

# Does Sleep Matter? Analysing the sleep problems and associated factors in six low and middle-income countries

## Introduction:

Sleep habits are multifaceted and result from a complex interplay between genetics, environment and social factors as well as the presence of comorbidities (Hale, 2005; Kronholm et al, 2008; Ferrie et al, 2011). Insomnia is a general clinical term that refers to the difficulty in initiating or maintaining sleep, it is the most common sleep disorder. Both sleep duration and quality tend to vary in populations as a function of sociodemographic and socioeconomic factors (Grander et al, 2010; Patel et al, 2010; Arber et al,2009; Chenn ,2005; Geroldi et al, 1996).

This study makes an attempt to understand the association between sociodemographic and socioeconomic correlates and sleep problems which are determined by insomnia, sleep duration and sleep quality among adults.

## Data Sources:

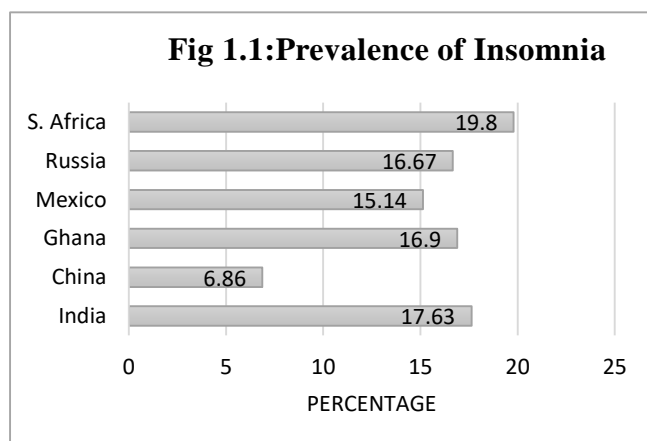
This study is based on WHO Study on global Ageing and adult health (SAGE)-wave-1 (2007-10) data. It is a longitudinal survey collecting data on adults aged 50 years and older, plus a smaller comparison sample of adults aged 18–49 years, covering six LIMIC (low and middle-income countries) including China (14813), Ghana (5110), India (11230), Mexico (2756), Russian Federation (4355) and South Africa (4223).

## Methodology:

Bivariate analysis was used to understand the prevalence of sleep problems. Logistic regression was used to examine the association of socioeconomic status and insomnia. Ordered logistic regression is used to analyse the impact of poor sleep quality on the adults by various background characteristics. Multinomial logistic regression was used to understand the relationship between sleep duration and socioeconomic and sociodemographic characteristics.

## Results:

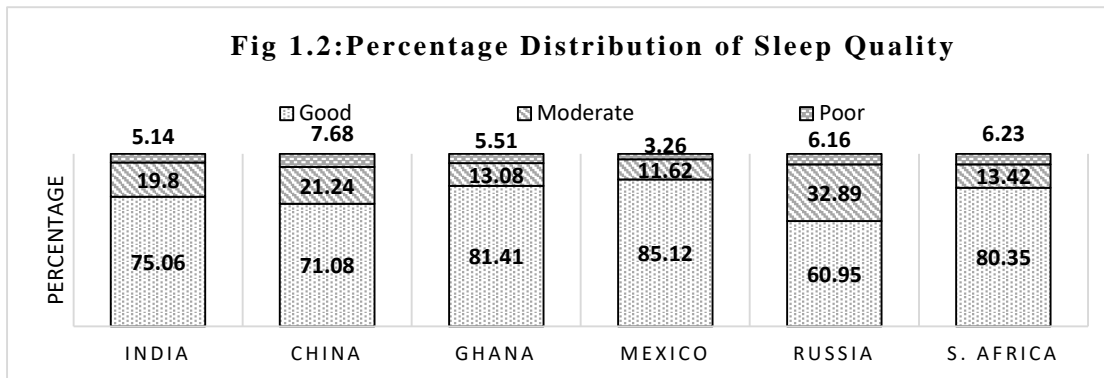
Insomnia is considered to be a serious sleep problem. Fig. 1.1 below shows the overall country wise prevalence of insomnia.



The prevalence of insomnia is highest in South Africa (19.8%) while lowest in China (6.8%). It was observed that the prevalence of insomnia increases with the growing age. It is highest in the 70+ age group of older adults in all the countries. In comparison with males, females are more likely to report insomnia in all the countries except South Africa. People living in rural areas are more likely to

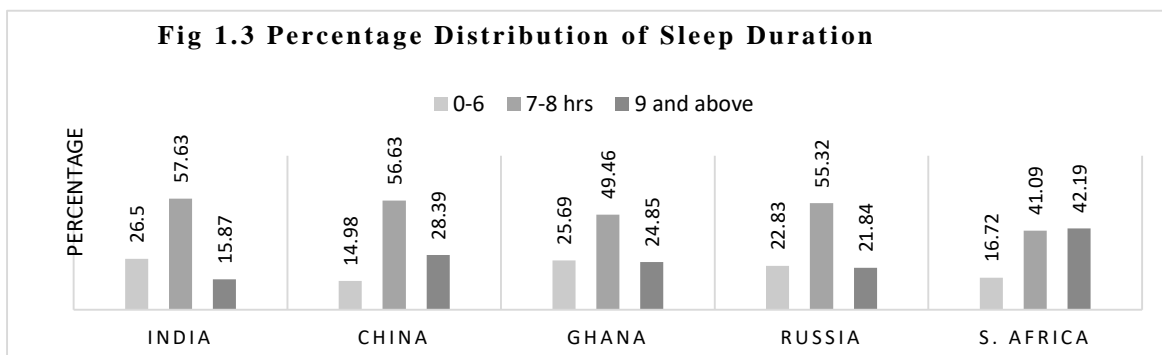
report insomnia in India, China and Ghana in comparison to the urban areas. In India, those who are widowed, divorced or separated are 2.05 times more likely to report insomnia when compared with the never married while it is 1.52 times in South Africa. The likelihood of reporting of insomnia decreases with the years of education.

Fig1.2. Shows the percentage distribution of sleep quality in SAGE countries. It can be observed that China (7.68%) has the highest percentage of adults with poor sleep quality followed by Russia (6.16%) and South Africa (6.23%) while it was lowest in Mexico (3.26%).



China shows the higher prevalence of poor quality of sleep among all the countries while it is found to be lowest in Mexico. It can be seen in case of India, when age increases from 18-49 to 50-59, the odds of poor quality of sleep vs. combined good and moderate sleep quality are 1.5 times higher, given other variables held constant. In case of India, China and Russia for widowed, divorced and separated individuals, the odds of poor sleep quality vs. combined moderate and good sleep quality are 1.6 times, 1.7 times and 1.5 times respectively higher as compared to the reference category. Working status and sleep quality shows significant relationship across all the countries. Income quintile has significant impact on sleep quality in India, China and Ghana. As income increases people are less likely to report poor quality of sleep.

Fig. 1.3 Illustrates the percentage distribution of sleep duration in SAGE countries. It is categorised into three categories as 0-6 hours which signifies short sleep; 7-8 hours which means ideal sleep duration and 9 hours and above which means long sleep duration. Both long and short sleep duration are considered as sleep disorders. It is observed that in South Africa 42.19 % of adults have long sleep duration which is highest among all the countries while it is lowest in India (15.87%). Short sleep duration was highest in India (26.5%) while lowest in China (14.98%).



The likelihood of reporting of short sleep duration increases with age. Females are less likely to report short sleep duration as compared to males in India (RRR=0.75) and African countries. The likelihood of reporting of long sleep duration is highest among the oldest adults group in comparison with 18-49 age group in China (RRR=1.33), Ghana (RRR=1.51) and South Africa (RRR=1.71). The odds of reporting of long sleep duration declines with the increase in years of schooling in India, China and South Africa.

### **Summary and conclusion:**

The prevalence of sleep problems varies across different countries. insomnia was more prevalent among older adults, females and among single, widowed, divorced or separated adults. This may be because of change in living arrangement, life style, other physical or mental conditions, presence of disease, death of the spouse, emotional stress and financial burden. The prevalence of poor quality of sleep is also high among older adults across all the countries. The possible reasons could be this that older adults face difficulties in initiating and maintaining sleep. The study concludes that the prevalence of short and long sleep duration increases with ageing population. Longer sleep duration was mostly reported by females. Among women, it may be because of postmenopausal changes in hormone or lack of emotional support. Long sleep duration may simply reflect the presence of sleep disorders or other illness. Hence, the study shows that the disadvantaged socioeconomic groups is associated with sleep problems.

### **References:**

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