Research Article

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Prevalence of Bekhwabi (Insomnia) among the Elderly Patients Attending Nium Hospital, Bangalore, India

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Abstract

Background and objective: Insomnia is far from being a problem of the modern society as it has been affecting human being since beginning of time. The initial references of insomnia, the inability to initiate and/or to maintain asleep, date back to the ancient Greeks. Insomnia is more common among older adults and its prevalence increases with increasing age. Present study was carried out to measure the prevalence of insomnia and its associated factors among the elderly.

Methods: The present study was cross sectional conducted in the hospital of NIUM, Bangalore, in one year duration. A total of 600 elderly patients comprising of 421 males and 179 females were taken in the study. A pretested and semi structured schedule was designed in such a manner that more information regarding demographic profile, insomnia conditions and associated factors could be collected. Main emphasis was given to asking questions about insomnia and its associated factors and morbidity so that final diagnosis could be made i.e. whether patient is suffering from insomnia or not.

Result: The present study revealed 82.17% prevalence of insomnia, 72.44% were in age group of 60 and 84.77% were in age group of above 60, which shows that prevalence increases with increasing age. 80.76% males and 85.47% females were suffering from insomnia, which shows that insomnia is more common among females. Likewise 56.8% of insomnia patients were not doing any type of physical exercise. Diet play an important role in the development of insomnia especially mixed type diet, result shows that 82.35% were on mix type diet. In this study 60.24% having difficulty in falling asleep, 58.21% having difficulty in staying asleep and 49.89% were having early awakening problem.

Interpretation and conclusion: Present study revealed that there is strong relationship between insomnia and old age (non-modifiable factor), it is also revealed that some life style factors, like dietary habits, exercise, occupation etc., have a strong relationship with insomnia in elderly. Thus it can be concluded that modification in life style and in modifiable factors can have positive impact on insomnia in elderly.

Keywords: Unani medicine; Bekhwābī; Insomnia; Prevalence; Elderly

Introduction

Bekhwabi (Insomnia) refers to the difficulty in initiation, maintenance, duration or quality of sleep. People may experience poor concentration, lower productivity and poorer work quality as a result of insomnia [1]. The term insomnia arisen in 1623, it was anglicised as insomnia from Latin word '*insomniae*' means want to sleep composed of 'in' (not) and '*somnus*' (sleep) [2] Insomnia is a widespread health complaint, and the most common of all sleep disorders [3] It is generally explained by a decrease in duration, quality or efficiency of sleep [4]. National Institute of Health Consensus, defined insomnia as difficulty in initiating or maintaining sleep, early morning awakening with an inability to fall back asleep and feeling not rested during daytime after a common period of sleep or non-restorative sleep in the presence of adequate circumstances for sleep [4]. Eminent Unani physicians have described Bekhwabi as sleeplessness and excessive awakening [5-7]. Classical literatures not describe the types of insomnia; however, it has been mentioned in modern books as:

- **Primary Insomnia:** sleeplessness that cannot be attributed to an existing medial, psychiatric or environmental cause, such as drug abuse or medications.
- **Secondary insomnia:** it occurs when symptoms of insomnia arise from a primary medical illness, mental disorders or other sleep disorders [8,9].

The causes of insomnia include use of excessive alcohol at night and other depressant, poor sleep habits, dietary habit, medical condition like arthritis, asthma, sleep apnoea etc. [10-13]. In Unani system of medicine the main cause of *Bekhwabi* (insomnia) is *Yubūsat* (dryness) of brain [7]. Insomnia is the number one sleep disorder; it can affect the quality of life in various ways, such as fatigue, memory impairment, mood disturbance etc. There are many complications of insomnia such as lower performance, slowed reaction time delirium, mental block, depression, anxiety disorder, elevation of heart rate, risk of heart disease, high blood pressure, risk of diabetes and pre-diabetic syndromes, overweight or obesity [14-17]. As rapid expansion in

number of elderly population in India, so there is an urgent need to develop geriatric health care services to manage the insomnia. To make the people aware about the disease, to educate the patients about the preventive measures that are beneficial and helpful in limiting the progress of disease and in reducing the complications of Insomnia and to know the extent of disease burden in the hospital and society, the study "Prevalence of *Bekhwābī* (insomnia) and its associated factors among the elderly patients visiting NIUM Hospital, Bangalore" was conducted.

Materials and Methods

The study was conducted in Tahaffuzi wa Samaji Tib OPD of NIUM Hospital, Bangalore after obtaining ethical clearance from institutional ethics committee (Ethical Clearance No. NIUM/IEC/2010-11/10/TST/02). The present study was a cross sectional of one year duration. Objective of the study was to estimate the prevalence of Bekhwābī (insomnia) and its associated factors among the elderly patients attending NIUM hospital. Sample size was calculated as 489 on the basis of formula $N=4 pq/L^2$ (p=prevalence, q=1–p, L=allowable error), taking the prevalence rate (of hemorrhoids) as 45% [18] and permissible error level as 10%, but 600 patients were taken to increase the level of precision. Elderly patients of either gender with 60 yrs or above age were included in the study. Patients below 60 yrs of age and patients who do not cooperate were excluded. The data were collected from under study population through a pretested and semi-structured schedule, which was designed in such a manner that more information regarding demographic profile, risk factors and morbidity could be collected. Reasons for the study were explained to the patients; prior to interview a written consent was taken. Main emphasis was given to asking questions about *Bekhwābī* (insomnia) and its associated factors, so that the information could be collected about instrumental and basic activities of daily living and on this basis final diagnosis could be made, i.e. whether patient is suffering from *Bekhwābī* or not.

Observations and Results

The observations are shown in Tables 1-3.

Insomnia	No. of Patients	Percentage (%)
Present	493	82.17
Absent	107	17.83
Total	600	100

Table 1: Distribution of patients according to the presence of hemorrhoids (n=416).

Variables		Insomnia present/Total number
Gender	Male	340/421
	Female	153/179
Age group	60 yrs	92/127
	61-70 yrs	318/371
	71-80 yrs	79/97
	81-90 yrs	04-May
Ethnicity	Muslim	243/294

	Hindu	244/300
	Christian	06-Jun
Habitat	Rural	41/47
	Urban	452/553
Family type	Nuclear	262/318
	Joint	231/282
Dietary habits	Vegetarian	87/105
	Mixed	406/495
Exercise profile	Moderate to high	213/258
	Sedentary	280/342

Table 2: Baseline characteristics of study population.

Symptoms	No. of Insomnia Patients (n=493)	Percentage (%)
DFA (Difficulty in falling asleep)	26	5.27
DSA (Difficulty staying asleep)	22	4.46
EA (Early awakening)	9	1.82
FSAA (Feeling sleepy after early awakening)	61	12.37
DFA+DSA	14	2.83
DFA+EA	16	3.24
DFA+FSAA	36	7.3
DSA+EA	19	3.85
DSA+FSAA	25	5.07
DSA+SA (Taking sleeping aids)	1	0.2
EA+FSAA	22	4.46
EA+SA	1	0.2
DFA+DSA+EA	20	4.05
DFA+DSA+FSAA	46	9.3
DFA+DSA+SA	5	1.01
DFA+FSAA+SA	5	1.01
DSA+EA+FSAA	30	6.08
DSA+FSAA+SA	2	0.4
DFA+EA+FSAA	28	5.67
DFA+DSA+EA+FSAA	71	14.4
DFA+DSA+EA+SA	4	0.81
DFA+DSA+FSAA+SA	4	0.81
DFA+EA+FSAA+SA	2	0.4
DSA+EA+FSAA+SA	4	0.81

DFA+DSA+EA+FSAA+SA	20	4.05
Total	493	100

Table 3: Distribution of patients according to the symptoms.

Discussion

As shown in Table 1 out of total subjects studied, 82.17% (493) were diagnosed as of insomnia. According to a survey in US among the people of age group 65-79 yrs, it was found that insomnia affected 45% of them during the course of one year [18]. Further study done by Bhattacharya et al. in Delhi among 1240 elderly subjects the prevalence of insomnia was found to be 59% [19]. In our study the reason for higher prevalence of insomnia than the previously conducted studies may be that the present study was hospital based and the patients who visit the hospital presented with different medical conditions which in itself increase the chance of being insomniac.

As shown in Table 2, Sex wise distribution of the total number of included patients revealed that 70.16% (421) were males and 29.84% (179) were females Out of 421 males 80.76% (340) were suffering from insomnia and out of 179 females 85.47% (153) were suffering from insomnia. It is justified from most of the epidemiological studies and eminent scholars writings that insomnia is more common among females than males [20-24]. Furthermore, one study conducted by Maggi et al. among the people over 65 yrs of age, the prevalence of insomnia was reported to be 36% in men and 54% in women [25]. The study data clearly shows that insomnia is more common in females which are in accordance with our results.

As per age group, 21.17% (127) belonged to age group of 60 yrs and 78.83% (473) were above 60 yrs of age. Among them insomnia was found in 72.44% (92) and in 84.77% (401) age group of 60 and above 60 yrs respectively. It is revealed from different studies that prevalence of insomnia increases as the age advances [18,20,26]. The present data clearly justifies by the above mentioned studies.

As per religion, among the total number of included patients 50% (300) were Hindus, 49% (299) were Muslims and only 1% (6) were Christians. Insomnia was found in 49.50% (244) Hindus, in 49.30% (243) Muslims and only in 1.2% (6) Christians. Hindu and Muslim patients were approximately of the same percentage.

Among the total number of included subjects 7.83% (47) and 92.17% (553) were from rural and urban areas respectively. Insomnia was found in 8.32% (141) and 91.68% (452) who belonged to rural and urban areas respectively. This is highly contrary to the data of rural-urban distribution of India. As per 2011 census of India, more than 2/3rd (68.84%) of Indian population is living in rural areas, while less than 1/3rd (31.16%) population is living in urban areas [27]. The reason for this huge difference may be that the present study was hospital based, the hospital of NIUM is situated in the urban area of Bangalore city and due to the sound transport facility it is easily accessible to the urban patients, on the other hand due to transport and other problems, the attendance of rural areas' patients is low, that is why the attendance of the urban patients in this hospital was greater than the rural.

According to the family type, 53% (318) and 47% (282) belonged to nuclear and joint family respectively. Among these, insomnia was found in 53.14% (262) who belonged to nuclear family and in 46.86% (231) who belonged to joint family. Family type base prevalence study

on insomnia is not available. But different studies shows that subjects who continue living as single, divorced, widowed have more chances of developing insomnia [20,28,29]. On this ground it can be said that subjects who live in nuclear families have more chances of developing insomnia than those who live in joint family.

Among the total number of included patients 17.5% (105) were vegetarian and 82.5% (495) were on mixed type diet, similarly among the insomnia patients 17.65% (87) were vegetarian and 82.35% (406) were on mixed type diet. In Unani system of medicine dietary factors are believed to play an important role in the causation and prognosis of *Bekhwābī*. Hotness and dryness producing diets such as tea, coffee, *Garm Masālajāt*, red chillies, salty items and flatulent meals are all responsible for Bekhwābī [30-32]. Further, most of the animal origin foods are hot and dry in *Mizaj* and the foods having such *Mizāj* produces *Ṣafrāwī Mādda* which is *Ḥārr Yābis* [33,34]. It is clearly stated by Unani physicians that *Yabūsat* is the main cause of insomnia [35]. The people who take such foods along with vegetables which are flatulent are prone to this. So in this perspective we can say that insomnia is more common in those people who are on mixed diet than who are pure vegetarians.

Included patients were asked about their exercise profile in dichotomous way either they were performing the exercise or not. In our study out of 493 insomnia subjects 56.8% (280) lead a sedentary life and 43.2% (213) were moderately to highly active. Study conducted by Adetola et al. shows the inverse relationship between physical activity and insomnia [36]. It means that prevalence of insomnia was higher in subjects who lead a sedentary life with reduced physical activity which is strongly in accordance with our study.

As shown in Table 3, among the insomnia patients 493, having difficulty in falling asleep 5.27% (26), difficulty in staying asleep 4.46% (22), with early awakening were 1.82% (09), feeling sleepy after early awakening 12.37% (61), having difficulty falling asleep with difficulty staying asleep 2.83% (14), difficulty falling asleep and early awakening 3.24% (16), difficulty falling asleep with feeling sleepy after early awakening 7.30% (36), having difficulty staying asleep and early awakening 3.85% (19), difficulty staying asleep and feeling sleepy after early awakening 5.07% (25), having difficulty staying asleep with taking sleeping aids 0.20% (1), having early awakening and feeling sleepy after early awakening 4.46% (22), having early awakening and taking sleeping aids 0.20% (1), having difficulty falling asleep and early awakening 4.05% (20), having difficulty falling asleep and difficulty staying asleep feeling sleepy after early awakening 9.3% (46), having difficulty falling asleep with difficulty staying asleep and taking sleeping aids 1.01% (5), having difficulty falling asleep and feeling sleepy after early awakening with taking sleeping aids 1.01% (5), having difficulty staying asleep and early awakening with feeling sleepy after early awakening 6.08% (30), having difficulty staying asleep and feeling sleepy after early awakening with taking sleeping aids 0.40% (2), having difficulty falling asleep and early awakening along with feeling sleepy after early awakening 5.67% (28), having difficulty falling asleep and difficulty staying asleep+early awakening+feeling sleepy after early awakening 14.4% (71), having difficulty falling asleep and difficulty staying asleep and early awakening with taking sleeping aids 0.81% (4), having difficulty falling asleep with difficulty staying asleep and feeling sleepy after early awakening with taking sleeping aids 0.81% (4), having difficulty falling asleep with early awakening and feeling sleepy after early awakening+taking sleeping aids 0.40% (2), having difficulty staying asleep and early awakening with feeling sleepy after early awakening+taking sleeping aids 0.81% (4), having difficulty

falling asleep and difficulty staying asleep and early awakening with feeling sleepy after early awakening+taking sleeping aids 4.05% (20). National Institute of Health Consensus defines insomnia as, difficulty in falling asleep, difficulty in staying asleep, early morning awakening with an inability to fall back asleep [4]. It is mentioned by Susan et al. that in elderly patients the commonest symptoms are difficulty in maintaining or staying asleep and early morning awakening [14]. In the present study, these two (above mentioned) symptoms were also found in most of the included individuals. This is further strengthened by saying of *Muḥammad Ḥasan Qarshī*, he mentioned that patient who reports difficulty in falling asleep is the main symptom of *Bekhwābī* [37] likewise *Ghulām Jīlānī* mentioned that difficulty in falling asleep and difficulty in maintaining asleep are the main symptoms of *Bekhwābī* [38].

Conclusion

In the present study we observe that insomnia is a highly prevalent disease which imposes severe burden both economically and socially on the society. The study reveals that modifiable risk factors (lifestyle, dietary habits, addictive habits, occupation, etc.) are more common factors for the development of insomnia than the non-modifiable risk factors (age, sex etc.). So the patients were educated to adopt healthy lifestyles.

It is suggested that more study on a larger sample should be designed and conducted to trace the definite association of these modifiable and non-modifiable risk factors of insomnia so that effective intervention can be provided to the suffering community.

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