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ORIGINAL ARTICLE

Evaluation of sleep related breathing problems and sleep disturbances among health related employees at Fayoum University Hospitals



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KEYWORDS

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Abstract Sleep plays a role in normal metabolism and immunity. Short sleep duration and circadian misalignment are hypothesized to causally contribute to health problems including obesity, diabetes, metabolic syndrome, heart disease, mood disorders, cognitive impairment and excess health care use. Sleep and breathing are tightly linked. Sleep related breathing disorders (SBD) are quite common in the general population. Snoring and obstructive sleep apnea (OSA) are the main SBD for which children and adults are now-a days referred to sleep disorder centers. Accurate screening for sleep problems is essential. Economic estimates demonstrate that sleep disorders are associated with large financial and non-financial costs. The greatest financial costs appear to be non-medical costs related to loss of productivity and accident risk.

The aim of this study: The aim of this study was to screen and determine the prevalence of sleep breathing problems and sleep disturbances among health related employees and workers at Fayoum University hospitals.

Methods: Data were collected from 159 subjects who were employed as a health care worker at Fayoum University hospitals. All patients completed self-administered screening and Berlin questionnaires.

Results: The prevalence of sleep disturbance was 18 (11.3%). Daytime sleep problems were 16.3 ± 5.02 and nocturnal sleep problems were 12.5 ± 4.92 . Insomnia was reported in 34%. Snoring was reported in 12.6%. Sleep dissatisfaction was reported in 32.1%.

Abbreviations: OSA, obstructive sleep apnea; SDB, sleep disordered breathing; PSG, polysomnography; CPAP, continuous positive airway pressure; DSM, diagnostic and statistical manual of mental disorders.

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Conclusion: Our findings indicate that the daytime somnolence is common among health care workers followed by nocturnal sleep problems. Urbanization and large scale of industrialization can explain the incidence of sleep problems among rural living.

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Introduction

Sleep duration and quality participate in normal metabolism, function of immune system, mood, and cognitive functioning [1]. Short duration of sleep and circadian misalignment are hypothesized to contribute to many problems of health including overweight, diabetes, metabolic syndrome, cardiac disease, mood disorders, cognitive dysfunction, and accidents. Sleep troubles is a common and often underdiagnosed complaint in general medical practice, which can remain over years and has been shown to lead to health problems, greater functional impairment, loss of productivity, and excess use of health care [2]. Recently, it has been identified that the regulation of glucose homeostasis and control of appetite are related to sleep [3]. Sleep and breathing are closely linked. Sleep in humans is produced and regulated by specialized central networks of neurons. Central and peripheral chemo- and mechanoreceptors control normal breathing that are responsible for the reduction in the slope of the ventilator responses to hypoxia and hypercapnia during sleep as compared to wakefulness. Sleep-related breathing disorders (SBD) are common in the general population. Nowadays snoring and obstructive sleep apnea (OSA) are the main SBD for which children and adults are referred to sleep disorder centers [4]. OSA is characterized by the occurrence during sleep of repeated episodes of partial or complete obstruction of the upper airways causing intermittent oxygen desaturations and arousals during sleep as regards the pathophysiological point of view [5]. As a part of OSA chronic exposure to intermittent hypoxia induced impaired glucose tolerance and intermittent hypoxia-induced sympathetic nervous system initiation, production of reactive oxygen species and the production of a whole-body pro-inflammatory state [3].

Obstructive sleep apnea (OSA) is a common disorder that affects at least 2–4% of the adult population [6].

Diagnosis of OSA is done by polysomnography (PSG) [7], however OSA can be effectively treated but it is not easy largely due to accessibility problems. Accurate sleep problem screening is essential which involves multiple screening questionnaires that are based on clinical characteristics that are easy to apply in patients suspected of having sleep disorders [8,9]. Therefore, a screening tool is important to classify patients according to their clinical symptoms, physical examinations, and risk factors to observe high risk patients and their need for PSG and/or further treatment and low risk patients who may not need PSG [10]. Economic estimates show that sleep disorders are associated with large financial and non-financial costs. Given that the greatest financial costs seem to be non-medical costs related to loss of productivity and accident risk [11].

Modern society, identified by extensive use of electricity, demand for high performance at work, shift work, prolonged

commute times and activities of multiple leisure time, has much changed human sleep patterns [3].

Purpose

The aim of this study was to screen and determine the prevalence of sleep related breathing problems and sleep disturbances among health related employees and workers at Fayoum University hospitals.

Methods

Study design

The study was a descriptive cross-sectional, conducted at Fayoum University hospitals. This study was reviewed and approved by the ethics committee of the faculty of medicine, Fayoum University. A verbal consent was obtained from all participants before filling the questionnaire.

Subjects

Data were collected from adult subjects who were employed as health care employees and workers at Fayoum University hospitals for the evaluation of suspected sleep related breathing problems and sleep disturbances between January 2013 and February 2014. Criteria for inclusion were as follows: age over 18 years and completion of the sleep disorder screening questionnaires. Patients were excluded if they had received treatment for OSA or if they had an active psychiatric disease.

Screening questionnaires

All patients completed the self-administered screening questionnaire and Berlin clinical questionnaire. Self-administered screening questionnaire was designed to assess the sleep quality of subjects according to DSM IV classification (diagnostic and statistical manual of mental disorders, 4th Edition) of sleep disorders [12]. A self-administered questionnaire was used to assess the presence of snoring, sleep apnea, sleep complaints (satisfaction, quantity, and insomnia). It includes 29 questions organized into three categories. This questionnaire was adapted from Hammad et al. [13]. The first category includes five items on general sleep, the second category includes ten items on daytime sleepiness, and the third category includes 12 items on nocturnal sleep disorders.

Subjects can be classified into 5 levels: (1) less than moderate < 52 (no sleep problems), (2) moderate 52–60 (sleep problems within normal range), (3) more than moderate 61–75 (sleep problems more than moderate), (4) acute 76–90 (acute sleep problems) and (5) severe and chronic sleep 91–104 (severe

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