ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 11, Issue, 03, pp.2538-2540, March, 2019

DOI: https://doi.org/10.24941/ijcr.34841.03.2019

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

ASSOCIATION BETWEEN SLEEP QUALITY AND PRIMARY HEADACHE

***Dr. Shuchi Pande and Dr. Sunil G. Gupte**

Department Psychiatry, MVP's Vasant Rao Pawar Medical College, Nashik, Maharashtra

ARTICLE INFO

Article History:

Received 17th December, 2018
Received in revised form
21st January, 2019
Accepted 03rd February, 2019
Published online 31st March, 2019

Key Words:

Sleep Quality, Headache,
Pittsburg Sleep Quality Index.

ABSTRACT

Introduction: Sleep and headache problems are among the significant concern of health sector. But the exact relationship between these two important has been studied less. Therefore this study is designed to determine the relationship between sleep quality and primary headache .Sleep and headache share a well-recognized, bidirectional relationship, with complex and incompletely understood interactions. The physiology of sleep shares many features with the pathophysiology of headache disorders, both in terms of the neuroanatomical pathways and the neurotransmitters that are involved. This may explain features of primary headache disorders like migraine, cluster headache and tension type headache. Moreover, the painful experience of headache itself disrupts sleep, potentially creating a vicious circle of reinforcement. Both sleep disturbance and chronic headache also greatly increase the risk of depression, anxiety and other psychiatry disturbances hence further affecting the complex relationship between sleep and headache. **Methods**: Present sample consists of 60 patients who presented with the complaints of primary headache to the department of psychiatry and neuropsychiatry clinic in a tertiary care institute from August 2016 to June 2018. This is a cross sectional Observational study. After being evaluated by the neuropsychiatry clinic, the patients along with records of treatment and classification of primary headache will be evaluated for sleep quality. A self-administered questionnaire Pittsburgh Sleep Quality Index (PSQI) that assesses sleep quality over a 1-month time interval was used to collect data. **Result:** Headache occurance is associated with poor sleep quality .In this study 95% of the patients presenting with headache had association with poor sleep quality. **Conclusion:** In this study, there is well established relationship between sleep quality and headache has been shown but more and similar evaluation and study are needed to complete and confirm this relationship in future.

Copyright © 2019 Dr. Shuchi Pande and Dr. Sunil G. Gupte. *This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

Citation*: *Dr. Shuchi Pande and Dr. Sunil G. Gupte. **2019.** "Association between sleep quality and primary headache", *International Journal of Current Research*, 11, (03), 2538-2540.

INTRODUCTION

Headache is one of the commonest neurological disorder and is widely present in adult population worldwide. Headache is one of the most common reasons to seek medical attention. It has a significant effect on the patient's performance and quality of life. Headaches are broadly divided into two types: primary and secondary. Primary headaches are disorders in which headache and associated features occur without any exogenous cause. They are more common than secondary headaches. Common primary headaches include migraine, tension-type, and cluster. Headache and sleep disturbance are symptoms that commonly show co morbidity. Many sleep disorders have been diagnosed more often in patients with primary headaches (Dodick, 2003). Sleep-related symptoms, such as fatigue and yawning, can occur before a migraine attack and can also trigger migraine attacks in the case of insufficient sleep (Blau, 1982).

Corresponding author:* **Dr. Shuchi Pande,
Department Psychiatry, MVP's Vasant Rao Pawar Medical College, Nashik, Maharashtra

Sleep-related symptoms are associated with painful conditions, partly because pain may interfere with sleep and vice versa. This dual cause and effect relationship has been known for many years through clinical experience with headache patients and the scientific literature about the co morbidity of headache and sleep disturbances are growing. Many epidemiological studies have evaluated this association in relation to nonspecific headache diagnoses (e.g. headache, morning headache, chronic daily headache) whereas relatively few epidemiological studies have focused on the diagnosis of primary headache. TTH is associated with sleep disorders and subjects with TTH often report of sleep complaints related to insomnia (Odegård, 2010). The impact of sleep complaints in migraineurs is more extensively studied[1]. Also, excess of sleep, insufficient sleep duration, and poor sleep quality are common triggering factors for migraine attacks. The main object of the present study was to evaluate the association between sleep quality and headache.

METHODS

Study type/ design: Cross sectional Observational study.

Study settings: The study will be done in department of psychiatry and neuropsychiatry clinic in a tertiary care institute.

Duration of study: From August 2016 to June 2018

Sample size: Minimum no. of patients = 60

Z2 [P*(1-P)] = Z=1.96 , P=4.2 %=0.042,

D2 D=5%=0.05 =60

Z = Z-value A (e.g., 1.96 for a 95 percent confidence level).
P = Percentage of population picking a choice, expressed as decimal.

D = Confidence interval.

Eligibility Criteria

inclusion Criteria

- Patients of 18 to 60 years.
- Irrespective of gender.
- Clinically diagnosed 'primary headache'.
- Primary headache patient willing for participation in study after giving written informed consent.

Exclusion Criteria

- Suffering from serious or debilitating medical illness
- Past history of any documented psychiatric illness.
- Patient having secondary headache.

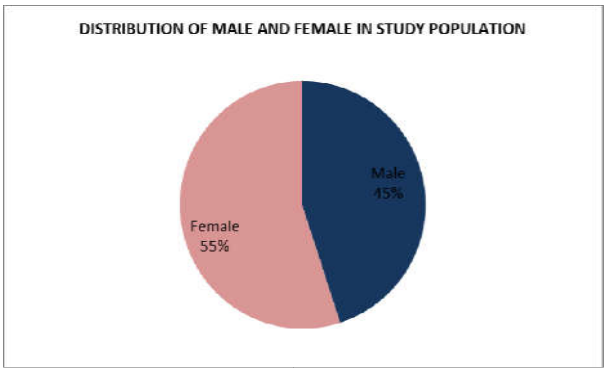
The study was approved by the institutional ethical clearance and informed consent was obtained from all the patients who were included in the study. Patients with headache were categorized using ICHD III (International classification of headache) and Pittsburgh Sleep Quality Index (PSQI) were applied to patients to asses quality of sleep.

Pittsburgh Sleep Quality Index (PQSI): This questionnaire evaluates the quality of sleep over a 1-month period by including 19 self-rated questions and other 5 questions answered by bed/roommates. Item use varying response categories recording usual bed time, usual wake time, number of actual hours slept and number of minutes to fall asleep. All questions are answered on a Likert-type scale (0–3). The sum of all answers is transformed into a global score (0–21) where higher score indicates worse sleep quality. A total score greater than 5.0 points is indicative of poor sleep quality. The PSQI has shown good internal consistency and test-retest reliability[7].

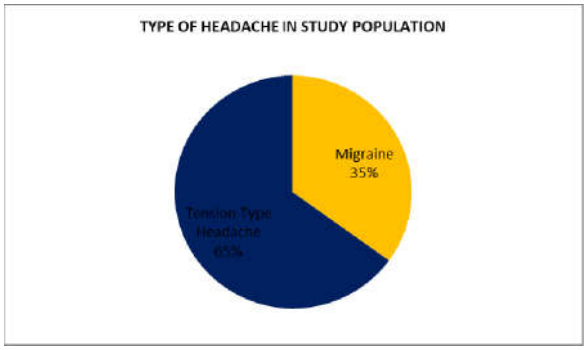
RESULTS

The data collected is summarized as following

- **Age of the study Population:** The study group consisted of 60 patients, the age range being 18 to 60years. Most of the patients in study fall into the group of28 to 37 years (45.00%).



- **Types of Headache:** Out of 60 patients 21 were of migraine and 39 were of tension type headache



- The PSQI consists of 19 items measuring seven sleep pattern domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medications, and daytime dysfunction.

Subjective Sleep Quality Among Primary Headache Patient: Subjective sleep quality was reported very bad by total 32 patients 16 of TTH and 16 of Migraine, fairly bad by 16 patients 11 of TTH and 5 of migraine,7 patients of TTH reported fairly good subjective sleep quality and 5 patients of TTH reported very good sleep quality.

Sleep latency among patients of primary headache patient: 38 patients had very bad sleep latency, 13 had fairly bad, 7 had fairly good sleep latency and 2 patients had very good sleep latency.

Sleep duration among the patients of primary headache: 36 patients of total were having total sleep duration of more than 5 hours. In which 18 were of TTH and 18 of Migraine.11 patients of TTH and 3 patients of migraine had 5-6 hour of sleep duration, 6 patients of TTH had 6-7 hour of total sleep duration and 4 patients of TTH had more than 7 hour of total sleep duration.

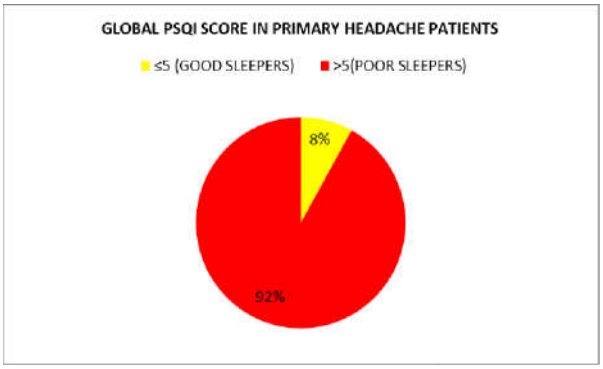
Habitual sleep efficiency among patient of primary headache: Habitual sleep efficiency is= (number of hour slept/number of hour spent in bed)x 100=% ,47 patient had more than 65% of sleep efficiency ,4 had between 65%-74%,5 had between 75%-84% and 4 had >85% of habitual sleep efficiency.

Sleep disturbances among patients of primary headache: Out of 60 ,19 patient of TTH and 19 Patient of migraine has sleep disturbance score of 2 and 15 TTH patients had sleep disturbance score of 1 and 5 migraine patient had sleep disturbance score 0.

Use of sleeping medication among patients of primary headache: 32 patients were using sleep medication 3 or more times a week , in which 16 were of TTH and 16 of Migraine,16 patients were using medication once or twice a week,7 were using less than once a week and 5 patients not used any sleep medication during the last one month.

Daytime dysfunction among patients of primary headache: 30 patient had very big problem in day time functioning, 18 had moderate problem, 7 had slight problem and 5 had no problem at all with day time functioning.

Global piittsburgh sleep quality index (psqi) among patients of primary headache patient: Seven component of scale are added to get global Pittsburgh sleep quality index. it ranges from 0-21, "0" indicating no problem at all and "21" indicating severe difficulties in all areas. In this study 41 patient had score in between 15-21, 11 in between 8-14 and 8 patient had score in between 0-7. 5 patient (8.33%) patients with primary headache had global PSQI scores ≤ 5, indicating good sleep quality, while 57 (95%) patients had poor sleep quality (>5 global PSQI). Developers of PSQI have suggested a cutoff score of 5 for the global scale as A global PSQI score > 5 yielded a diagnostic sensitivity of 89.6% and specificity of 86.5% in distinguishing good and poor sleepers.



DISCUSSION

- » This study has shown association of sleep quality of patients with migraine and TTH.
- » In Third Nord-Trondelag Health Study Odegard *et al*. (2010), investigating the relationship between headache types and sleep disorders, found that daytime sleepiness and various sleep disorders occur five times more often in migraine headache patients than in patients without headaches. Sleep disorders were detected three times more often in subjects with TTH than in subjects without headaches. While sleep disorders were detected 17 times more often in patients with chronic headache than in control subjects, this ratio was significantly higher in patients with Chronic Migraine than in patients with Chronic TTH (Odegård, 2010).
- The relationship between pain and sleep is complex in people with chronic pain. Pain may reduce the quality of sleep or poor quality sleep can increase the severity of pain, not only for headaches, but for all types of pain.
- In this study, we reviewed the relationship between sleep and migraine and TTH that are most commonly observed in primary headaches and found that both the quality of sleep was disrupted and daytime dysfunction was increased in patients.
- If there is complaint of interrupted sleep is present and sleep quality is reduced, the priority should not be only to treat the headache, but to choose a treatment that will improve sleep quality, especially in chronic primary headache patients.
- Our results support that daytime dysfunction increases in migraine and TTH, sleep quality get worsen in migraine and TTH.
- The mechanism underlying this association is not clear. Both daytime sleepiness and poor sleep quality may be the result of headache or the reason.
- Further studies of physiological patterns of sleep quality and headache are needed to confirm the study findings and to enrich our understanding of their interactions.

Conclusion

- In This study, there is well established relationship between sleep quality and headache has been shown but more and similar evaluation and study are needed to complete and confirm this relationship in future. Sleep is affected among TTH and Migraine patients.
- Most affected domain is SLEEP DISTURBANCES having highest frequency (15) in TTH group which is significant.

Conflicts of interest: None to mention.

REFERENCES

Andersen ML., Tufik S. 2000. Altered sleep and behavioral patterns of arthritic rats. *Sleep Res Online*. 3: 161-167.

Blau JN. 1982. Resolution of migraine attacks: sleep and the recovery phase. *J NeurolNeurosurg Psychiatry*. 45: 223-226.

Chiu YC., Hu HY., Lee FP., Huang HM. 2015. Tension-type headache associated with obstructive sleep apnea: a nationwide population-based study. *J Headache Pain.,* 16: 34.

Dodick DW., Eross EJ., Parish JM., Silber M. 2003. Clinical, anatomical, and physiologic relationship between sleep and headache. Headache. 43: 282-292.

Jennum P., PaivaT. 2005. Headaches and sleep. 2006. In: Olesen J, Goadsby PJ, Ramadan NM, Tfelt-Hansen P, Welch KMA, the Headaches. 3rd ed. Philadelphia: Lippincott, Williams & Wilkins., 1099-104.

Kristiansen HA., Kværner KJ., Akre H., Overland B., Russell MB. 2011. Tension-type headache and sleep apnea in the general population. *J Headache Pain*., 12: 63–69.

Landis CA., Levine JD., Robinson CR. 1989. Decreased slow-wave and paradoxical sleep in a rat chronic pain model. Sleep. 12: 167-177.

Odegård SS., Engstrom M., Sand T., Stovner LJ., Zwart JA., Hagen K. 2010. Associations between sleep disturbance and primary headaches: the third Nord-Trondelag Health Study. *J Headache Pain*. 11: 197- 206.

Onen SH., Onen F., Courpron P., Dubray C. 2005. How pain and analgesics disturb sleep. *Clin J Pain.,* 21: 422-431.

Sancisi E., Cevoli S., Vignatelli L., Nicodemo M., Pierangeli G., Zanigni S. *et al*., 2010. Increased prevalence of sleep disorders in chronic headache: a case-control study. *Headache*. 50: 1464-1472.

Seidel S., Hartl T., Weber M., Matterey S., Paul A., Riederer F. *et al*., 2009. Quality of sleep, fatigue and daytime sleepiness in migraine - a controlled study. *Cephalalgia*. 29: 662-669.

****