = 32)



Practice Characteristics Related to Sleep Complaints

Roughly half of the respondents reported that sleep complaints were registered during at least 50% of their annual physical clinic visits, either on a review of systems questionnaire or during history-taking (Figure 2).

Figure 2. Frequency of reported sleep complaint during annual physicals



Regarding acute care visits, 40% of respondents reported that about half of acute care visits that they conduct were with a patient who had a primary complaint that was sleep-related.

Knowledge and Confidence Self-Assessments

Of five topics queried, respondents reported that they were most knowledgeable about medications that cause somnolence and least knowledgeable about the differential diagnosis of excessive sleepiness (Table 2). They were most confident in their ability to identify commonly used medications and or comorbid conditions that may cause or contribute to somnolence and least confident about explaining the purpose of using validated sleep questionnaires to patients (Table 3).

Results cont'd

Table 2. Mean knowledge self assessment ratings (10-point scale)

Assess and rate your level of knowledge regarding each of the following sleep-related topics.	
Medications that can cause somnolence	7.4
Medications that can interfere with sleep	7.2
Which sleep disorders constitute a clinical diagnosis	7.2
Which sleep disorders require polysomnography for diagnosis	7.2
Differential diagnosis of excessive sleepiness	7.1

Table 3. Mean self-efficacy assessment ratings (10-point scale)

Assess and rate your level of confidence in implementing each of the following clinical practice strategies.	
Identify comorbid conditions that may contribute to somnolence	7.3
Identify commonly used medications that often cause somnolence or sedation	7.3
Sort through the differential diagnosis for the sleepy patient	7.2
Refer patients to sleep specialists	7.1
Explain to patients the purpose of using a validated scale to register and rate their sleep complaints	6.5

Perceived Value of Clinical Practices

Patients registered referral of a patient with a sleep complaint to a sleep specialist as the least valuable strategy (mean rating = 6.8 out of 10).

Sleep Education

Of those who registered a response about hands-on education (n = 30)

- 27 had spoken to a sleep specialist about a patient they referred
- 27 had reviewed polysomnography results with a peer or sleep specialist
- 26 had visited a sleep lab
- 24 had been instructed on the use of a CPAP machine
- 22 had handled a CPAP machine

When asked, "What types of CME activities would help you treat patients with sleep complaints better," the key themes reflected in their responses (n = 18) were:

- Diagnosis/Approach to the patient
  - "Approach to the sleepy patient who denies having sleep problems"
  - "Home sleep testing"
  - "When do send/not send consult for sleep study
  - "Indications for actigraphy"
  - "Candidly everyone educates on tools and screens but not on what to do with the results"

Results cont'd

- Treatment
  - "Review of drugs for treatment of somnolence and impaired sleep"
  - "Review realistic, affordable, available treatments, both medication and nonmedication types"
- Specialized sleep disorders
  - Shift work disorder
  - Circadian rhythm disorders
  - Sleep disorders in transportation
  - REM behavior disorder
  - Narcolepsy
- Patient education
  - "Educating the importance of sleep studies to my patients"
  - "How to improve compliance for CPAP"

Conclusions

Optimal patient care is on a continuum. Constant assessment and improvement of clinician knowledge and skills are warranted to help clinicians individualize care for patients with SWDs. Data collected will be shared in a clinically-relevant manner that is beneficial to professionals in involved in clinical care (e.g., sleep specialists) and patient advocacy (e.g., National Sleep Foundation groups).

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