Sleep Health xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

Sleep Health

Journal of the National Sleep Foundation

journal homepage: sleephealthjournal.org

Insomnia in primary care—a study from India

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ARTICLE INFO

Article history:
Received 16 August 2017
Received in revised form 6 November 2017
Accepted 8 November 2017
Available online xxxx

Keywords:
Insomnia
Primary care
Correlates
India

ABSTRACT

Objectives: To study the prevalence and clinical correlates of insomnia among a sample of primary care attendees, in the state of Kerala, India.
Design: Cross-sectional survey.
Setting: Primary care.
Participants: 7017 adult patients [18–60 years] attending 71 primary health centers selected by cluster random sampling.
Measurements: Patients were assessed for insomnia using the Insomnia Severity Index. In addition to self-reported socio-demographic and chronic medical illness details, structured instruments were used to assess for mental disorders, disability and life satisfaction.
Results: Subclinical insomnia and clinical insomnia were reported by 17.7% and 4.7% subjects, respectively. Subjects with subclinical and clinical insomnia when compared to those without insomnia had higher odds of having older age, female gender, urban background, lower education, chronic medical and mental disorders, greater disability and poor life satisfaction. Subjects with clinical insomnia when compared to the subclinical group had higher odds of having older age, urban background, lower education, mental disorders and greater disability. Among mental disorders, depressive disorder was correlated with both clinical and subclinical insomnia.
Conclusions: Clinical and subclinical insomnia is common among primary care attendees and both are associated with significant morbidity. This study highlights that it is a major public health concern, albeit neglected, which needs to be dealt as a priority.

Introduction

Insomnia is the most common sleep disorder in clinical practice. Subjects with chronic insomnia have a poor quality of life, reduced work productivity including absenteeism, increased risk of accidents, higher healthcare utilization and increased mortality risk.[1,2] Older age, female gender, being separated/divorced/widowed, lower education and lower income are reported to be associated with insomnia.[3–7] Insomnia and psychiatric illnesses frequently co-occur.[8,9] Chronic medical conditions also increase the risk for developing insomnia.[10]Correlates of subjects who have subclinical sleep disturbances remain under-studied though there is evidence from other neuropsychiatric disorders like depression that even sub-threshold conditions can be impairing.[11]

Occasional or transient sleep disturbances are extremely common in the community with third of the population experiencing it any given time.[12] The prevalence rates of insomnia in the general population vary widely, from 6% to 33%.[4] A higher prevalence of insomnia has been reported from primary care settings with rates varying between 10–69%.[13–15] Indian studies reporting on insomnia are sparse. Existing Indian studies are single center small studies reporting prevalence rates of 15–45%.[16–18] Though the varying rates could be partly accounted by methodological differences, international studies using similar methodology, have reported variation in the geographic distribution of insomnia.[4,19] The major studies in primary care from various countries and indexed studies to date from India are summarized in Table 1.

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https://doi.org/10.1016/j.sleh.2017.11.001
2352-7218/

Table 1
Major studies on prevalence of insomnia in primary care from various countries and studies from India

Authors	Country/Region	Sample size	Instrument used	Sample	Prevalence
Leger et al., 2010	10 countries	13,124	AASM, DSM-IV	Primary care	32.6%
Terzano et al., 2004	Italy	3284	Semi-structured questionnaire	Primary care	64%
Alattar et al., 2007	USA	1935	Semi-structured questionnaire	Primary care	33%
Simon et al., 1997	USA	373	Items from CIDI	Primary care	18%
Siversten et al., 2010	Norway	24,715	The International Classification of Primary Care	Primary care	11.2%
Zallinawati et al., 2012	Malaysia	2075	ICD 10 and DSM IV	Primary care	35.5%
Indian studies					
Roy et al., 2015	Karmarhati, West Bengal	1185	ISQ	One urban cluster (General population)	15.4%
Panda et al., 2012	Bangalore, Karnataka	1050	Sleep Disorders Proforma, Epworth Sleepiness Scale, and PSQI	Healthy attendants of patients of one hospital	18.6%
Bhaskar et al., 2016	Bangalore, Karnataka	278	Athens Insomnia Scale	Family medicine outpatient department of one hospital	33%

Despite the common occurrence, numerous negative correlates and the socio- economic burden reported from across the world, no large multi-center study among primary care attendees in India has been reported. It is in this context that this study examined the prevalence and correlates of insomnia among a large sample of primary care attendees across multiple centers in the State of Kerala, India. The findings reported here are part findings of a larger study which assessed psychological issues among primary care attendees.

Participants and methods

This study is a cross sectional survey conducted in May 2016 of adult patients [18–60 years] attending primary health centers (PHCs) (government-run general practice) in the State of Kerala, India. The state of Kerala has 14 districts, which are the administrative sub-units of the state. Each district was divided into 5 clusters and one PHC was randomly selected from each cluster. In addition to the 70 PHCs selected, one more PHC was randomly chosen to make up for the missing data. A sample size of 7000 was calculated, based on the expected coverage of 90%, confidence interval of 1% and design effect of 2.5%. To ensure sample size at least 100 patients were assessed from each PHC.

A total of 7555 subjects were invited to participate, of whom 390 (5.2%) subjects did not provide consent. Among the responders, 148 (1.9%) questionnaires had substantial missing items providing 7017 (92.9%) valid questionnaires for analysis.

The questionnaire was administered by the Block Public Relations Officers (Block PROs) of the National Health Mission (Kerala) at the PHC under the supervision of the medical officer in-charge of the PHC. The PROs had postgraduate qualifications in social work and had received prior training on the questionnaires.

All patients were approached by the survey personnel after their appointment with the medical officer at the PHC. They were explained the broad objectives of the survey and all those who gave informed consent were administered the questionnaire. There were no incentives for participation, but the participants were explained that the project would have a broader public health objective of addressing any lacunae in the health care system.

Ethical considerations

Institutional Ethical approval was received from Government Medical College, Ernakulam and administrative approvals were received from the Government of Kerala. Informed consent was taken prior to the survey. Subjects were also given the option not to answer any or all the questions.

Methodology

Socio-demographic profile (age/sex/living arrangements/area of residence/education/occupation/economic indicators/marital status) and history of chronic medical illness was assessed using a check list. Insomnia was assessed with Insomnia Severity Index.[20] The Insomnia Severity Index (ISI) is a self-administered questionnaire with seven questions which are designed to assess the nature, severity and impact of insomnia with a recall period of 2 weeks. A total score of less than 7 indicates no clinically significant insomnia; 8–14 indicates sub-threshold insomnia; 15–21 clinical insomnia (moderate severity); and 22–28 indicates clinical insomnia (severe). For the purposes of this study, all subjects reporting sleep disturbances with a ISI score of ≤14 were categorized as sub-clinical insomnia (ISI sub-categories of no clinically significant insomnia and subthreshold insomnia grouped together) and subjects with ISI score ≥ 15 were grouped as clinical insomnia (ISI subcategories of clinical insomnia [moderate and severe severity] grouped together). Subjects reporting sleep disturbance were asked whether their symptoms exceeded six months duration.

In addition to ISI, the following instruments were used to assess various correlates. The Patient Health Questionnaire-SADS (PHQ-SADS) was used to assess depression, anxiety, somatization, and panic symptoms.[21] The PHQ-SADS is validated both as a screening and diagnostic tool for these disorders in primary care. Assessment of alcohol use was by using the Alcohol Use Disorders Identification Test (AUDIT), which is a 10-item screening tool developed by the World Health Organization (WHO).[22] For this study, the cut-off score was 8 indicating hazardous alcohol use. Tobacco use was assessed using the Fagerström test for nicotine dependence, which is the gold standard instrument for assessing the intensity of physical addiction to nicotine.[23] The 12 item WHO Disability Assessment Schedule (WHODAS) was used to assess the level of disability due to health conditions impairing overall functioning in the last month.[24] It is possible to compute total scores which can be compared across conditions with higher scores signifying greater difficulties. A concise assessment of quality of life and life satisfaction was done using two items from WHOQOL-BREF, which is a well–validated instrument to assess quality of life.[25]

Statistical analysis

SPSS version 22 was used for analysis.[26] The prevalence and duration of various categories of sleep disturbances reported by subjects was determined.

Socio-demographic variables, presence of mental disorders (includes depression, anxiety disorders, somatization, hazardous alcohol use and nicotine dependence), chronic medical illness,

Please cite this article as: Jaisoorya TS, et al, Insomnia in primary care—a study from India, Sleep Health (2017), https://doi.org/10.1016/j.sleh.2017.11.001