

PREVALENCE OF OBSTRUCTIVE SLEEP APNEA SYMPTOMS AND EXCESSIVE DAYTIME SLEEPINESS AMONG COMMERCIAL BUS DRIVERS IN FIRST DISTRICT OF LAGUNA

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ABSTRACT

Research supports that obstructive sleep apnea (OSA) is a significant cause of road traffic accidents resulting in two to sevenfold increased risk. The lack of screening for OSA and excessive daytime sleepiness (EDS) as part of the licensing requirements for commercial bus drivers in the Philippines prompted the researchers to determine the prevalence of OSA and EDS among this specific population. Cross-sectional study of 30 commercial bus drivers was performed. The driver's demographic and clinical profile, sleeping habits, occupational characteristics, and data needed for STOP BANG, Berlin, and Adjusted Neck Circumference (ANC) Scoring questionnaires to evaluate driver's risk of having OSA and data for Epworth Sleepiness Scale to assess the driver's probability of experiencing EDS were gathered and analyzed. Statistical analyses were made through the latest version of Minitab® Statistical Software. The profile of Filipino commercial bus drivers was that of a middle-aged male (mean age of 43.3 years), who was able to reach secondary level of education (63.3%), with propensity to be overweight (BMI=24.96 kg/m²). Respondents were likely non-smokers (73.3%), moderate to heavy alcohol drinkers (83.3%), and moderate to heavy caffeine drinkers (93.3%) The most common comorbidity seen in the sampled population was hypertension. A small number of respondents admitted to a history of illicit drug use (13.3%). Respondents compensated their multiple awakening during sleep (80%) with frequent daily naps. Respondents have been engaged in this occupation for 12.6 years, have driven almost daily, with each trip lasting 13.3 hours, and covering 303.80 ± 55.12 kilometers daily. Most of the respondents have been involved in traffic accidents (43%), almost one-third of which is sleeping-related (13.3%). The prevalence of OSA symptoms (55.75%) and EDS (53%) were higher than in the general population. Increasing the number of days of the driver on the roads increased his propensity to encounter sleep-related accidents.

INTRODUCTION

Due to prolonged hours of driving public-utility buses, irregular sleeping patterns, and possible comorbidities, an average commercial bus driver may face the risk of developing Obstructive Sleep Apnea (OSA) symptoms and Excessive Daytime Sleepiness (EDS) which may both pose hazard on public road users.

OSA

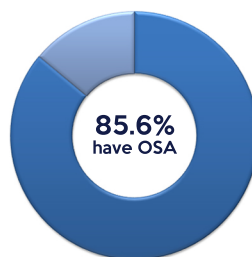
or **OBSTRUCTIVE SLEEP APNEA** is a condition characterized by repetitive obstruction of the upper airway often resulting in oxygen desaturation and arousals from sleep.

EDS

or **EXCESSIVE DAYTIME SLEEPINESS** is the the behavior of falling asleep, including difficulty maintaining alertness or wakefulness and unintentionally falling asleep.

Objectives:

1. to prove that there is a high prevalence rate of OSA and EDS among respondents
2. to include screening for OSA and EDS on the licensing procedure of LTO
3. for bus companies to adopt a healthy lifestyle program for their drivers which includes strict monitoring of their sleep hygiene
4. call for action and support of the government in the inclusion of sleep hygiene and sleep health check up in the existing benefits of PhilHealth Inc.



In 2015, Filipino commercial bus drivers were surveyed using Epworth Sleepiness Scale. **52.5%** admitted they have experienced EDS **46.3%** have combined EDS + OSA

Significance of the Study

- provides more productivity for the bus drivers
- ensures commuters and public safety
- for bus companies to have less risk in sleep-related accidents, ensure quality service to their customers, prevent expenses on accident compensations, and have more productive and healthier bus drivers
- for government and transportation sector to provide safer roads to all public commuters and users, and reduce the number of sleep related accidents
- for Respiratory Therapists in paving way to the importance of sleep hygiene and RTs are one of the health practitioners knowledgeable and skilled to perform sleep diagnostic tests

METHODOLOGY

PROFILING

Identify the demographic and clinical profile of the respondents, their sleeping habits, and occupational characteristics.



USE OF DIAGNOSTIC TOOLS

Three (3) diagnostic tools for OSA
 -STOP BANG Questionnaire
 -Berlin Questionnaire
 -Adjusted Neck Circumference Scoring (ANCS)



HYPOTHESIS TESTING

Application of statistical tools
 -Frequency and percentage distribution
 -Weighted mean formula



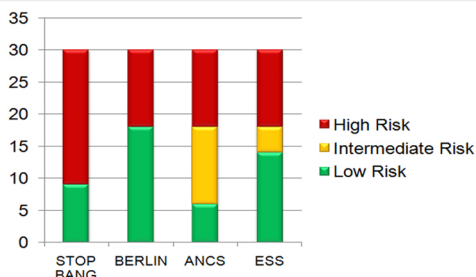
RECOMMENDATION

Presentation of results to the high risk respondents and to their respective bus companies for proper intervention, lifestyle, and schedule adjustments.

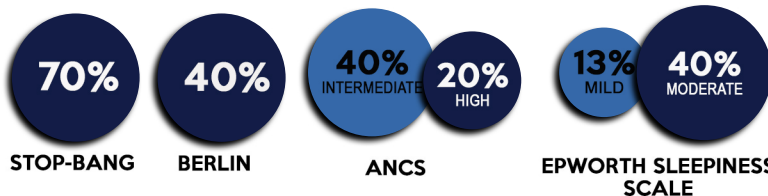
One (1) diagnostic tool for EDS
 -Epworth Sleepiness Scale

Hypothesis Testing
 -Proportion z test

RESULTS AND DISCUSSION



The proportion respondents manifesting **HIGH RISK** for OSA symptoms and EDS for each diagnostic tool used are as follows:



In all four accurate diagnostic tools, the results interpreted a high prevalence rate of commercial bus drivers are at risk of experiencing OSA and EDS.

CONCLUSION AND RECOMMENDATIONS

There is a high prevalence of Obstructive Sleep Apnea Symptoms (55.75%) and Excessive Daytime Sleepiness (53%) among commercial bus drivers in First District of Laguna. Bus drivers experiencing these medical conditions had increased risk of being involved in an accident. Increasing the number of days of the driver on the roads increased his propensity to encounter sleep-related accidents.

- further review of the existing Land Transportation Office certification for commercial bus drivers
- diagnostic tools such as questionnaires used in this research should be included as screening for those who are potentially with OSA and EDS
- commercial bus drivers found to be at high risk should be tested further, preferably with diagnostic sleep studies

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