Original Article

Patterns of Insomnia in Cases of New Onset Depression Visiting Psychiatry OPD of Tertiary Level Hospital

Pokhrel R, Sharma VD, Ojha SP, Chapagai M, Tulachan P, Dhungana S, Panta SB

Department of Psychiatry and Mental Health, Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal

Corresponding author: Dr. Rojan Pokhrel

Email: pokhrel.rojan@gmail.com

Abstract

Introduction: Depression is one of the common mental disorders, ranked third among causes of YLDs (Years Lived with Disability) in both developed and developing countries (GBD 2015). Insomnia is one of the commonest symptoms of depression, though often under-detected and undertreated. This study aims to identify prevalence of insomnia in cases of new onset depression as well as severity of insomnia and quality of sleep.

Methods: A total of 101 patients, visiting the psychiatry OPD of TUTH, IOM and diagnosed as new onset depression, were selected by non-probablity purposive sampling method, after meeting inclusion criteria and informed consent being obtained. The duration of study was 1 year. The semi-structured proforma was filled by the interviewer. Beck's Depression Inventory (BDI) was used to assess of severity of depression. Athens Insomnia Scale (AIS) was used to screen for insomnia and then severity of insomnia was assessed using Insomnia Severity Index (ISI). Quality of sleep was assessed using Pittsburgh Sleep Quality Index (PSQI).

Results: Insomnia was observed in 90.1% of patients with depression. Early insomnia was seen in 71.3% of patients, mid insomnia in 70.3% of patients and late insomnia in 45.6% of patients. 88.1 % of participants were found to be poor sleepers, and 11.9% good sleepers.

Conclusion: Statistically significant positive correlation was observed between severity of depression and severity of insomnia ($r=0.740$, $p<0.05$) and between severity of depression and PSQI score ($r= 0.556$, $p<0.05$).

Keywords: Depression, insomnia, quality of sleep

Introduction

Depression is one of the common mental disorders[1] that clinically manifested as persistent sadness, decreased interest in activities that you normally enjoy, & an inability to carry out daily activities, for at least 2 weeks.[3]

In the recent Global Burden of Disease Study 2015, major depressive disorder was ranked third among causes of YLDs in both developed and developing countries, which was an increase in rank in comparison to GBD 2005, where it was ranked fourth.[2]

A study done in Lativa showed the point prevalence of depression to be 6.7%.[4] Life time prevalence of depressive disorder as reported by DSM-5 is approximately 7%, and about 12% as estimated from WHO mental health survey, done in 14 countries.[5] A cross-sectional study done in Nepalese population, from house to house survey showed a point prevalence of depression of 11.7 %.[6]

Patients with depression commonly presented with problems in sleep, around 3/4th of them experiencing insomnia symptoms.[7] According to ICSD-3, insomnia is characterized by: A complaint of difficulty in initiation

or maintenance of sleep, or waking up too early; The above sleep difficulty occurs despite adequate opportunity and circumstances for sleep; The impaired sleep produces deficits in daytime function. The degree of the sleep disturbance in each individual varies, but typically occurs at least three times per week.

The CRESCEND study, one of the largest trial, also observed insomnia as one of the commonest symptom in patients with depressive disorders. Insomnia was seen in approximately 93% of patients, with simultaneous early, middle, and late insomnia affecting about 64.1%.[8] The STAR*D study done in the United States showed 84.7% of depressive participants experienced insomnia, and it was correlated with scores reflecting more severe depression.[9] In another study, insomnia was a symptom in approximately 80 percent of patients with depression.[10]

There is reciprocal relationship between sleep and depressive illness–depression may cause sleep problems and sleep problems may contribute to depressive disorders. In one study, individuals with insomnia were 34 times more likely to develop a psychiatric disorder (particularly major depression) within one year, compared to individuals without insomnia.[11] Sleep problems are also associated with more severe depressive illness. Different evidence suggests that chronic insomnia is a strong risk factor for the development of depression[12] as well as a prognostic indicator of clinical course and response to treatment.[13] In addition, insomnia is associated with suicidal ideation and behavior in depressive patients.[14] Insomnia is also accompanied by difficulty in daytime functioning: Fatigue or malaise, poor attention to work, irritability, daytime sleepiness, reduced motivation or energy, increased risk of accidents. Insomnia can predict the onset of depression as well as can be a symptom of depression. So risk factors of insomnia should be identified and more emphasis should be given in the early management of insomnia, which will ultimately help in the better prognosis of the disease.

Methods

Eligible subjects of the present study were: Patients of age group-18 to 59 years and giving informed consent and patients not on any psychotropic for last 1 month. Patient's having bipolar disorder, organic brain disease, learning disability and those having language barrier were excluded. Research proposal was approved by Institutional Review Board (IRB) of IOM, TUTH. A total of 101 patients having new onset depression were selected from the patients visiting the psychiatry OPD of TUTH, IOM. Participants were chosen applying purposive sampling. The study duration was 1 year from September 2016-September 2017. Informed consent was obtained from each participant. The semi- structured proforma was filled with adequate information. The questions were asked by the interviewer in the presence of the caretaker and the proforma was filled by the interviewer. Initially, BDI was done, and assessment of severity is done. After that Athens insomnia scale was used to screen for insomnia and then severity of insomnia was assessed using Insomnia severity index. After that Pittsburgh sleep quality index was utilized to find the quality of sleep. Finally, information obtained from demographic profile, clinical features, and rating scale was analyzed by using suitable statistical tools.

Self-designed semi structured proforma: This proforma was devised to obtain the socio- demographic characteristics of the study population. It consisted of age, sex, marital status, ethnicity, educational status, religion, caste, occupation, total income, past history of any illness, family history, history of suicidal attempt. Appropriate question was framed to get the relevant information.

Beck's Depression Inventory: BDI is a self rating scale consisting of 21 questions. It can be used to measure the severity of depression. It is a 4 point scale ranging from 0-3. The scores of 0-9 is interpreted as minimal depression, 10-18 as mild depression, 19-29 as moderate depression and 30-63 as severe depression.[15]

Athens Insomnia Scale: This is also a self rating scale for screening of insomnia. It consists of 8 questions, rated on 0 to 3 scale. Score of 6 or more is indicative of insomnia.[16]

Insomnia Severity Index: This tool consists of 7 questions. It is a self reported questionnaire used for screening for severity of insomnia. It assesses the pattern of the sleep in the last 2 weeks. This is a 5 point likert scale score ranging from 0-4. The scores of 0-7 is interpreted as no clinically significant insomnia; 8-14 as subthreshold insomnia; 15-21 as clinical insomnia (Moderate severe) and 22-28 as Clinical insomnia (Severe).[17]

Pittsburgh Sleep Quality Index (PSQI): This is a self administered tool consisting of 19 questions. Score of 5 or more indicates poor sleepers. It measures 7 items i.e.

subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medications, and daytime dysfunction over the last month.[18]

Statistical analysis: Data were analyzed using Statistical Package for Social Sciences (SPSS), Inc., Chicago, Illinois, USA version 17 for Windows. Results of descriptive analysis were expressed using mean ± standard deviation, percentage with 95% confidence intervals (CI) whenever appropriate. Pearson's correlation coefficient is used to identify the relationship between different variables and values of $P<0.05$ was considered statistically significant.

Results

Insomnia was seen in 90.1% of patients. Early insomnia was seen in 71.3% of patients & late insomnia was seen in 45.6% of patients. 88.1 % of participants were found to be poor sleepers. Mild depression was seen in 22% of patients, moderate depression in 55% and severe depression in 23% of patients. The mean age of the study population was 34.98±10.43. Highest number of participants were in the age group of 26-30 years, i.e. 19.8%. The ratio observed between females to males is approximately 2:1. Majority of participants were found to be married (77.2%), 19.8% were unmarried, 1% were separated and 2% were divorced. 19.8% participants were found to be educated upto primary level, 32.7% were educated upto Secondary level, 30.7% were educated upto SLC and Intermediate, and 16.8% educated upto Graduate level. Highest number of participants belonged to unemployed, student and homemaker (53.5%). 22.8% of participants were involved in agriculture, forestry and fishery workers and least commonly found in technician, associate professional and craft and related trade workers (1%). Majority of the participants belonged to Chhetri (27.7%), 24.8% belonged to Brahmin, 12.9% belonged to Newar, 5% each belonged to Magar and Tharu and 3% each belonged to Musalman and Gurung. Most of the participants belonged to the nuclear family (69.3%), and only 4% belonged to extended family. Statistically significant positive correlation was observed between severity of depression and severity of insomnia. ($r=0.740$, $p<0.05$) and between severity of depression and PSQI score ($r= 0.556$, $p<0.05$).

Discussion

This study was carried out with the objective to estimate the prevalence of insomnia in patients of depression as well as to assess the severity of insomnia and quality of sleep. This study also tried to find the association between severity of depression with severity of insomnia and quality of sleep.

This study included 101 patients of new onset depression. Insomnia was found to be very common in patients of depression, seen in 90.1% of patients. Early insomnia (Difficulty in sleep induction) was found to be more common, observed in 71.3% of patients. Mid insomnia (i.e. frequent awakenings at night) was seen in 70.3% of patients. Early morning awakening i.e. late insomnia was seen in 45.6% of patients.

The prevalence of insomnia observed from our study was similar to the prevalence obtained from the CRESCEND study, in which symptoms of insomnia were present in 93% of patients. Mid insomnia was found to be more common in 85.7%, with early insomnia seen in 76.9%, and late insomnia in 78.2% of patients.[8]The STAR*D trial, one of the largest and longest trial, showed 84.7% of patients with depressive disorders, were found to be suffering from insomnia. In this study mid insomnia was found to be most common, seen in 82.3% of patients.[9] In both of these studies mid insomnia is found to be more common, which is in contrast to our study, which showed early insomnia to be more common. But our finding replicated with the study done by M. Hamilton which also showed, early insomnia to be more common in depression, seen in 80.5% of patients (83.7% in males & 77.7 % in females). Mid insomnia was seen in 68.9% (71.5% in males & 66.5% in females) and late insomnia in 72.9% (74.1% in males and 71.9% in females) of patients.[19] In this study 88.1% of participants were found to be poor sleepers, and 11.9% were good sleepers, as measured from PSQI. Statistically significant positive correlation was observed between severity of depression and PSQI score. ($r =0.556$, $p<0.05$).This finding was in line with a study done by Nasir et al in which 92.5% patients had poor sleep. This study also identified a significant relationship between quality of sleep and depression ($p<0.005$).[20] A study done by Salman et al, also observed relationship between severity of depression and quality

of sleep, with significant positive correlation between PSQI and BDI (r = 0.410, P < 0.001).[21] A study done by Neira et al also showed PSQI global score had positive significant association with depression (r = 0.25, P < 0.01), indicating poor sleep quality was associated with mood disturbance.[22] A study done by Trbojevic et al also showed that the depressed patients had significantly worse quality of sleep than patients without depression (p<0.001) and poor sleepers had a significantly higher BDI (p<0.001). This study also identified a statistically significant positive correlation between BDI and PSQI (r=0.604; p<0.001).[23] A study done by Ibrahim et al, also showed the poor sleepers had higher BDI scores. The global PSQI score was correlated positively with BDI scores (r = 0.422, *p* <0.001).[24]

In our study, insomnia was found to more severe in patient with higher scores on BDI. Statistically positive correlation was observed between severity of depression and severity of insomnia. (r=0.740, p<0.05). A study done by Yang et al also showed the association of severity of insomnia with depressive symptomatology. BDI scores were found to be positively correlated with ISI scores (r = 0.32, p = 0.002)[25] A study done by Chan et al also found insomnia to be more severe in the cases of more severe depression.[26]

Conclusion

This study shows that there is high prevalence of insomnia in cases of depression. Statistically significant positive correlation was observed between severity of depression and severity of insomnia. (r=0.740, p<0.05) and between severity of depression and PSQI score (r= 0.556, p<0.05). As the results suggested, quality of sleep is poorer in patients of depression, so the sleep problems should be properly assessed and managed in cases of depression that may actually help in the better management of the illness.

Conflict of interest: None declared

References

1. Goldberg D. A bio-social model for common mental disorders. Acta Psychiatrica Scandinavica. 1994; 90(s385):66-70.
2. Vos T, Allen C, Arora M, Barber RM, Bhutta ZA, Brown A, et al. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. The Lancet. 2016; 388(10053):1545.
3. Organization WH. The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines: World Health Organization; 1992.
4. Rancans E, Vrublevska J, Snikere S, Koroleva I, Trapencieris M. The point prevalence of depression and associated sociodemographic correlates in the general population of Latvia. Journal of affective disorders. 2014; 156:104-10.
5. Kessler RC, Ormel J, Petukhova M, McLaughlin KA, Green JG, Russo LJ, et al. Development of lifetime comorbidity in the World Health Organization world mental health surveys. Archives of general psychiatry. 2011; 68(1):90-100.
6. Risal A, Manandhar K, Linde M, Steiner TJ, Holen A. Anxiety and depression in Nepal: prevalence, comorbidity and associations. BMC psychiatry. 2016; 16(1):102.
7. Nutt D, Wilson S, Paterson L. Sleep disorders as core symptoms of depression. Dialogues in clinical neuroscience. 2008; 10(3):329.
8. Park S-C, Kim J-M, Jun T-Y, Lee M-S, Kim J-B, Jeong S-H, et al. Prevalence and clinical correlates of insomnia in depressive disorders: The CRESCEND Study. Psychiatry investigation. 2013; 10(4):373-81.
9. Sunderajan P, Gaynes BN, Wisniewski SR, Miyahara S, Fava M, Akingbala F, et al. Insomnia in patients with depression: a STAR* D report. CNS spectrums. 2010; 15(6):394-406.
10. Krystal AD. Psychiatric comorbidity: the case for treating insomnia. Sleep Medicine Clinics. 2006; 1(3):359-65.
11. Ford DE, Kamerow DB. Epidemiologic study of sleep disturbances and psychiatric disorders: an opportunity for prevention? Jama. 1989; 262(11):1479-84.
12. Ohayon MM, Roth T. Place of chronic insomnia in the course of depressive and anxiety disorders. Journal of psychiatric research. 2003; 37(1):9-15.
13. Thase ME. Antidepressant treatment of the depressed patient with insomnia. The Journal of clinical psychiatry. 1999.
14. McCall WV, Blocker JN, D'Agostino R, Kimball J, Boggs N, Lasater B, et al. Insomnia severity is an indicator of suicidal ideation during a depression clinical trial. Sleep medicine. 2010; 11(9):822-7.
15. Beck AT, Ward CH, Mendelson M, Mock J, ERBAUGH J. An inventory for measuring depression. Archives of general psychiatry. 1961; 4(6):561-71.

16. Soldatos CR, Dikeos DG, Paparrigopoulos TJ. Athens Insomnia Scale: validation of an instrument based on ICD-10 criteria. Journal of psychosomatic research. 2000; 48(6):555-60.

17. Bastien CH, Vallières A, Morin CM. Validation of the Insomnia Severity Index as an outcome measure for insomnia research. Sleep medicine. 2001; 2 (4):297-307.

18. Carpenter JS, Andrykowski MA. Psychometric evaluation of the Pittsburgh sleep quality index. Journal of psychosomatic research. 1998; 45(1):5-13.

19. Hamilton M. Frequency of symptoms in melancholia (depressive illness). The British Journal of Psychiatry. 1989; 154(2):201-6.

20. Nasir U, Shahid H, Shabbir MO. Sleep quality and depression in hospitalized congestive heart failure patients. J Pak Med Assoc. 2015; 65(3):264-9.

21. Abdulsalam SM, Gupta S, Trivedi M, Farooqi M. Poor qualit y of sleep and its relationship with depression in first year medical students. Advances in life science and technology. 2013; 12:17-21.

22. Araghi MH, Jagielski A, Neira I, Brown A, Higgs S, Thomas GN, et al. The complex associations among sleep quality, anxiety-depression, and quality of life in patients with extreme obesity. Sleep. 2013; 36(12):1859-65.

23. Trbojević-Stanković J, Stojimirović B, Bukumirić Z, Hadžibulić E, Andrić B, Đorđević V, et al. Depression and quality of sleep in maintenance hemodialysis patients. Srpski arhiv za celokupno lekarstvo. 2014; 142(7-8):437-43.

24. Güney İ, Biyik M, Yeksan M, Biyik Z, Atalay H, Solak Y, et al. Sleep quality and depression in peritoneal dialysis patients. Renal failure. 2008; 30(10):1017-22.

25. Yang KI, Grigg-Damberger M, Andrews N, O'Rourke C, Bena J, Foldvary-Schaefer N. Severity of self-reported insomnia in adults with epilepsy is related to comorbid medical disorders and depressive symptoms. Epilepsy & Behavior. 2016; 60:27-32.

26. Chan JWY, Lam SP, Li SX, Yu MWM, Chan NY, Zhang J, et al. Eveningness and insomnia: independent risk factors of nonremission in major depressive disorder. Sleep. 2014; 37(5):911-7.