The State of Sleep Medicine Education in North American Psychiatry Residency Training Programs in 2013: Chief Resident's Perspective

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ABSTRACT

Objective: To assess the current state of sleep medicine educational resources and training offered by North American psychiatry residency programs.

Methods: In June 2013, a 9-item peer-reviewed Sleep Medicine Training Survey was administered to 39 chief residents of psychiatry residency training programs during a meeting in New York.

Results: Thirty-four percent of the participating programs offered an elective rotation in sleep medicine. A variety of innovative approaches for teaching sleep medicine were noted. The majority of the chief residents felt comfortable screening patients for obstructive sleep apnea (72%), half felt comfortable screening for restless legs syndrome (53%), and fewer than half were comfortable screening for other sleep disorders (47%).

Conclusions: This is the first report in the last decade to provide any analysis of current sleep medicine training in North American psychiatry residency training programs. These data indicate that sleep medicine education in psychiatry residency programs is possibly in decline.

Prim Care Companion CNS Disord 2017;19(4):17br02167
https://doi.org/10.4088/PCC.17br02167

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Sleep disorders are highly prevalent in association with psychiatric disorders, but the capacity for their recognition is often lacking among psychiatrists.[1] The introduction of the *DSM-5* in 2013 increased the section on sleep disorders as one of its primary additions, which became second only to the section on substance use disorders in size.[2] During the last quarter century, there has been increased regard for the pivotal relationship between sleep problems and mental illness. Several reviews[3–5] have highlighted a bidirectional causal relationship between sleep and psychiatric disorders. One barrier to identification and treatment of these sleep disorders is a paucity of education in psychiatry training programs.[4] With no education in sleep medicine during residency training, psychiatrists will fail to diagnose and care for their patients appropriately. Several studies[6,7] describe this bidirectional relationship between sleep and psychiatric disorders, and new research[6,7] suggests treating both categories simultaneously improves clinical outcomes. Because of the ubiquity of this comorbidity, psychiatrists are often the first to assess and assist patients with sleep complaints. Despite the importance of sleep disorders in the assessment and management of psychiatric disorders, there has been a glaring gap in the curriculum of sleep medicine at all levels of medical education, from medical school to postgraduate training programs including primary care, neurology, and psychiatry.[8–11]

Since psychiatric patients often present with sleep problems as their initial complaint, psychiatry residency training programs must offer trainees sufficient expertise to assess, diagnose, and treat common sleep disorders. At the moment, no unified curriculum or requirement from the Accreditation Council of Graduate Medical Education (ACGME) exists for sleep medicine training in psychiatry residency training programs in the United States. During the past decade, sleep medicine has evolved as a specialty with the American Board of Medical Specialties (ABMS) designation of 5 member boards (American Board of Internal Medicine [ABIM], American Board of Psychiatry and Neurology [ABPN], American Board of Family Medicine, American Board of Otolaryngology, and American Board of Pediatrics) for certification of sleep specialists. The first examinations took place in 2007. The ACGME began accrediting sleep medicine fellowships in 2005. In spite of this, surveys of various specialty training programs including neurology and otolaryngology have shown gaps in sleep medicine training.[10,12] The aim of this study is to assess the current state of sleep medicine training in psychiatry residency programs in North America.

METHODS

In June 2013, a Sleep Medicine Training Survey (SMTS) was completed by a group of chief residents (finishing postgraduate year 3) from 39 psychiatry training programs attending the annual chief residents conference in Tarrytown, New York. One chief resident from each program completed the questionnaire, so each program was represented only once. The study was approved by the

Clinical Points

- Sleep disorder and psychiatric comorbidity is common, but there may be insufficient sleep medicine training in many psychiatry residency programs.
- Many psychiatry residency programs have limited access to sleep medicine faculty with board certification in sleep medicine.
- Fostering collaboration between disciplines (with more board-certified sleep medicine faculty) may decrease the gaps in training and encourage psychiatry residents to go into the field of sleep medicine.

institutional review board of the Veterans Affairs Medical Center, Minneapolis, Minnesota. The SMTS is a 9-item, peer-reviewed questionnaire created by the authors to assess the resources available and the amount of sleep medicine education provided in psychiatry residency programs in the United States. The survey queries program size, sleep fellowship affiliation, didactics, sleep laboratory exposure, availability of faculty with board certification in sleep medicine, comfort in screening patients for common sleep disorders, opportunities to participate in sleep research, and how sleep topics are presented. The SMTS does not address basic sleep science knowledge or assess sleep medicine practice (Supplementary Appendix 1).

Statistical Analyses

Frequency distributions and descriptive statistics for each survey item, as well as cross tabulations examining question response differences by site, were conducted using SPSS version 19. Spearman ρ (nonparametric correlation coefficient) was calculated to measure correlation between several questions from the sleep education survey.

RESULTS

A total of 39 chief residents completed the SMTS for a response rate of 100%. There were 220 accredited psychiatry residency programs in North America in 2013, so the chief residents who participated in our study represent approximately 18% of the psychiatry programs in the country. The mean number of first-year residents in each program was 9.36 (4.32), with a median of 8 and a range of 4–19. Forty-six percent of the programs were university based, 18% were community based, and 36% combined community, university, and Veterans Affairs resources. This sample included 21 programs from the Northeastern region of the United States, 6 from the Midwest, 8 from the South, and 2 from the West, as well as 2 Canadian schools. Table 1 provides further data regarding sleep training in North American psychiatry residency programs.

Thirty-four percent of the programs offered elective clinical sleep medicine rotations. Programs had a median of 3 faculty members with sleep medicine expertise, and 37.8% of the programs had board-certified sleep physicians. Sixteen percent of the programs had residents involved in some aspect of sleep medicine research. Lectures were the most common teaching format (normal sleep = 69%, hypersomnia = 46%, narcolepsy = 59%, obstructive sleep apnea = 30%, central apneas = 40%, restless legs syndrome = 56%, parasomnias = 59%, insomnia = 59%, circadian rhythm disorders = 56%, neurologic disorders and sleep = 38%, and psychiatric disorders and sleep = 46%).

There was a strong correlation between residency site with a dedicated sleep clinic and institution offering a formal fellowship in sleep medicine ($r = 0.468$, $P = .005$) and having board-certified sleep medicine specialists ($r = 0.468$, $P = .005$) and a trend for offering rotations in sleep medicine ($r = 0.315$, $P = .062$). There was a strong correlation between an institution offering a formal fellowship in sleep medicine and having board-certified faculty in sleep medicine ($r = 0.402$, $P = .017$). There was also a strong correlation between offering rotations in sleep medicine and having board-certified sleep medicine faculty ($r = 0.412$, $P = .011$) and residents involved in sleep research ($r = 0.443$, $P = .014$). Table 2 provides further data.

By the end of the third year, 72% of the residents reported feeling competent at screening patients for possible obstructive sleep apnea, 53% acknowledged confidence in screening for restless legs syndrome, and 47% reported confidence in screening for other sleep disorders.

Table 1. General Statistics of Programs and Sleep Education at the Tarrytown Chief Resident Conference 2013

Variable	Total	University Based	Community Based	Mixed (University and VA or Community)
No. of programs	39	18	7	14
No. of residents per year, mean	9.36	11.11	7.57	8.00
Programs with affiliated sleep centers, %	48.7	NA	NA	NA
Programs with board-certified sleep medicine faculty, %	37.8	35.3	42.9	38.5
Programs offering sleep medicine fellowship, %	15.4	16.7	14.3	14.3
Programs with dedicated sleep clinics, %	48.7	66.7	14.3	42.9
Programs offering didactic in sleep medicine, %	89.5	88.9	85.7	92.3
Programs offering education in cognitive-behavioral therapy for insomnia, %	37.8	55.6	0	33.3
Programs offering polysomnographic exposure, %	10.5	11.1	0	15.4

Abbreviations: NA = information not available, VA = Veterans Affairs.

Table 2. Spearman ρ Nonparametric Correlations Between Program Attributes and Residents and Faculty Involved in Sleep Medicine

	Residency With Dedicated Sleep Clinic	Institution Offers Formal Fellowship in Sleep Medicine	Residents Participate in Didactic Sleep Lectures	Rotations in Sleep Medicine	Faculty With Board-Certified Sleep Medicine Specialists	Residents Participate in Sleep Research
Residency With Dedicated Sleep Clinic		0.468*	0.020	0.315**	0.468*	0.258
Institution Offers Formal Fellowship in Sleep Medicine			0.135	0.129	0.402***	0.033
Residents Participate in Didactic Sleep Lectures				0.247	0.250	0.093
Rotations in Sleep Medicine					0.412***	0.443***
Faculty With Board-Certified Sleep Medicine Specialists						0.053
Residents Participate in Sleep Research						

*$P < .01$.
**$P < .10$ (trend).
***$P < .05$.

DISCUSSION

These data indicate that didactic sleep medicine education is offered by almost 90% of programs represented, but demonstrates a relative paucity of faculty with training in sleep medicine. Less than 40% of programs have faculty with training in sleep medicine. In particular, none of the community-based programs have any offerings for polysomnography exposure and education in cognitive-behavioral therapy for insomnia, and the overall percentage of programs offering these educational experiences is low. There are strong correlations between the presence of faculty with sleep medicine board certification and offering training or research opportunities or clinical exposure to sleep medicine.

Part of the significant discrepancies in what different residency programs offer may occur as a consequence of an absence of a unified curriculum or program requirement for sleep medicine education in the United States. Krahn and colleagues[9] commented on this in 2002, and program requirements have not changed since then despite these observations. Their data surveyed 117 of 182 psychiatry residency programs in the United States. While 82% of psychiatry programs had didactic lectures in sleep medicine, 55% had no actual sleep medicine specialist faculty to provide this instruction. They commented that if limitations in sleep medicine electives and psychiatrist mentors with sleep medicine training persist, psychiatry could lose its "critical mass in the sleep medicine community."[9(p256)] Krahn et al[9] cite data from 117 residency programs of which 44% offer a sleep medicine elective compared to 34% of programs in our group. A similar survey was administered to neurology residency programs in 2013 by Avidan and colleagues[10] who found that 69% of neurology programs have faculty with sleep medicine specialization compared to 38% of psychiatry programs in our sample. Yet, in spite of over two-thirds of the neurology programs having faculty with sleep medicine training, the authors[10] felt that exposure to sleep medicine in the neurology programs was "limited." Sampling bias limits the ability to compare the neurology programs in the study by Avidan et al[10] to psychiatry programs with faculty with sleep medicine training in our sample.

It is unclear to what extent the new ABMS certification examination may negatively influence the prevalence of physicians with sleep medicine training in psychiatry programs. This latter possibility aligns with concerns recently highlighted by the American Academy of Sleep Medicine, noting that the recent requirement of completion of an ACGME accredited fellowship in sleep medicine to sit for the ABMS certification examination has had the unintended consequence of limiting the influx of younger physicians with specialized training in sleep medicine.[13]

Our questionnaire responses also indicate a relative paucity of training for psychiatric residents in cognitive-behavioral therapy for insomnia, particularly among community-based programs. Insomnia symptoms affect up to 50% of the population, while 10%–20% may suffer from an insomnia disorder.[14] Treatment guidelines[15] have highlighted the preference for cognitive-behavioral therapy for insomnia as opposed to pharmacotherapy for initial treatment of chronic insomnia. Given the high prevalence of this symptom in the population and the relative paucity of training offered for the most recommended modality of treatment for insomnia, an examination of curriculum development to reflect modern advances in treatment options for this condition is warranted.

This study is preliminary, with a primary limitation being the underrepresentation of North American psychiatric training programs. There is also a biased overrepresentation of psychiatry programs from the Northeastern United States, thus limiting the generalizability of these findings. Our sample included 18% of US psychiatry programs, which is significantly lower than the 66% (117 programs) response rate reported by Krahn et al.[9] While the rate of 18% of programs is low, it would be reasonable if it were considered as a response rate for a physician group.[16] Likewise, there is no assessment of teaching quality and personnel or any objective measurement of teaching effectiveness. The questionnaire also does not assess basic sleep science knowledge and routine sleep medicine practice in the programs. Additionally, the data relied on information provided by chief residents (postgraduate year 3). It is possible that chief residents may not be fully aware of the curriculum content of their respective residency programs. Furthermore, the programs participating in the Tarrytown

leadership conference is a biased sample of residency programs not only by region, but also possibly by size, as more frugal or smaller programs may be more likely to balk at sending their residents to this conference because of, for instance, the costs incurred to the program for resident participation (approximately $1,895 US per resident). Given this bias, however, this sample may overrepresent sleep medicine education in psychiatry residency programs, as the same financial resource limitations that might limit the ability of residency programs to send residents to such conferences may also limit the same (presumably) smaller programs from offering education in sleep medicine.

The available data provide a snapshot of the state of sleep medicine education in psychiatry programs in the United States and draw attention to the need for more sleep medicine training. We speculate that there is a relative paucity of psychiatrists trained in sleep medicine to offer clinical and educational experiences to learners, although this conclusion cannot confidently be drawn due to several limitations of the data obtained. Data obtained from ABPN and ABIM websites (https://www.abpn.com and http://www.abim.org, respectively), however, indicate that in 2017 there were 3,845 sleep medicine–boarded physicians from ABIM and 1,503 ABPN sleep medicine diplomates. Only 236 of these diplomates have board certification in psychiatry, indicating that psychiatrists make up only 4.4% of sleep medicine–boarded physicians. In the future, these questionnaires should be administered to psychiatry departmental program directors to get a more precise reflection of the state of sleep medicine education in North America. Despite these limitations, these data raise several questions. For example, is it possible that the availability of electives is an issue for residents in psychiatry because many sleep centers do not have psychiatric faculty with sleep medicine training? Have program directors conceded that sleep medicine is a domain of other specialties in spite of ABPN being 1 of the 5 board members?

To enhance sleep medicine education for future generations of psychiatrists, it may be necessary for psychiatry programs with no access to psychiatrist sleep specialists to collaborate with faculty in internal medicine, neurology, or pulmonary medicine with sleep medicine certification. This collaboration could even be extended to telemedicine or webinars if desired. Unless further attention is paid to this issue, the concerns raised by Krahn et al[9] about psychiatry losing its place in sleep medicine may come to fruition, and this would undermine an important aspect of clinical psychiatric practice.

Submitted: May 19, 2017; accepted June 23, 2017.
Published online: August 31, 2017.
Potential conflicts of interest: None.
Funding/support: None.
Supplementary material: See accompanying pages.

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Supplementary material follows this article.

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Supplementary Material

Article Title: The State of Sleep Medicine Education in North American Psychiatry Residency Training Programs in 2013: Chief Residents Perspective

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DOI Number: https://doi.org/10.4088/PCC.17br02167

List of Supplementary Material for the article

1. Appendix 1

Disclaimer

This Supplementary Material has been provided by the author(s) as an enhancement to the published article. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

Appendix 1. Sleep Medicine Training Survey (SMTS)

If more than 1 chief residents are attending the conference, please consult with your collegues and submit only 1 questionnaire.

1)On average, how many residents per year are in your training program (excluding fellows)? ☐☐

2) Would you describe your program as:

- ○ University-based
- ○ Community-based
- ○ VA based
- ○ mixed (both university and VA or community based)

3) Do any of your residency training sites have a dedicated sleep medicine clinic?

○ Yes ○ No ○ Don't know

4) Does your institution (facility or academic affiliate) offer a formal fellowship in sleep medicine?

○ Yes ○ No ○ Don't know

If "Yes": How many of your residents have pursued a sleep fellowship in the last 5 years (please estimate): ☐☐

5) During residency training, do your residents participate in:

a) Didactic (lecture) sessions dedicated to sleep disorders? ○ Yes ○ No

If "Yes", how many didactic sessions by time of residency completion:

○ 1-2 ○ 2-5 ○ 5-8 ○ 8-10 ○ More than 10 hours

b) Rotations in sleep medicine clinic . ○ Yes ○ No

If "Yes", is it :

○ required ○ elective ○ intermittent (such as half-days scattered throughout the year)

c)Training in Cognitive Behavioral Therapy for Management of Insomnia ○ Yes ○ No

d) Polysomnography laboratory exposure (at least one day of exposure during entire training experience). ○ Yes ○ No

6) Do you have faculty with board certification in sleep medicine? ○ Yes ○ No

if yes, how many board certified physicians? ☐☐

Over

7) By the end of your 3rd year training, are you comfortable screening for patients with :

Obstructive Sleep Apnea: ○ Yes ○ No

Restless legs syndrome : ○ Yes ○ No

Other sleep disorders : ○ Yes ○ No

8) Are any of your residents participating in sleep research? ○ Yes ○ No ○ Don't Know

If yes, how many? ☐☐

9) Please indicate which topics are taught in your residency and how (fill in all that apply)

a. Normal Sleep	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
b. Hypersomnia	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
c. Narcolepsy	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
d. Obstructive Sleep Apnea	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
e. Central Sleep Apnea	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
f. Restless Leg Syndrome	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
g. Parasomnia	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
h. Insomnia	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
i. Circadian Rhythm Disorders	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
j. Neurological Disorders and Sleep	○ Lecture	○ Clinical	○ Case Review	○ Not Taught
k .Psychiatric Disorders and Sleep	○ Lecture	○ Clinical	○ Case Review	○ Not Taught

Thank You!