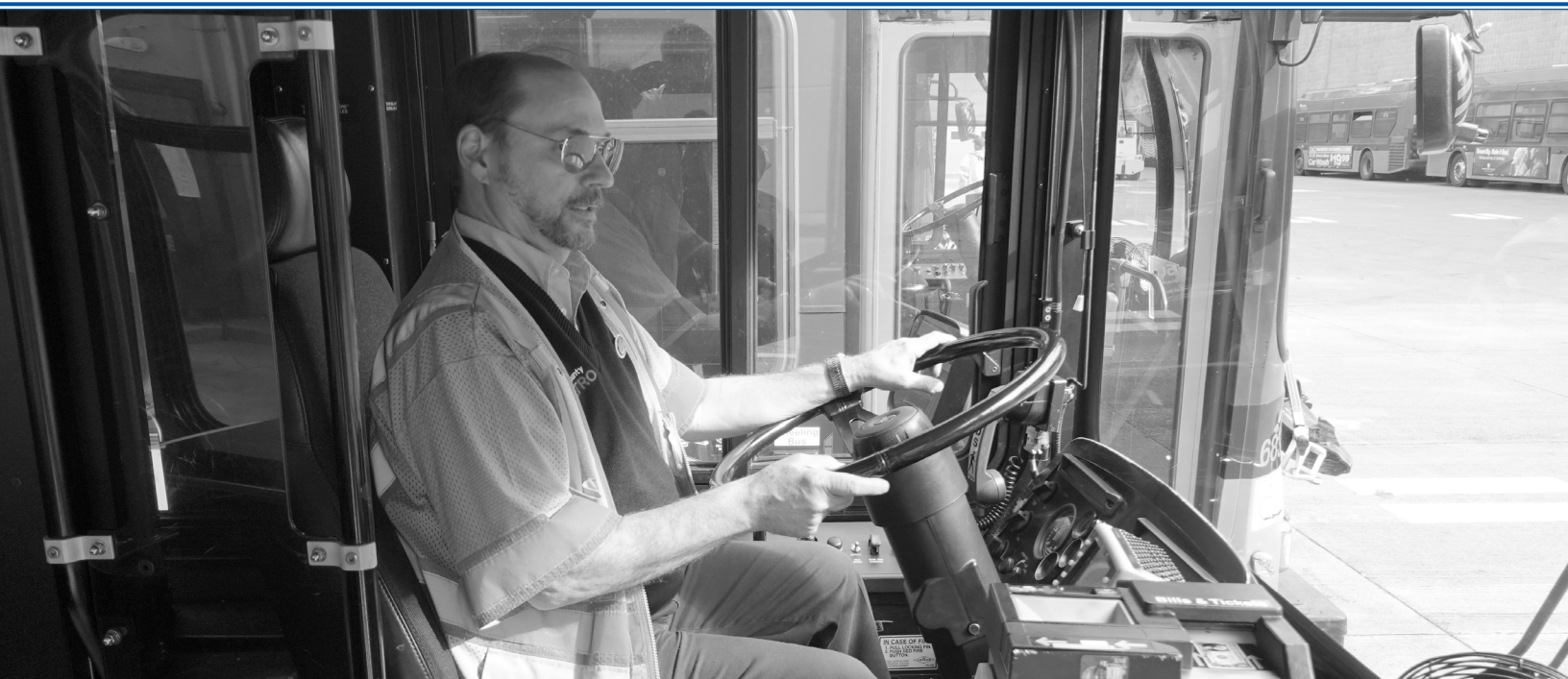


Not Just an Ache: Examining the Rate of Musculoskeletal Pain in City Bus Drivers

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This paper examines the rates of musculoskeletal discomfort in a sample of 957 city bus drivers at King County Metro, a public transportation agency serving the greater Seattle area. It also examines how often such pain prevented drivers from doing their normal work, needed treatment from a medical professional, or incited one or more worker's compensation claims.

Study Methods

To assess the level of musculoskeletal discomfort in city bus drivers, an anonymous survey was distributed to 1326 drivers at King County Metro. This survey consisted of a Nordic Questionnaire asking drivers whether or not they experienced pain in certain areas of the body in the past twelve months, along with a small section asking for basic information such as age, hours per week worked, and gender. For each area of the body included in the questionnaire, respondents were also asked whether or not pain in that area of body

prevented them from doing their normal work, needed treatment from a medical professional, or incited one or more worker's compensation claims. Some questionnaires were incompletely filled out, hence the reduction in the sample size included in the study. The surveys were distributed during the 'pick,' a process where drivers report to a common bus base to select their schedules for the upcoming period. All drivers present for the pick were prompted to fill out the survey.

Findings

The results of the survey demonstrate that bus drivers experience very high rates of musculoskeletal pain, with 85% of respondents indicating pain in at least one area of the body. Comparisons to CDC data show higher rates of musculoskeletal pain in this sample than in the general population. Female and full-time drivers showed consistently higher rates of pain across all areas of the body than their male and part-time

counterparts, while variables such as BMI and age showed less influence. Rates of pain in the lower back, shoulders, and knees were especially elevated. Interestingly, areas in the right side of the body showed higher rates of pain than areas in the left side of the body.

City bus drivers show higher rates of musculoskeletal pain than the general population, with 85% having pain in at least one area of the body over the twelve months before the survey was administered.

Of those experiencing pain in at least one area of the body, more than 50% were prevented from doing their normal work and visited a medical professional. For all drivers experiencing pain, there were large gaps in the rates of medical visits and worker's compensation claims, suggesting that King County Metro's already large expenditures on worker's compensation claims does not fully account for the real rate of injury, discomfort, and related work prevention experienced by drivers.

Policy Recommendations

The high rates of musculoskeletal pain in all strata of drivers at King County Metro indicate the need for significant changes at the agency level and higher. Existing research has examined the potential for the installation of active-suspension seats in buses to reduce the whole-body vibrations undergone during drivers' shifts. This would especially help lower-back pain, the area of the body most commonly cited by respondents in the survey. Smaller details in the drivers' workstations, such as placement of commonly-used controls, are also of concern, and suggest the need for increased involvement of drivers in the bus procurement process. Changes in route types and upgrades to road surfaces along routes are also potential avenues for reducing musculoskeletal pain in drivers.

About the Authors

Jeremy Steele is currently in his final year of pursuing an undergraduate degree in Geography (Urban Systems) and Software Engineering at McGill University in Montréal, Canada. He works as an independent contractor for MTI, after having completed a summer internship there in 2018. His research interests lie in urban transportation planning, specifically in areas including route design and accessibility and ease of use for riders.

To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/1892.html



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