

Occupational hazards among food delivery workers: a systematic review of empirical studies

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ABSTRACT

Introduction: The rapid growth of e-commerce has driven the global expansion of food delivery services. Delivery riders are exposed to multiple occupational hazards due to time pressure, long working hours, and physically demanding tasks. Despite their essential role, research on their health and safety remains fragmented.

Methods: This review followed the PRISMA 2020 guidelines. A systematic search was conducted in the MEDLINE and Scopus databases. Only cross-sectional studies involving adult food delivery workers were included. Studies focusing on any type of accident or work-related health problem were considered. Other study designs, such as systematic reviews, were excluded. Studies involving non-food delivery workers or participants under 18 years of age were also excluded. The search was conducted only in English. Keywords and phrases such as “work,” “accidents,” and “delivery rider” were used with Boolean operators. The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Prevalence Studies.

Results: Occupational hazards were grouped into four categories. Traffic risks included speeding, running red lights, and mobile phone use while driving, with younger and less experienced riders showing a higher risk of accidents. Ergonomic risks were associated with prolonged sitting, vibration exposure, and repetitive movements, contributing to musculoskeletal disorders, particularly in the lower back, neck, and shoulders. Psychosocial risks included stress, burnout, verbal or physical abuse, and job insecurity. Socioeconomic factors, such as dependence on delivery income and lower educational levels, further increased vulnerability and limited access to preventive measures.

Conclusion: Food delivery workers face multidimensional risks that affect physical health, mental well-being, and road safety. Addressing these challenges requires comprehensive interventions, including road safety training, ergonomic improvements, psychosocial support, protective equipment, and improved working conditions to reduce accidents and protect worker health.

Keywords: Food Delivery Riders, Musculoskeletal Disorders, Occupational Safety, Psychosocial Stress, Traffic Accidents

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Introduction

In recent years, the rapid growth of e-commerce has significantly increased demand for food

delivery services, spurring the expansion of food delivery platforms. Various mobile applications allow customers to place online orders for food

and other goods. These orders are delivered via delivery services within a specific timeframe, and delivery riders play a crucial role in the online-to-offline service chain.

For example, China has the largest on-demand food delivery industry in the world, with a market size of 66.4 billion dollars in 2022 and nearly 13 million workers employed as delivery riders in 2021.¹

However, concerns about dangerous driving and accidents among food delivery riders are steadily increasing, as traffic accidents worldwide have been steadily rising in recent years. Driving accounts for the largest portion of their working hours, and activities such as frequent stair climbing further increase their physical workload. Since they are paid per order assigned to them, their earnings depend on the number of deliveries completed and the distance of each route. Because each order is subject to strict time constraints and potential penalties for late delivery, riders feel pressured to minimize travel time and plan optimal delivery routes. All these factors lead to increased stress and mental workload during their work.² Previous research published in the *International Journal of Occupational Safety and Health* has also emphasized the importance of occupational safety measures and preventive strategies in reducing workplace accidents and improving worker safety.³

Similar findings have been reported in studies published in the *International Journal of Occupational Safety and Health*, where researchers identified time pressure, fatigue, and unsafe riding practices as important factors affecting the safety behavior of delivery riders and other transport workers.⁴

A study conducted among 563 platform delivery workers in Brazil showed that 44.1% had been involved in a work-related accident within the past year, 82.8% of which were traffic related. These rates were higher among younger workers (54.6% for those aged up to 28 years), and one in two reported working seven days a week.⁵

According to data from the U.S. Bureau of Labor Statistics (BLS), in the United States, there were 83 fatal incidents among professional drivers (including food delivery riders) in 2019, 72.3% of which were due to traffic accidents. In the same year, 8020 non-fatal injuries were recorded, resulting from falls, road collisions, or improper lifting of loads.

Furthermore, studies on platform workers show that those who rely entirely on platform work for their income are 1.36 times more likely to experience assault or threats compared to those who work part-time.⁶ In a 2024 study conducted in India, it was found that 28% of delivery workers had experienced economic abuse (such as non-payment), 59% had faced verbal abuse, and 13% had suffered both forms of mistreatment. Data from systematic reviews reveal that delivery workers are exposed to high psychological stress due to unstable income and the lack of social protection. Similar findings have been reported in occupational health studies, which indicate that demanding working conditions and work-related stress can negatively affect workers' well-being and safety performance.⁷ As a result, they experience anxiety and occupational burnout, which in turn increases the likelihood of accidents and assaults.⁸

Despite the significant growth in food delivery work in recent years, the available literature on the health and safety of delivery workers remains fragmented and often focuses on isolated aspects of the phenomenon. Conducting a systematic review is therefore deemed essential, as it enables the collection, evaluation, and synthesis of existing research data in a structured and evidence-based manner. Through this process, it becomes possible to highlight the most important risk factors, to map their impacts on food delivery workers' health and quality of life, and to identify knowledge gaps that require further investigation.

Such a review not only contributes to the scientific understanding of the issue but also

has significant practical implications. It can serve as a reference point for developing targeted prevention and intervention strategies, as well as for designing public health and occupational safety policies that enhance the safety, well-being, and sustainability of delivery workers. In this way, the systematic review becomes an indispensable tool for both the scientific community and policymakers, promoting a more comprehensive and evidence-based approach to addressing occupational risks in this sector.

Methods

The purpose of this systematic review was to investigate the occupational hazards faced by food delivery workers. The research question addressed in this study was: What occupational risks do food delivery workers experience?

A Systematic Literature Review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) method, through searches in the databases of the U.S. National Library of Medicine of the National Institutes of Health (PubMed –U.S. National Library of Medicine, National Institutes of Health) and Scopus Library.⁸

The search was conducted from June 2025 to July 2025.

Through a systematic review, researchers aim to identify, evaluate, and synthesize all empirical data that meet specific predefined criteria. The goal is to answer a clearly defined research question with the highest possible level of reliability.

Clear inclusion and exclusion criteria were established prior to the literature search to ensure the selection of the studies relevant to the objectives of this systematic review. Studies were included if they met the following criteria: cross-sectional design, publication in English, inclusion of adult participants, and exclusive focus on food delivery workers.

Studies were excluded if they had any of the following criteria: systematic reviews and meta-analyses, studies published in languages other than English, studies included participants under 18 years old, or studies concerning workers involved in the delivery of products other than food.

For the conduct of the systematic review, the following keywords and phrases were used: work, occupation, job, accidents, hazards, safety, food delivery, delivery rider, food carrier.

To ensure an effective search and retrieval of all relevant studies, all possible combinations of these keywords were applied using Boolean operators in the PubMed database as follows:

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(work [Title/Abstract] OR occupation [Title/Abstract] OR job [Title/Abstract]) AND (accidents [Title/Abstract] OR hazards [Title/Abstract] OR safety [Title/Abstract]) AND ("food delivery"[Title/Abstract] OR "delivery rider"[Title/Abstract] OR "food carrier"[Title/Abstract]).
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The same search string was also used in the Scopus database with the necessary changes.

The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Prevalence Studies, which consists of nine items evaluating sample frame appropriateness, sampling methods, sample size adequacy, description of study subjects and setting, coverage of data analysis, validity and reliability of measurement tools, appropriateness of statistical analysis, and response rate management.⁸

Each item was rated as “Yes”, “No”, “Unclear”, or “Not applicable”.

For descriptive purposes, a modified quantitative approach was used, assigning 1 point for each “Yes” response (range: 0–9). Based on the total score, studies were categorized as having low (7–9), moderate (4–6), or high (0–3) risk of bias.

Results

From the systematic literature review, a total of 20 studies were identified that met all the inclusion criteria we had set. All other studies were excluded either because their subject matter was not relevant to the review's focus or because they did not meet the inclusion criteria. Figure 1 presents the stages of the systematic review process,⁸ and Table 1 summarizes the findings of the articles included in the systematic review.

The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Prevalence Studies.⁹

Based on the JBI appraisal, a number of studies were classified as low risk of bias,¹⁰⁻¹³ particularly those using validated measurement instruments, adequate sample sizes, and robust statistical analyses.

Most studies were classified as having moderate risk of bias,¹⁴⁻²⁶ primarily due to non-probability sampling and reliance on self-reported outcomes.

A small number of studies exhibited high risk of bias,²⁷⁻²⁹ mainly owing to insufficient methodological detail and lack of validated measurement tools.

In table 1 are presented the quality assessment results.

The review of studies on food delivery workers highlights a range of complex occupational hazards, which can be classified into traffic-related, ergonomic, psychosocial, and socioeconomic risks.

1. Traffic Accidents and Risky Driving Behaviors:

Evidence from the reviewed studies indicates that risky driving behaviors are highly prevalent among food delivery workers. Commonly reported behaviors include running red lights, speeding, driving against traffic, using mobile phones while driving, and failing to wear protective helmets.^{2,11,14,17,18,21,25-27,30}

Reported accident involvement rates range from 25% to 70%, with severity influenced by factors such as age, experience, and employment duration. Specifically, younger age, limited work experience (<2 years), and lower educational attainment are correlated with a higher risk of accidents.^{13,21} Furthermore, extended working hours (>8–10 hours per day) and high delivery volumes substantially increase the likelihood of accidents.^{13,18,24} Time pressure and heavy workloads often compel couriers to adopt unsafe driving practices.²⁵⁻²⁷ Some studies also report increased accident frequency during the afternoon and on midweek.²⁵ Finally, riders using two-wheeled vehicles face a greater risk of injury and assault compared to those driving cars.^{10,31}

2. Ergonomic and Musculoskeletal Risks

Food delivery work involves prolonged sitting, exposure to vibrations, and repetitive movements. Most studies report a high prevalence of musculoskeletal disorders, with symptoms most frequently affecting the lumbar spine, back, neck, and shoulders.^{10,16,19,23,30} Over 70% of participants in relevant studies reported experiencing lower back or back pain within the past year.^{16,32} Exposure to whole-body vibration (WBV) has been identified as a major risk factor, particularly among riders using sedan-type motorcycles.^{30,32} Contributing factors to the development of musculoskeletal problems include extended working hours, lack of ergonomic equipment, fatigue, and improper body posture while riding.^{10,16,32} Exposure to vibration levels exceeding recommended limits has been linked to a twofold increase in the likelihood of developing low back pain, while long working hours and consecutive workdays exacerbate these symptoms.^{19,30}

3. Psychosocial and Organizational

Delivery workers frequently experience elevated levels of occupational stress, exhaustion, and emotional fatigue because of demanding

working conditions.^{19,24,32} Evidence suggests that couriers reporting high stress levels are up to six times more likely to be involved in an accident compared to those experiencing mild stress.^{12,24} Moreover, occupational burnout and excessive job demands are associated with decreased attention and increased unsafe work behaviors.¹² Factors such as time pressure, income uncertainty, and job insecurity further intensify stress and fatigue, often accompanied by physical symptoms including headaches, insomnia, and a general sense of discomfort.^{19,27}

4. Socioeconomic Factors

Several studies have demonstrated an association between socioeconomic status and occupational safety among delivery workers.

Injury rates are higher among individuals who rely solely on their courier income, as financial dependence often leads them to disregard safety regulations to maintain earnings.^{26,28} Furthermore, the phenomenon of presenteeism (continuing to work despite illness) has been reported in approximately 27% of cases.¹⁹ In terms of demographic characteristics, most couriers are male, young, and have low levels of education. These factors have been linked to increased occupational risk and reduced access to preventive measures and training opportunities.^{2,11,14,25,30}

In Table 2 are summarized some of the characteristics of the studies.

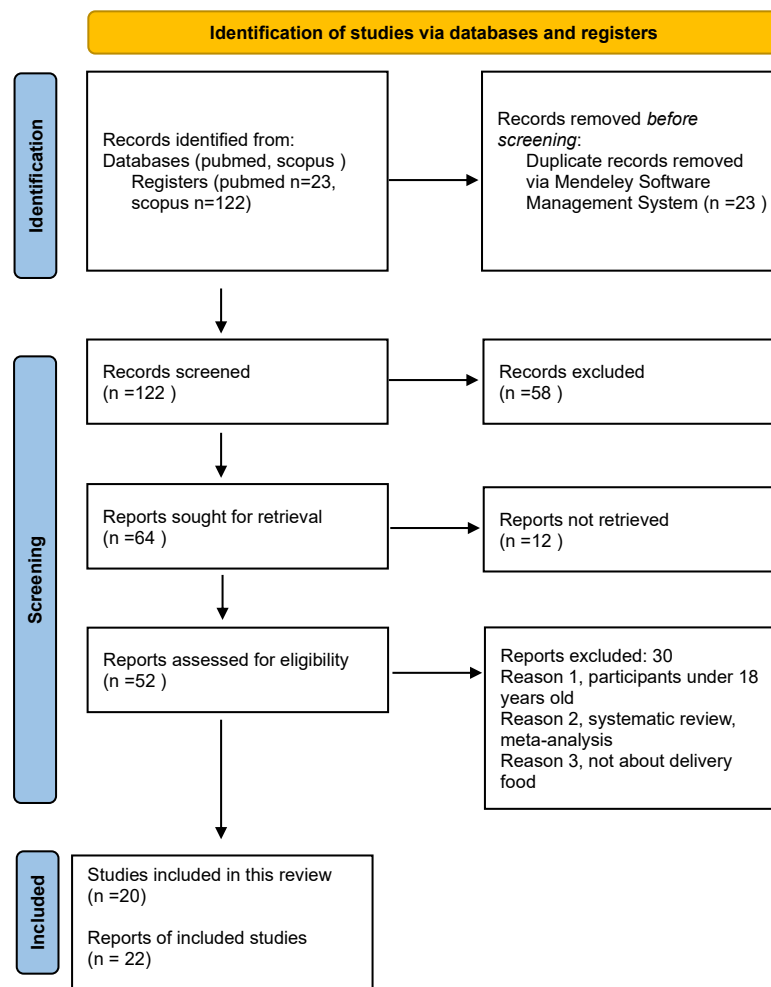


Figure 1: PRISMA 2020 Flow Diagram, Phases of the Systematic Review Process

Table 1: JBI Critical Appraisal Checklist for Prevalence Studies

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total score	Risk of Bias
China, Zheng Y et al, 2019	yes	no	yes	yes	yes	unclear	unclear	yes	unclear	5	moderate
France, Aguilera et al, 2022	yes	no	yes	yes	yes	unclear	unclear	yes	unclear	5	moderate
Vietnam, Duy Quy et al, 2023	yes	unclear	yes	yes	yes	unclear	unclear	yes	unclear	5	moderate
Australia, Jolene AC et al, 2023	unclear	no	no	yes	yes	unclear	unclear	yes	unclear	3	high
Thailand, Champahom T et al, 2025	yes	unclear	unclear	unclear	yes	yes	unclear	yes	unclear	4	moderate
India, Thomas M Benson et al, 2025	yes	unclear	unclear	yes	unclear	unclear	unclear	unclear	unclear	2	high
China, Zihao Zhang et al, 2023	yes	no	unclear	yes	yes	yes	yes	unclear	unclear	5	moderate
Vietnam, Nhat Xuan Mai et al, 2025	yes	no	yes	yes	yes	unclear	unclear	yes	unclear	5	moderate
Malaysia, Rishikesavan Ragupathy et al, 2024	yes	no	yes	yes	yes	unclear	unclear	yes	Unclear	5	moderate
Brazil, Marcelo Werneck Barbosa et al, 2025	yes	unclear	yes	yes	yes	unclear	unclear	yes	unclear	5	moderate
Romania, Man TC et al, 2024	yes	unclear	unclear	yes	yes	yes	unclear	unclear	unclear	4	moderate
China, Wanwaen C et al, 2024	yes	unclear	unclear	yes	unclear	unclear	unclear	unclear	unclear	2	high
Thailand, Molo M et al, 2024	yes	no	yes	yes	yes	unclear	unclear	yes	yes	6	moderate
Malaysia, Daud A et al, 2025	yes	no	yes	yes	yes	yes	yes	yes	yes	7	low
USA, Laskaris Z et al, 2025	yes	yes	yes	yes	yes	yes	unclear	yes	yes	7	low
Korea, Hyoungseob Yoo et al, 2024	yes	unclear	yes	yes	yes	no	unclear	yes	unclear	5	moderate
Thailand, Kwangstith S et al, 2025	yes	unclear	yes	yes	yes	unclear	unclear	yes	unclear	5	moderate
Italy, Boniardi L et al, 2024	yes	yes	yes	yes	yes	yes	yes	yes	unclear	8	low
Greece, Papakostopoulos V et al, 2021	yes	no	unclear	yes	yes	unclear	unclear	yes	unclear	4	Moderate

Table 2: Studies Identified Through the Systematic Review

Country/ Research ers/ Year	Popula tion	Age	Educational Level	Years of Experie nce as Food Deliver y Worker s	Working hours/ day	Working days/ week
China, Zheng Y et al, 2019	824	8.4% 18-25 y , 33.5% 26-30 y, 38.9% 31-35 y, 14.8% 36-40 y , 4.4% 41-50 y	7.8% primary school, 53.2% junior high school, 30.5% senior high school, 8.5% college	39.8% 1-2 years , 27.6% 2-3 years, 25.2% 3-4 years, 7.4% >4 years	7.1% <7 h, 18.7% 7-8 h , 37.1% 8-9 h , 30.8% 9-10 h, 5.8% 10-11 h, 0.5% >11 h	
France, Aguilera A et al, 2022	517 (2021), 300 (2020)	66% <25 y (2021), 88% <25 y (2020)	38 % no diploma (2021), 40% no diploma (2020)	67% <1y (2021), 79%, <1y (2020)		28% 5 days, 40% 6 days, 17% 7 days
Vietnam, Duy Quy Nguyen-Phuoc et al, 2023	554	Mean (SD) 25.66 y (5.54)	96 (17.3%) high school, 205 (37%) college, 182 (32.9%) university, 31 (5.6%) above university, 40 (7.2%) other			
Australia , Jolene A. Cox et al, 2023	71 gig worker s (ride-hailing , courier , and food deliver y service s via digital platfor ms)	Mean (SD) 33.54 y (9.30)		Mean (SD) 20.71 (15.68) <5 years	Mean (SD) 22.14 (13.90) 4-70 h/ week	
Thailand, Thanapong Champa hom et al, 2025	2000	73.5% 25-44 y	83.5% high school or higher education	86% >5 years	56.7% 9-12 hours	45.4% 7 days

India, Thomas M. Benson et al, 2025	425	128 (30.1%) <25 y, 107 (25.2%) 26-29 y, 101 (23.8%) 30-34 y, 89 (20.9%) >35 y	58 (13,7%) secondary school or below, 129 (30,4%) diplomas, 238 (56%) Graduate or postgraduate	128 (30.1%) <1year, 129 (30.4%) 1-2 y, 168 (39.5%) >2 y		
China, Zihao Zhang et al, 2023	46	26 (56.5%) 26-35 y, 5 (10.9%) 36-45 y, 2 (4.3%) >45 y	21 (45.7%) high school, 12 (26.1%) junior college, 2 (4.3%) bachelor's degree or above, 6 (13%) higher education	10 (21.7%) <6, 7 (15.2%) 6-12 m, 20 (43.5%) 1-3 years, 9 (19.6%) >3 y	33 (71.7%) 8-12 hours, 8 (17.4%) >12 h	
China, Zhan Jing et al, 2023	5703	Mean 33.906				
Vietnam, Nhat Xuan Mai et al, 2025	419		45.8% high school, 21% college, 25.1% university, 0.7% above university, 7.4% other			
Malaysia, Rishikeshavan Ragupathy et al, 2024	207	45 (21.7%) 18-23 y, 98 (47.3%) 24-29 y, 64 (30.9%) 30-35 y	143 (69.1%) secondary school, 64 (30.9%) university or college	74 (35.7%) 7 months - 1 year, 126 (60.9%) 2-5 y, 7 (3.4%) 6-10 y	81 (39.1%) 7-9 hours, 126 (60.9%) >10 h	2 (1%) <2 days, 9 (4.3%) 3-4 days, 74 (35.7%) 5-6 days, 122 (58.9%) 7 days
Brazil, Marcelo Werneck Barbosa et al, 2025	295	Average age 30 years	53.6% high school, 90.2% elementary school			
Romania, Titus Cristian et al, 2024	168					
China, Wanwae n C et al, 2024	253	134 (53%) <30 y, 119 (47%) >30 y	126 (49.8%) primary/ secondary school, 57 (22.5%) undergraduate, 70 (27.7%) graduate or higher	41 (16.2%) 1-5 years, 105 (41.5%) 6-10 y, 41 (16.2%) 11-15 y, 66 (26.1%) >15 y	101 (39.9%) <8 hours, 152 (60.1%) >8 hours	

Thailand, Molo M et al, 2024	257	109 <30 y, 120 30-45 y, 26 46-60 y, 2 >60 y	7 primary school, 104 secondary school, 146 higher education	93 <12 months, 74 13-35 m, 90 >36 m	103 <8 h, 154 >8 h	
Malaysia, Daud A. et al, 2025	191	Mean (SD) 27.6 y (5.76)	5 (2.6%) non formal, 4 (2.1%) primary school, 84 (44%) secondary school, 76 (39.8%) diploma, 22 (11.5%) degree/ master/ PHD	92 (48.2%) 6-12 months, 99 (51.8%) >12 m	10.2 +/- 2.33 h/ day	6.1 +/- 1.03 days/ week
USA, Laskaris Z et al, 2025	1650	248 (15%) 18-24 y, 665 (40.3%) 25-34 y, 470 (28.5%) 35-44 y, 267 (16.2%) >45 y		314 (19%) <1y, 411 (24.9%) 1-2 y, 381 (23.1%) 2-3 y, 168 (10.25) 3-4 y, 376 (22.8%) >4 y	617 (37.4%) <20 hours, 568 (34.4%) 20-39 h, 465 (28.2%) >40 h	
Korea, Hyoungs eob Yoo et al, 2024	400	6 (1.5%) 18-20 y, 76 (19%) 20-30 y, 171 (42.8%) 30-40 y, 82 (20.5%) 40-50 y, 53 (13.2%) 50-60 y, 12 (3%) >60 y	263 (65.8%) high school or lower, 114 (28.5%) 2year college, 23 (5.7%) University or higher	3.08 +/- 1.9 years	7.38 +/- 1.9 hours / day	5.70 +/- 0.8 Days / week
Thailand, Kwangsu kstith, S. Et al, 2025	709	36 (5.1%) <20 y, 403 (56.8%) 21-35 y, 218 (30.7%) 36-45 y, 52 (7.3%) >46 y	35 (4.9%) primary school, 325 (45.8%) secondary school, 110 (15.5%), Diploma 239 (33.7%) Bachelor or higher	Mean 2 years	Mean 54 Hours/ week	
Italy, Boniardi L et al, 2024	240	47 (20%) <25 y, 69 (29%) 25-29 y, 46 (19%) 30-34 y, 69 (29%) >35 y	28 (12%) Degree/ master or higher, 97 (40%) High school, 102 (43%) middle school or primary school, 3 (1%) other	47 (20%) <12 m, 151 (63%) 12-36 m, 37 (15%) >36 m	10 (4%) <3 h, 47 (20%) 3-4 h, 60 (25%) 5-6 h, 61 (25%) 7-8 h, 56 (23%) >8 h	8 (3%) <3 days, 32 (13%) 3-4 days, 90 (38%) 5-6 days, 105 (44%) 7 days

Thailand, Siriaran Kwangsu kstith et al, 2024	709	36 (5.1%) <20 y, 403 (56.8%) 21-35 y, 218 (30.7%) 36-45 y, 52 (7.3%) >46 y	35 (4.9%) primary school, 325 (45.8%) secondary school, 110 (15.5%) diplomas, 239 (33.7%) bachelor or higher	483 (68.1%) >1 year	547 (77.2%) >8 h/day, 503 (70.9%) >48 h/ week	
Greece, Vassilis Papakostopoulos et al, 2021	434	63.1% >25 y		78.8% >5 years		

Discussion

The present systematic review highlighted the significant occupational risks faced by food delivery workers. This profession is among the most hazardous in the modern labor market, as the nature of the work exposes employees to multiple hazards daily.

Work-related musculoskeletal disorders (WMSDs) represent the most common occupational illness in various countries, including Japan, the United States, and the Scandinavian countries.^{29,33} The primary contributing factors are prolonged static postures, non-ergonomic working positions, and extended exposure to vibrations.^{33,34} Similarly, the studies reviewed indicate that food delivery workers frequently experience musculoskeletal disorders due to the nature of their work. Low back pain is the most reported symptom, followed by discomfort in other body regions such as the neck, back, shoulders, thighs, and knees.

Occupational accidents are also relatively common among food delivery workers, primarily due to time pressure and demanding working conditions that encourage risky behaviors. The most frequently reported dangerous driving behaviors include riding in the wrong lane, running red lights, exceeding speed limits, and using mobile phones while driving. Most studies associated these behaviors with younger age and limited work experience. Additionally, long working hours, fatigue, adverse weather conditions (e.g., rain), and a

high proportion of temporary or new workers were associated with higher accident rates. Tight delivery deadlines, extended working hours, and the unpredictability of orders contribute to stress, fatigue, and reduced concentration, further increasing the risk of accidents.

In terms of injuries resulting from traffic accidents, abrasions, strains, contusions, and fractures of the upper and lower extremities were reported.

Moreover, the studies also highlighted exposure to psychosocial risk factors, including verbal and physical violence, threats, and harassment. Delivery workers often face rude customers, heavy workloads, and job instability, which can lead to stress, insecurity, and psychological fatigue.

Finally, in many cases, work is performed without adequate insurance coverage or proper personal protective equipment, such as helmets, gloves, reflective gear, or clear safety instructions from employers.

A similar review by Useche and colleagues indicates that rates of road traffic accidents are particularly high among delivery workers (57). At the same time, musculoskeletal disorders—manifesting as pain in the neck, shoulders, lower back, and knees—are a common problem, resulting from prolonged sitting, driving-related vibrations, and carrying loads in unbalanced postures.³⁶

Furthermore, other reviews highlight the psychological pressure and stress couriers experience due to job insecurity and income uncertainty.^{5,35,37} This occupation also involves exposure to violence or harassment from customers or other drivers on the road, further compromising mental health.³⁵

Finally, exposure to environmental hazards, such as vehicle exhaust, solar radiation, high temperatures, and air pollution, worsens working conditions and increases the risk of respiratory and dermatological problems.⁵

The findings of the present review are consistent with those reported in previous studies, which report similar occupational risks for food delivery workers.

This systematic review has several limitations that should be acknowledged. First, the available literature is limited and heterogeneous in study populations, making comparison and generalization of findings challenging. Additionally, due to publication bias, studies reporting positive or statistically significant results are more likely to be published, potentially affecting the comprehensiveness of the review. Finally, the search was restricted to two databases and to studies published in English, which may have resulted in the exclusion of relevant studies.

This systematic review on the occupational risks faced by delivery workers can serve as a reference point for the development of preventive and intervention strategies, as well as for the design of public health policies aimed at improving working conditions for couriers. Identifying the causes of traffic accidents can provide a basis for the implementation of mandatory road safety training programs. Similarly, documenting musculoskeletal burdens may inform regulations that limit consecutive working hours and mandate the use of personal protective equipment, such as high-quality helmets or reflective vests. Systematic recording of the effects of exposure to extreme weather conditions could support the need for

mandatory work breaks during heatwaves or extreme cold, as well as the provision of specialized equipment (e.g., insulated clothing, waterproof suits).

At the psychosocial level, the review highlights the need for measures to address job insecurity and stress stemming from the instability of platform-based work. This could be integrated into worker protection policies through more stable employment contracts or by providing rights such as insurance coverage and sick leave.

Furthermore, the work of delivery workers, under exhausting schedules and without adequate rest, increases the risk of traffic accidents for all road users. Therefore, establishing regulations limiting excessive work intensity could contribute to both reducing occupational risks and enhancing public safety.

Finally, this review provides practical tools and evidence-based guidance to occupational health practitioners in order to make targeted interventions.

Conclusion

In summary, the reviewed studies indicate that food delivery workers face multidimensional occupational risks that affect not only their road safety but also their physical and mental health. Time pressure, prolonged working hours, unsafe driving practices, and inadequate health protection contribute to a higher incidence of accidents, musculoskeletal disorders, and psychological strain.

The findings underscore the need for comprehensive preventive interventions that combine road safety training, ergonomic measures, psychosocial support, and improvements in working conditions. Adherence to traffic safety regulations, the use of appropriate personal protective equipment, proper shift organization, and provision of insurance coverage are essential prerequisites for reducing risks and safeguarding the health of delivery workers.

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