

INPLASY PROTOCOL

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Corresponding author:
Boris Cendales

boriscendales@gmail.com

Author Affiliation:
El Bosque University.

Support: International
Transport Workers' Federation
-ITF.

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None declared.

Mental Health Outcomes among Urban Public Transport Workers: A Systematic Literature Review

Cendales, B¹; Useche, S²; Gómez, V³; Cedillo, L⁴; Stephenson, D⁵; Yan, S⁶; Landsbergis, P⁷.

Review question / Objective: Systematically review the literature to assess the effects of occupational exposures and interventions on Urban Public Transport (UTP) workers' mental health.

Condition being studied: In order to include a wide spectrum of outcomes, mental health was defined according to the WHO (2001) as a "state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community".

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 January 2023 and was last updated on 24 January 2023 (registration number INPLASY202310076).

INTRODUCTION

Review question / Objective: Systematically review the literature to assess the effects of occupational exposures and interventions on Urban Public Transport (UTP) workers' mental health.

Rationale: Numerous studies have associated the occupational risks of UPT with the physical and mental health of workers. Most of the available evidence,

focused on bus drivers, suggests that UPT working conditions are associated with cardiovascular, musculoskeletal, and gastrointestinal diseases, psychological stress, anxiety, and depression (Evans, 1994; Kompier & Di Martino, 1995; Ragland et al., 1998; Tse et al., 2006). These health outcomes may be caused by the direct effect of exposures (e.g. physical and chemical hazards) on the endocrine and metabolic functions (Golinko et al., 2020; Gromadzińska & Wąsowicz, 2019), or their

long-term indirect effect via stress-related psychophysiological wear (i.e. allostatic load) (Juster et al., 2010).

Building on the accumulated knowledge about occupational exposures of UTP workers, some interventions to improve their mental health have focused on both risk removal and stress management skills (e.g. Kompier et al., 2000). However, the growing evidence on the occupational risks of UPT has not generated the expected increase in the production of evidence-based interventions and evaluative research in the field (Tse et al., 2006), which to date remain scarce.

Regarding previous literature reviews, four studies report that urban bus drivers have a greater risk for stress-related mental disorders, which in turn are associated with absenteeism, sick leave, and negative safety outcomes (Evans, 1994; Kompier & Di Martino, 1995; Ragland et al., 1998; Tse et al., 2006). These findings consistently suggest that mental disorders represent high economic and health burdens for the UPT industry. Nevertheless, previous review studies have three key limitations: i) they are focused exclusively on the working conditions and mental health outcomes of UPT drivers, preventing comparisons between occupational groups; ii) they focus primarily on the outcomes of occupational exposures, without examining the effectiveness of intervention studies; and iii) they used narrative or quasi-systematic methodological designs (i.e. without an explicit research protocol), which makes them irreproducible and vulnerable to selection and interpretation bias (Pae, 2015).

Understanding the occupational mental health outcomes of UPT workers is crucial because they provide an essential service and because their health status has implications for public health, to the extent that it represents a potential risk factor for road safety (Useche, et al., 2019). To overcome the limitations of previous literature reviews, this study investigates the effects of occupational exposures and interventions on the UPT workers' mental health using a systematic approach based on the PRISMA protocol (Moher, 2009). The

results of this review are expected to contribute to consensus on the determinants of mental health in UPT workers and support the design of evidence-based work redesign and individual interventions.

Condition being studied: In order to include a wide spectrum of outcomes, mental health was defined according to the WHO (2001) as a “state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”.

METHODS

Search strategy: A comprehensive literature search was conducted from 1990 to 2021. Preliminary searches were performed to identify free-text terms, which were combined with MeSH terms in the final search algorithms. Specific search strings adjusted to the field codes of each database were designed, which included the following keywords: transport, transit, bus, train, tram, railway, and subway employees/workers/drivers/maintainers/operators, mental health, anxiety, depression, burnout, stress, PTSD, wellbeing, quality of life, psychological strain, psychological distress, psychological disorder, psychiatric disorder, alcohol and substance use, sleep, fatigue and need for recovery.

Participant or population: UTP workers.

Intervention: Workplace mental health interventions (and Occupational exposures).

Comparator: None.

Study designs to be included: This review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The inclusion and exclusion criteria were set a priori and according to the Population, Intervention/Exposure, Comparison, Outcome and Study Design

(PICOS) framework. **Population:** Formal UPT workers of any age or gender, including drivers/maintainers/operators. Studies that include other occupational groups as well as UPT workers were considered eligible if separate results on the association between working conditions and UPT workers' mental health could be extracted. **Exposure/Intervention:** Physical, chemical, biological, ergonomic, safety and psychosocial work exposures; and workplace mental health interventions. **Comparison:** none. **Outcomes:** quantitative or qualitative assessments of stress, well-being, psychiatric or mental health symptoms. **Study design:** Considering the methodological heterogeneity in the research field, study design inclusion criteria were not specified.

Eligibility criteria: The exclusion criteria were: articles published in languages other than English; case studies, conceptual articles, conference proceedings and literature reviews; articles on inter-city rail or bus workers; articles on self-employed or informal transport workers; studies on drug testing of transport workers, which do not assess mental health outcomes associated to working conditions; studies which assess safety outcomes related to working conditions or mental health problems of UPT workers; studies which assess physical health outcomes associated with the working conditions of UPT workers; and studies on stress biomarkers (as they are mechanisms that may or may not lead to mental health outcomes).

Information sources: The electronic databases consulted were PubMed, Scopus, and the Web of Science.

Main outcome(s): Clinical interviews and standardized self-reports of anxiety, depression, burnout, psychological stress, post traumatic stress disorder, well-being, quality of life, psychological strain, psychological distress, psychopathology, psychosomatic symptoms, psychiatric symptoms, alcohol and substance use, sleep, fatigue and need for recovery.

Additional outcome(s): Qualitative results on mental health issues and mechanisms underlying the association between occupational exposures and mental health.

Data management: Search results (bibliographic and abstract information) were stored and exported to Rayyan® online software, where duplicates were automatically removed, and full text manuscripts were uploaded in PDF format. The articles' titles and abstracts were independently reviewed by two researchers to assess eligibility using the inclusion/exclusion criteria. Disagreements about the inclusion of manuscripts were resolved using the evaluation of a third reviewer. The references of retrieved articles were inspected in a hand searching for additional eligible manuscripts.

Quality assessment / Risk of bias analysis: Methodological quality will be assessed using standardized instruments according to the research designs of eligible studies. Preliminarily, the Newcastle–Ottawa scale -NOS for prospective (Peterson et al., 2011) and cross-sectional (Moskalewicz & Oremus, 2020) studies, the Joanna Briggs Institute Checklists for Quasi-Experimental and Randomized Controlled Trials, and the Critical Appraisal Skills Program Qualitative Research Checklist (CASP, 2018) has been considered. Disagreements on quality appraisal will be resolved by consensus. The risk of bias assessment will be conducted after data extraction to avoid reporting bias (Boland et al., 2017).

Strategy of data synthesis: According to the PICOS framework, the data extraction process will include population (country, city, occupation, age, gender), intervention (if applicable) or exposure, comparisons (if applicable), outcomes, and study design. Occupational exposures and their mental health outcomes will be reported differentiating physical, chemical, biological, ergonomic, safety and psychosocial risks. The latter will be differentiated according to the WHO Organizational Stress-related Hazard Categorization (job content, workload and work pace, working hours, participation

and control, career development, status and pay, role in the organization, interpersonal relationships, organizational culture, and work-home interface) (Leka et al., 2004). Interventions and their outcomes will be categorized according to their individual or job-redesign approach. Finally, qualitative articles will be analyzed using Thomas and Harden's (2008) thematic synthesis method.

Subgroup analysis: Not applicable.

Sensitivity analysis: Not applicable.

Language restriction: Only original research published in English was considered for inclusion.

Country(ies) involved: Colombia.

Keywords: Mental health, urban public transport workers, work conditions, occupational exposures, organizational interventions.

Contributions of each author:

Author 1 - Boris Cendales.

Email: boriscendales@gmail.com

Author 2 - Sergio Useche.

Author 3 - Viviola Gómez.

Author 4 - Leonor Cedillo.

Author 5 - Daryl Stephenson.

Author 6 - Shirley Yan.

Author 7 - Paul Landsbergis.