



A STUDY TO ASSESS THE KNOWLEDGE REGARDING ERGONOMIC HAZARDS AMONG AUTO DRIVERS IN PERINTHALMANNA MUNICIPALITY, WITH A VIEW TO DEVELOP AN INFORMATION BOOKLET

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Abstract:

The present study was conducted to assess the knowledge regarding ergonomic hazards among auto drivers in Perinthalmanna municipality, with a view to develop an information booklet. **Objectives:** Assess the knowledge regarding ergonomic hazards among auto drivers, determine the association between the knowledge on ergonomic hazards with selected demographic variables. **Methodology:** Quantitative approach was used for the study and non-experimental descriptive survey design was selected. The study was conducted in selected auto stands in Perinthalmanna, municipality using non-probability convenient sampling technique. In this study the investigators has used a structured questionnaire to assessing the knowledge regarding ergonomic hazards in auto drivers. **Analysis:** data were analyzed using descriptive and inferential statistics. **Conclusion:** the study concluded that there is a significant association between knowledge regarding ergonomic hazards and socio demographic variables such as education and daily driving hours of drivers. Among 100 samples 49% of auto drivers have average knowledge, 44 percentage of auto drivers have poor knowledge and 7 percentage have good knowledge and demographic variables such as education of auto drivers and daily driving hours of auto drivers have association with knowledge level.

Key words: ergonomic hazards, auto drivers.

BACKGROUND OF THE STUDY

Ergonomic hazards are any factor in the workplace that may cause musculoskeletal injury or any other health issues. The risk of injury is often magnified when multiple factors are present. Ergonomic risk factors are workplace situations that cause wear and tear on the body and can cause injury. These include repetition, awkward posture, forceful motion, stationary position, direct pressure, vibration, extreme temperature, noise, and work stress. Drivers are exposed to a number of health problems as a direct result of the posture adopted in driving. Sitting in the driving position exerts considerable forces on the spine and can cause a number of problems with the musculoskeletal system like backaches, neck problems, pulled muscles, and general stiffness. A study on low back trouble among urban bus drivers in Denmark demonstrated that 57% of the 2045 bus drivers studied, suffered from this health problems and Psychological problems (fatigue, tension, mental overload) cancers, gastro intestinal, sleeping problems, and musculo-skeletal problems especially in the upper and lower part of the back, neck and shoulders.

The background of this study is rooted in the critical intersection of urban transportation and occupational health, specifically focusing on auto drivers. As essential contributors to the functionality of urban areas, auto drivers navigate complex traffic scenarios, often for prolonged periods. Despite their significant role, the ergonomic challenges inherent to their profession have received limited attention in research literature.

Existing ergonomic studies predominantly focus on traditional office environments, leaving a notable gap in understanding the unique demands and hazards faced by auto drivers. Prolonged periods of driving, exposure to vibrational forces, inadequate seating arrangements, and psychological stressors are potential contributors to ergonomic issues in this occupational group. Recognizing these challenges is imperative, as they not only impact the well-being of auto drivers but also have potential implications for road safety and the overall efficiency of urban transportation systems. This study aims to address this gap by systematically examining the ergonomic hazards faced by auto drivers. By conducting a comprehensive analysis of both the physical and psychological aspects of their work environment, the research intends to provide valuable insights that can inform interventions, policies, and design improvements. The ultimate goal is to contribute to the enhancement of the overall working conditions, health, and safety of auto drivers, thereby promoting a more sustainable and efficient urban transportation system.

The genesis of this research is motivated by a dual commitment to improving both the well-being of auto drivers and the efficiency of urban transportation. Auto drivers, often the unsung heroes of urban mobility, navigate a myriad of challenges daily, from congested traffic to long working hours. Despite their integral role, the ergonomic implications of their profession have been understudied. In a world where cities are expanding and traffic congestion is on the rise, understanding the ergonomic hazards faced by auto drivers becomes paramount. This study recognizes the interconnectedness of occupational health and the broader urban ecosystem. The physical toll of driving, coupled with the psychological stressors unique to their profession, necessitates a focused exploration.

As cities evolve, embracing technological advancements and alternative transportation modes, it becomes imperative to ensure that the backbone of traditional urban transport, represented by auto drivers, is not left behind. By unraveling the ergonomic intricacies of their work environment, this research aspires to contribute actionable insights that extend beyond academia. The findings aim to inform policymakers, urban planners, and vehicle designers, fostering a holistic approach to improve both the occupational conditions of auto drivers and the overall efficacy of urban transportation systems. Previous research has explored the ergonomic challenges in various transportation occupations, including truck drivers and taxi drivers. These studies have shed light on the physical and mental stressors associated with prolonged periods of driving, offering insights into the importance of ergonomic considerations for professionals who spend substantial time behind the wheel.

Investigations into the occupational health of individuals working in urban settings have highlighted the unique challenges posed by crowded and fast-paced environments. Such studies often emphasize the need for tailored interventions to address the specific demands of urban occupations, recognizing the potential impact on both physical and mental well-being. Research into the effects of vehicle-induced vibrations on driver health has been conducted, particularly in the context of long-haul trucking. These studies delve into the physiological responses to vibrations and their potential contribution to musculoskeletal disorders, providing valuable insights into a specific aspect of ergonomic concern for professional drivers.

The psychological aspects of occupational health, including stress, job satisfaction, and mental well-being, have been explored in diverse professions. Extending this research to the context of auto drivers can provide a comprehensive understanding of how psychosocial factors may interact with the physical aspects of their work, influencing overall occupational health. By synthesizing findings from these related studies, the current research aims to build upon existing knowledge and offer a nuanced exploration of the ergonomic hazards specific to auto drivers. The goal is to contribute novel insights that address the unique challenges faced by this occupational group, fostering a more comprehensive understanding of the factors influencing their health, safety, and job satisfaction. **NEED AND SIGNIFICANCE:** Auto drivers face unique ergonomic challenges that have not received adequate attention in occupational health research. Addressing this gap is essential to ensure that the occupational health disparities experienced by auto drivers are recognized and mitigated. The well-being of auto drivers directly influences their productivity and job satisfaction. By identifying and addressing ergonomic hazards, the research seeks to enhance the working conditions for auto drivers, promoting not only their health but also their overall job performance and job retention.

Ergonomic hazards affecting auto drivers can have ramifications for public safety. Fatigue, discomfort, and stress contribute to potential lapses in attention and reaction times, impacting road safety. Investigating and mitigating these hazards aligns with broader efforts to improve transportation safety. Auto drivers play a pivotal role in urban mobility. An understanding of the ergonomic challenges they face is crucial for optimizing the efficiency of urban transportation systems. Improving the conditions for auto drivers contributes to a smoother, more reliable, and sustainable urban mobility landscape. Research findings can serve as a basis for developing evidence-based policies and regulations that address the specific needs of auto drivers. This includes considerations for working hours, breaks, and ergonomic standards within the transportation industry, fostering a regulatory environment that prioritizes driver well-being.

As transportation technology evolves, insights from this research can inform the design of vehicles and technologies that prioritize the ergonomic needs of auto drivers. Innovations in vehicle design, seating arrangements, and driver-assistance systems can contribute to a more comfortable and safer driving experience. A focus on the ergonomic well-being of auto drivers aligns with a human-centric approach to urban planning. Recognizing the needs of those who form the backbone of urban transportation contributes to the creation of cities that prioritize the health and welfare of all inhabitants. The social and economic implications of improved working conditions for auto drivers extend beyond individual well-being. A healthier and more satisfied workforce can have positive effects on community well-being, economic productivity, and overall societal resilience.

In summary, the need and significance of this research lie in its potential to address a critical gap in understanding the occupational health of auto drivers. By doing so, it aims to contribute to improved individual well-being, enhanced transportation safety, and the overall efficiency and sustainability of urban mobility systems.

This research is of utmost importance due to the imperative necessity to tackle the frequently disregarded ergonomic hurdles encountered by automobile drivers, a workforce that plays a vital role in urban transportation systems. The significance of this investigation lies in the distinctive disparities in occupational health experienced by automobile drivers, who maneuver through intricate traffic environments for prolonged durations. By examining and comprehending the specific ergonomic risks associated with their profession, this study strives to

contribute to a more all-encompassing collection of research on occupational health. The enhancement of the working conditions for automobile drivers has direct implications on their well-being and job contentment, with potential positive ramifications on the quality of service provided to commuters. Furthermore, this study acknowledges the broader impact on road safety, as driver comfort and attentiveness are inherently linked to the prevention of accidents. The effectiveness of urban transportation systems hinges on the optimal performance of automobile drivers, thus rendering it crucial to identify and alleviate ergonomic challenges. Beyond individual well-being, the results of this study can inform evidence-based policies and interventions in design, promoting a safer and more supportive work environment. By embracing a human-centric approach to urban development, this research not only addresses the immediate needs of automobile drivers but also contributes to a more just and sustainable urban landscape with far-reaching social and economic implications.

Review of literature:

A cross-sectional study was conducted to assess the Knowledge, Attitudes, and Practices regarding Ergonomic Hazards among Healthcare Workers in a Saudi Government Hospital which the participants were interviewed to complete a validated four-section questionnaire (demographic data, knowledge, attitudes, and practice information related to ergonomics). The questionnaire was newly self-developed based on a literature review and was pilot tested after development. This study included 273 health care workers. The findings of the study revealed that their average knowledge score regarding ergonomics was 2.6, or “fair to good.” Overall, the participants reported good attitude scores, with a total average score of 1 and 2, or “agree to strongly agree.” The study concluded that appropriate ergonomics practices were often not implemented, as the average practice score was 1 to 2, or “always to sometimes engaging in bad practice.”

A cross-sectional study was conducted to assess the risk of lower back pain using Nordic musculoskeletal questionnaire among 368 professional bus drivers. Multivariable logistic regression analysis was used to identify the factors associate. In the last month, 127 (34.51%) participants reported experiencing pain or discomfort in the lower backside. Multivariable logistic regression analysis showed that age of more than 40 years (adjusted odds ratio (AOR): 2.07, 95% confidence interval (CI): 1.14 to 3.75), the income of more than 15,000 BDT per month (AOR: 1.91, 95% CI: 1.11 to 3.26), work duration more than ten years (AOR: 2.53, 95% CI: 1.12 to 5.70), working more than 15 days per month (AOR: 1.93, 95% CI: 1.02 to 3.65), working more than 10 h per day (AOR: 2.46, 95% CI: 1.05 to 5.75), poor condition of the driving seat (AOR: 1.80, 95% CI: 1.08 to 3.02), current smoking habit (AOR: 9.71, 95% CI: 1.25 to 75.15), illicit substances use (AOR: 1.97, 95% CI: 1.11 to 3.48), and four hours or less sleeping time per day (AOR: 1.83, 95% CI: 1.09 to 3.06) were positively associated with LBP.

A comparative study was conducted on musculoskeletal disorders and whole body vibration among auto drivers in North India. This study included four models of auto rickshaws for assessment of whole body vibration exposure with different road conditions and the number of passengers boarded and its association with musculoskeletal complaints. Whole body vibration exposure was measured using SVAN 106 tri-axial accelerometer and SVANPC+ software. A comprehensive questionnaire was devised and used for the subjective assessment of musculoskeletal complaints. The data were analyzed using analysis of variance and Chi-Square test to check the variability and association of whole body vibration exposure and musculoskeletal disorders for all the models of auto rickshaws. The result of the study showed that there is a significant dependency of the magnitude of whole body vibration exposure on the road conditions and a number of passengers. Also, there is a significant influence (p value < 0.05) of whole body vibration exposure due to driving experience and age of auto rickshaw drivers on musculoskeletal complaints, low back pain is found more prominent factor.

Statement of the problem:

A study to assess the knowledge regarding ergonomic hazards among auto drivers in Perinthalmanna municipality, with a view to develop an information booklet

OBJECTIVES:

Assess the knowledge regarding ergonomic hazards among auto drivers

Determine the association between knowledge on ergonomics hazards with selected demographic variables

HYPOTHESIS:

H0: There is no significant association between the level of knowledge regarding ergonomic hazards and selected demographic variables of auto drivers

H1: There is a significant association between the level of knowledge regarding ergonomic hazards and selected demographic variables of auto drivers

Conceptual framework of the study: The study was based on Health promotion model by Nola J Pender.

Research methodology:

Research approach: quantitative approach

Research design: Non experimental descriptive survey design

Setting: The study was conducted in selected auto stand at Perinthalmanna municipality.

Sample : samples are auto drivers who are available at the time of study.

Sample size: In the study sample size is 100

sampling technique:

probability convenient sampling technique.

Tools and technique: structured questionnaire

TOOL 1 – Structured questionnaire for assessing socio-demographic data

Structured questionnaire consist of 5 items seeking information about socio-demographic variables such as age, level of education, year of experience, driving hours and previous knowledge.

TOOL 2 – Structured questionnaire for assessing level of knowledge .

Structured questionnaire consist of 15 questions for assessing the knowledge regarding ergonomic hazards among auto drivers. Each correct answer carried one mark and wrong answer carried zero mark.

DATA COLLECTION PROCESS: The present was conducted in auto stands at perinthalmanna municipality. Formal permission from the college authorities was obtained. The selection of samples was done based on inclusion and exclusion criteria. The consent from samples was obtained. Assessment of demographic data was done and assessment of knowledge on ergonomic hazards was done using structured questionnaire.

ETHICAL CONSIDERATION

Ethical clearance was obtained from Perinthalmanna Municipality and institutional authorities.

Results:**Section A :- Distribution of socio-demographic variables of auto drivers .**

32% of auto-drivers re belongs to the age group of 31- 40 and 41-50 years , 21% of auto-drivers are belongs to the age group of greater than or equal to 51 years and 15% of auto-drivers are belongs to the age group of 21-30 years.62% of auto-drivers have primary education , 35% of auto drivers have secondary education and 3% of auto drivers have degree or diploma.34% of auto drivers have experience for 6-10 years , 33% of auto drivers have experience of 1-5 years , 30% have more than 10 years of experience and 3% have less than one year of experience in driving.56% of auto drivers work for 5 -10 hours daily, 25% of auto drivers work for 11 -12 hours daily, 10% are works more than 12 hours daily and 9% nine work less than 5 hours in a day .42% of auto drivers have no previous sources of knowledge,33% have previous knowledge through social media , 14% have previous knowledge from other sources and 11% have knowledge from health professionals.

Section B :- Assessment of knowledge regarding ergonomics hazards

The knowledge on ergonomics hazards among auto drivers using structured questionnaire revealed that 7% have good knowledge, 49% have average knowledge and 44% of auto drivers have poor knowledge.

Section C :- Association between knowledge on ergonomics hazards and selected socio – demographic variables

The chi square value of age of auto drivers is ($\chi^2=9.48$), which is less than table value 11.07. Hence we rejected H1 which implies there is no significant association between age and knowledge on ergonomic hazards of auto drivers. Chi square value of education is ($\chi^2=9.99$), which is greater than table value 7.82. Hence we accepted H1 which implies there is association between education and knowledge on ergonomic hazards of auto drivers. Chi square value year of experience is ($\chi^2=7.43$), which is less than table value 11.07. Hence we rejected H1 which implies there is no association between year of experience and knowledge on ergonomic hazards of auto drivers. Chi square value of driving hours of auto drivers is ($\chi^2=14.10$), which is greater than table value 11.07. Hence we accepted H1 which implies there is an association between driving hours and knowledge on ergonomic hazards of auto drivers. Chi square value of previous knowledge is ($\chi^2=5.180$), which is less than table value 11.07. Hence we rejected H1 which implies there is no significant association between previous knowledge and knowledge on ergonomic hazards of auto drivers.

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