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Implementing an Insomnia Assessment and Management Algorithm in a Rural Pirmary Care Clinic

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Executive Summary

Introduction to the Problem

Insomnia is considered one of the most common sleep complaints in the United States and affects around one-third of the population (Mahmood et al., 2021; Manber et al., 2022; Torrens Darder et al., 2021). Though sleep disorders are widespread, they are disproportionately underdiagnosed and undertreated in low socioeconomic groups and among rural populations (Billings et al., 2021). Insomnia is associated with diabetes, hypertension, and increased risk of cardiovascular and cerebrovascular disease (Johnson et al., 2021), as well as anxiety, depression, drug and alcohol consumption as well as work accidents (Torrens Darder et al., 2021). The primary care clinic is an ideal venue that can play a critical role in identifying and implementing early interventions to address insomnia (Torrens Darder et al., 2021).

Despite the prevalence of insomnia and its health implications, in a study by Klingman et al. (2019), only 30% of patients indicated that they discussed sleep with their primary care providers. There are multiple reasons why these sleep issues are not adequately addressed. Addressing this complex issue, which occurs with multiple comorbidities, is time-consuming, and providers have limited time to address insomnia as well as other pertinent health issues in the average 15–20-minute visit (Haycock et al., 2021). Patients were not offered the recommended treatment option, cognitive behavioral therapy for insomnia (CBT-I) versus medications, as healthcare providers were unclear of the most recent treatment recommendations as well as the availability of these resources within their rural community (Koffel et al., 2018). Enhancing provider education surrounding the importance of assessing and effectively treating insomnia per treatment guidelines in a rural primary care clinic was essential. The development of a treatment algorithm in the rural primary care clinic would assist primary care providers in completing a

simple, quick assessment of chronic insomnia and create a patient-specific treatment plan to manage this challenging disorder. Generating research-based patient education resources supporting the treatment plan equips patients with the necessary tools to improve their sleep.

Literature Review

Insomnia affects numerous patients and can have detrimental effects on health. There is a notable overlap between insomnia symptoms and multiple health disorders, which further contributes to the complexity of managing chronic insomnia. Additionally, rural populations are generally less likely to receive effective treatment interventions (Billings et al., 2021). When synthesizing the evidence, CBTi was clearly found to be superior to pharmacotherapy in managing chronic insomnia in adult patients, and the benefits extend long-term (Blom et al., 2016; Koffel et al., 2018; Morin et al., 2020; Rios et al., 2019; Van der Zweerde et al., 2020). Multiple upstanding medical societies have endorsed CBTi as the number one treatment recommendation for chronic insomnia (Edinger et al., 2021; Qaseem et al., 2016; Salisbury-Afshar, 2018).

When comparing the articles, there is an evident mismatch between patients' and health care professionals' points of views surrounding insomnia. The articles provided a clear foundation of the development of this DNP project indicating that chronic insomnia would be better managed using a shared decision-making process that follows treatment guidelines. The findings further illustrated that practitioners could utilize the patients' perspective of dealing with chronic insomnia and associated symptoms to effectively tailor insomnia interventions accordingly, whether that be a direct referral for CBTi, referral to Sleep Clinic, or mental health services.

Furthermore, providers expressed a strong interest in improving education surrounding insomnia treatment and would benefit from targeted educational interventions including the assessment and treatment of insomnia, managing adverse outcomes associated with insomnia, and data providing CBTi effectiveness and availability (Koffel et al., 2018). Clinical decision-making is a complex process that relies upon experience and knowledge base. Therefore, it will be beneficial to provide clinician education with a readily accessible treatment pathway and resources that can be utilized in the organization's EMR to simplify the process.

Project Methods

An algorithm was developed to identify and initiate treatment for patients eighteen years or older who experience chronic insomnia in a certified rural health clinic in central Illinois. The project also addressed overlapping sleep disorders, contributing mental health disorders, and decreasing the risk of cerebral and cardiovascular diseases associated with chronic insomnia. IRB submission was completed and obtained approval to proceed with the project. Multiple meetings were conducted with key stakeholders, including the Primary Care Director, Sleep Director, Sleep Medicine department colleagues, clinical psychologist, and information technology team of the organization, to further develop the algorithm and make available in the EMR. Data from the literature review was utilized to compose a detailed patient education handout addressing chronic insomnia treatment recommendations. This handout was reviewed by the organization's Sleep Medicine team, including the Sleep Medicine Director and clinical psychologist. Patients evaluated in Sleep Medicine were administered this handout and received positive feedback. An educational lunch presentation was conducted for primary care providers and support staff that offered one hour of CME and outlined the importance of treating chronic insomnia, reviewed treatment guidelines from prominent medical societies, and offered a

treatment pathway that can be implemented in primary care using a “smart phrase” in the organization’s EMR. A brief synopsis of the information shared during the meeting was presented during the regional primary care provider monthly meeting and revisited monthly. Primary care providers completed pre- and post-Likert evaluations before and after implementing the project to assess its effectiveness.

Evaluation

The evaluation portion of this project centered on the delivery of provider education surrounding recent treatment insomnia guidelines and creating a treatment pathway to guide providers to effectively assess and treat patients eighteen years or older who experience chronic insomnia in a certified rural health clinic in central Illinois. The project began with a one-hour educational lunch presentation for providers and clinical staff in early May. There was a post-presentation evaluation using Likert scale items to assess the quality of the content in the presentation and provide additional data to address any inadequacies. Providers indicated that the presentation was beneficial and necessary.

A pre-intervention survey was obtained from providers in early May and was followed by a post-intervention survey completed in late November to obtain provider feedback surrounding the project. Providers noted that they found the education meaningful and adapted the treatment recommendations to their practice.

The population health department assisted in gathering data from the organization’s electronic medical record, Epic, to assess the total number of sleep medicine referrals from primary care to determine if the number had risen, indicating increased assessment and management of sleep issues after the intervention. A report was obtained from May 1st to November 30th of 2022, prior to the project, to assess the number of referrals to Sleep Medicine

compared to a report during the same time interval in 2023. The comparison was completed during the same season to avoid confounding factors that may alter results that vary from season to season, i.e., seasonal affective disorder. There was a 15% increase in referrals addressing sleep issues during the time interval that the project was completed.

There were four identified direct referrals to a sleep psychologist for CBTi completed by primary care provider. The total number of direct referrals for CBTi from primary care providers was unclear as many referrals did not specify CBTi and were thus unable to be efficiently tracked in EMR. When discussing the low number of referrals to the sleep psychologist for CBTi with providers, primary practitioners indicated that many of their patients exhibiting insomnia also experienced symptoms of other sleep disorders- i.e. restless leg syndrome or possible sleep apnea that would be addressed in Sleep Medicine.

Impact on Practice

The project benefited the primary care practice. Providers appreciated updated treatment guidelines and patient education resources. Many providers remarked that they frequently utilized the patient education “smart phrase” and associated resources as they had nonpharmaceutical treatment options to offer patients for insomnia. There was a 15% increase in sleep medicine referrals to address insomnia and other related sleep issues. Patients were able to be promptly referred to CBTi when needed.

There were limitations related to the project. The site was a rural primary care clinic. Therefore, only a small sample size of providers participated in the project, and it is uncertain if it would succeed in large urban clinics. Despite multiple attempts, obtaining feedback from all providers in the clinic was not feasible, and only two-thirds of the providers completed pre-post surveys. Providers indicated that it was challenging to recall the “smart phrase” title created in

Epic to pull into their office notes. Additionally, the “smart phrase” treatment algorithm did not fully align with many prebuilt primary-care note templates and had difficulty pulling into office notes. Data was unavailable to assess the number of sleep medications prescribed by primary care providers before and after the project, nor was it possible to assess if sleep issues were assessed more frequently within the primary care clinic as diagnosis codes varied. Direct patient feedback regarding insomnia management and patient resources was not obtained during the project.

The patient education “smart phrase” will be updated in Epic to provide a timely resource for patients and providers. The “smart phrase” treatment pathway will be amended to more easily recalled and readily inserted into office visit note templates. Promoting direct referral for CBTi with a clinical psychologist will continue. It is anticipated that sleep medication prescriptions will likely be reduced, which will eliminate potential adverse effects for patients. Patients who experience overlying sleep disorders in addition to insomnia will be effectively managed. This project could be replicated in other primary care practice settings.

Conclusion

Insomnia significantly impacts quality of life and productivity, and primary care providers can play an instrumental role in addressing the issue. Enhancing provider education surrounding the importance of assessing and effectively treating insomnia per treatment guidelines with a treatment pathway improved insomnia management in a rural primary care clinic. Developing patient education resources supporting the treatment plan equipped patients with the necessary tools to improve their sleep. Routine use of patient-specific treatment plan benefits both providers and patients by delivering safe and efficient care for the substantial number of patients who experience chronic insomnia.

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