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# Occupational Health in the Gig Economy

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**ABSTRACT**

The rapid growth of the gig economy has transformed traditional employment patterns, creating new opportunities while simultaneously introducing complex occupational health challenges. This literature review examines the intersections between non-standard work arrangements and occupational health outcomes within the gig economy. Drawing on multidisciplinary research, it explores key issues such as job insecurity, lack of social protection, psychological stress, and exposure to physical and ergonomic risks. The review also highlights the limited regulatory oversight governing platform-based work, the inadequacy of traditional occupational health frameworks, and the social inequities affecting vulnerable gig workers. Furthermore, it identifies gaps in current policy and research, emphasizing the need for an inclusive occupational health model that accommodates the evolving nature of digital and flexible work. The findings underscore that while the gig economy offers autonomy and income opportunities, it simultaneously reinforces precarious working conditions, demanding urgent policy interventions and adaptive health protection mechanisms to safeguard workers' well-being.

**Keywords:** Gig Economy, Occupational Health, Precarious Employment, Platform Work, and Social Protection.

## INTRODUCTION

Job markets have undergone a seismic shift in recent years, with independent contracting and algorithmic management transforming work for millions. The ensuing "gig economy," typically defined as work mediated by digital platforms for companies or individuals, has provoked widespread debate across domains [1]. Gross earnings of U.S. gig workers amounted to $53 billion in 2020, with comparable figures predicted for 2024. These numbers reflect only a portion of the phenomenon, as alternative platforms and off-platform gig arrangements remain outside the scope [2]. Attempts to contain the term "gig economy" within platform work obscure a similar trendiness detectable in other forms of independent contracting, such as professional services or comprehensive home renovations [3]. The expansion of the gig economy bears serious implications for occupational health. A comprehensive understanding of the risks associated with gig work, as well as their determinants and consequences, is crucial to ensuring that health remains an inalienable right independent of the work arrangement adopted [2]. Analyses indicate that gig work entails a higher degree of exposure to physical and mental health hazards relative to recent decades. Platform workers are typically segmented into low and high-risk workers who exhibit substantial overall risk levels. Independent contractors, by contrast, display heterogeneous profiles [4]. Standard analyses report considerable exposure, while other evidence points towards limited and declining health risks. A systematic examination of such determinants, including employment status, access to benefits, and work organization, can help disentangle this contradictory landscape and inform targeted policy interventions commensurate with the magnitude of the challenge [5].

### Conceptual Framework of the Gig Economy and Occupational Health

The gig economy comprises short-term work arrangements with limited contractual ties between service providers and recipient organizations [3]. It is distinct from independent contracting and freelancing, which depend on acquiring working contracts outside regular hours and use specialized skills to provide services,

respectively [2]. Platform work is job performance via an interface that connects a customer with a task; tasks are gem, gig, or microtasked depending on level and type of work and constitute the gig economy [5]. Gig work is precarious because physical and psychological risks, contractual flexibility, and monetary uncertainty characterized short-term labor agreements long before the pandemic [6]. Occupational Health Theories evolve, capturing an individual's exposure to physical, chemical, biological, and psychosocial hazards occurring throughout their lifetime [5]. In gig-work settings, exposure coincides with job completion times; individuals are exposed to software programs and carrier media [1] associated with recruiters, logistics companies, and employers. Each of these institutions is included if software and tabs facilitate matching service proposals and require more than two direct exchanges. The characterization of organizations subject to theoretical analysis targets for-hire, delivery, and parcel work for individuals [6].

## Risk Landscape in Gig Work

Gig work encompasses a range of activities and accompanying materials, each with unique risk characteristics and measurement difficulties [4]. A comprehensive characterization of gig-work risks, benefits evidence-based policy interventions tailored to specific exposures and job roles. Gig work also varies by underlying business model, significantly influencing both risks and measurement approaches [3]. For instance, platform-based activities feature different risks than informal, offline transactions mediated by online advertisements; ride-hailing differs distinctly from flat-rate deliveries; and care sectors (household or commercial) involve yet another track [3]. Some platforms indirectly sell information about workers (real estate or vehicle rental); many require personal data safeguarded by privacy laws; and all transmit work-related details about meetings, durations, cancellations, and payments. Ground-truthing uncertainties from simple, direct indicators requires diverse data types [4] that are often sensitive and hard to come by in gig-enabling businesses like taxis and deliveries (that were informal before the platforms emerged; ride-hailing and deliveries have been completely reshuffled by platforms).

## Physical Health Risks

Gig work attracts numerous individuals. Many engage in the gig economy for supplementary income while maintaining a stable job, whereas others pursue gig work exclusively as a primary source of livelihood [3]. For instance, in France, 35% of gig workers joined to supplement existing jobs, while 17% derived primary earnings from it. However, across wider platforms, gig work constitutes a predominant source of earnings [5]. Leaderboards can incentivize fitness, and delivery work incorporates a physical aspect, stimulating socialization. Nevertheless, health concerns arise due to erratic schedules, long hours, and fragmented income. Anxiety remains even with constant tasks. Gig workers face mental pressure from performance metrics, solo work, competition, and dual lives [1].

## Mental Health Risks

Gig workers are uniquely at risk of developing mental-health-related illnesses [4]. The structure of gig work, platform-induced constraints, commitment to rigid scheduling, personal investments in expensive gear, and high visibility of the surrounding workforce fuel psychological stress. As such, insecurity associated with such work relates to severe anxiety, fear, and serious mental health issues, including harassment, insults, and even death from retaliatory measures taken by clients or by rivals [6]. A precondition for scheduling is prolonged operation to increase income, resulting in fatigue and stress; consequently, a cyclical relationship develops between schedule control, anxiety about losing that control, and status in the platform ranking. Reports of high-pressure conditions with mandatory working hours or excessive shift lengths further characterize the gig economy; thus, although the appearance of scheduling flexibility may exist, efforts to revise, prioritize, or escape from such situations become stressful day-to-day burdens [4]. In addition to the concerns noted above, gig workers with irregular operation patterns shift locations frequently, compounding the burden. Mechanisms for entry or exit are more complicated than for owners or apartment managers, risking health disorders and psychological incompatibility. Such properties tend to clash with the ruggedness of intermittent gig operation. Consequently, specific interruption rates per job and per customer, together with employee stock purchase plans, exhibit a positive correlation with general fatigue. Overall, even though liberal on the surface, gig conditions embody an unconventional form of capricious ease that is considerably less casual than office work [5]. Gig workers are thus subject to conditions in which the statistical presence of workload is significantly lower than for salaried employees, although perception conditions and algorithmic scrutiny remain exhaustively intense [5].

## Occupational Safety and Security

The gig economy, where flexible jobs are facilitated by digital platforms that connect providers and clients, has come to dominate labour markets worldwide, generating both enthusiasm and unease among workers, platforms, and policymakers alike. A distinctive concern relates to gig work's potential impact on occupational health [3].

When people engage in work for pay, certain hazards typically exist that can affect their health, safety, and well-being [4]. The factors that shape these occupational risks and the health outcomes that accrue as a result are poorly understood in the case of gig work. Scholarly attention has focused on the gig economy's myriad impacts, yet insights into its implications for occupational health have remained considerably more limited than for broader economic or social issues [4]. Nevertheless, an emerging body of evidence is beginning to provide valuable information on the health risks associated with gig work and the factors shaping those health outcomes. Knowledge of these issues among researchers and practitioners is critical to inform evidence-based decision-making by policymakers tasked with regulating gig work and by platforms responsible for establishing work conditions [3]. The formation of countermeasures to mitigate unhealthy conditions cannot proceed without an understanding of risk factors, which remain obscure in both academic literature and policy discourse [6].

## Determinants and Moderating Factors

The state of precautionary legislation toward occupational safety and health is particularly important due to a combination of the lack of regulations, the vulnerable position of workers, and the legal connections between gig-work platforms and employees [11]. Independent contractors are less protected than employees, and coverage can differ even if workers receive equivalent protections [6]. While gig platforms often resemble multi-tenant marketplaces, popular legal frameworks classify them as two-sided markets that do not encompass employment models such as couriers, drivers, and cleaners [7]. Legislators in countries such as the United States and Canada have acknowledged the risk that low-precarity forms of gig work may represent for both health and safety. However, debates about the nature of these protections often overlook the fact that gaps-existing ones, and protection after-the-fact protections remain significant determinants of the working terrain for independent contractors [9].

## Employment Status and Legal Protections

The rise of so-called "gig work," in which people carry out tasks as independent contractors instead of as employees, has brought the topic of occupational health to the forefront of discussion[4]. Occupational health can be conceptualized as dealing with all the confounding factors of work that affect people's physical and mental health, including work conditions, work organization, workplace design, work–life balance, ability to exercise voice, and access to care[3]. Gig work is characterized by the plurality of organizational forms that it encompasses. State provision of care is often the only option in the absence of privately offered health mutuals or insurance; instead, workers may benefit from such support during the time gig work is undertaken alongside other jobs. The apparent need for self-provision, in turn, strongly corresponds to the option for coverage that is portable, given the intrinsic nature of gig work as a mostly additional activity [9]. Telehealth presents a great opportunity to improve access to, and involvement with, care delivered at a distance. Stigmatization of certain health situations as the ones not to be disclosed, presents a barrier [7]. Cost presents another hurdle. Numerous studies show that an important fraction engages with the job intermittently and, in some cases, regularly. A person can fulfill the title of "gig worker" within traditional and non-gig working time frames, such as after business hours or during weekends. There is also a significant share of gig workers who have a sufficiently high level of autonomy concerning their time offer on platforms or the time allocation between platforms and non-platform jobs [8]. The time and flexibility for exercising other non-gig occupations or activities play an essential part in the motivation to adhere. The fact that the job can be approached at unpredictable moments brings about a certain level of unpredictability concerning time commitment. Nevertheless, there is high regularity associated with the time frame over which gigs can be accepted and arranged. A substantial share of gigs seems to involve fundamentally different shifts involved at a task level encompassing indistinct time arrangement on a micro scale, although the broader task is less variable[9].

## Access to Healthcare and Social Insurance

Globally, gig-platform work is expected to grow in prominence as both businesses and workers take advantage of its operational flexibility, increased income opportunities, and diversification of revenues [3]. However, despite the growing prominence of gig work, limited high-quality data on workers' occupational safety and health exist. Gig workers tend to report worse working conditions than other workers do, leading to several suggestions that gig workers have poorer occupational health than those with traditional jobs [1]. In Latin America, projected gig-platform work is expected to engage up to 16 million workers by 2025 and could accommodate an even larger number of workers under temporary arrangements. In total, the ILO estimates that 20 per cent of workers in the region perform some form of platform work [7]. Expanded coverage of safety and health during the pandemic for the workers involved in deliveries has also highlighted the need for greater attention to their working conditions, and the level of access to and actual utilization of occupational safety and health facilities already remains a critical

challenge from a public policy perspective. Gig jobs have therefore attracted increased attention from the academic and policy communities, together with the associated safety and health concerns [8]. Nevertheless, the dominant focus in the gig economy remains on the economic aspects of the phenomenon [2].

## Work Organization, Scheduling, and Autonomy

Gig-economy work organizations use an array of alternative work arrangements, schedules, and employee statuses consistent with gig-work definitions [8]. Variations in shift patterns are widespread among gig workers, with arrangements defined by factors such as work hours, days on the job, duration at task, and finality of contracts. Alternative arrangements may consist of two condensed workdays, extensive intermittent work over several weeks, or enduring contracts over an extended duration where precise completion timing remains unspecified yet still categorized as gig work [7]. Flexibility, uncertainty, and autonomy substantially influence occupational health variables. Additional risk factors derive from workload, procedural and outcome fairness (eighteen hourly-management workers receiving sign-off approval on task completion every two weeks versus agreement with performance standards determined yearly through algorithmic evaluations), performance metrics linked to or independent of fee distributions, and imposition of work per unit period (temporal pressure), or engagement timing at workers' discretion and unlinked to an hourly rate (non-temporal pressure). Gig-economy job organizations accommodate convenience and preferences, but prolonged disruption and excessive temporal pressure across dimensions have detrimental occupational-health repercussions [7].

## Measurement and Evidence

Wholly insufficient data restricts understanding of health outcomes in gig work, especially in low-, middle-, and high-income settings [1]. Cross-sectional studies dominate evidence portfolios, precluding causal inference [4]. Measurement approaches frequently exhibit inconsistency, complicating comparability and integration across studies. Convergence and divergence across studies reflect the resultant complexity of synthesizing evidence. Fresh initiatives fostering long-term and intervention-reactive designs, robust causal inference tactics, standardized assessment of health determinants and experiences, and coordinated data-sharing accords could expand empirical foundations supporting an equitable future for occupational health in the gig economy [9].

## Data Sources and Methodologies

Workers in the gig economy, sometimes referred to as platform, on-demand, or sharing economy, offer their services via online platforms or mobile apps. Data on gig work comes from surveys, administrative and web-scraped data, and biometric sensors or other core parameters like body temperature or heart rate [5]. Triangulating different data types enhances understanding of gigs and platforms [4]. A major knowledge gap in the literature and data provision arises from limited, one-shot, cross-sectional, or national datasets that fail to capture variation across geography and over time [8]. The standard approach provides only a snapshot of the economy and relies disproportionately on countries already heavily involved. Most estimation methodologies are observational, notably survey-based, while randomised controlled trials are rare [8]. Most empirical studies on the gig economy are still emerging or in initial analysis, and cross-sectional econometric studies typically resort to national or aggregate datasets that remain historically informed and easily accessible to researchers 3. Such data bear little or no relation to current platforms, gig work, or practices and cannot be linked to a sufficiently wide range of country-specific social or labour-market features, undermining the studies' relevance and applicability [8].

## Key Findings from Empirical Studies

A review of the empirical literature reveals that the overall health profile of gig workers is negative and, in some respects, highly concerning [3]. This conclusion derives from studies assessing over 20 platforms across a range of countries, including the USA, Canada, the UK, Australia, India, and Singapore, and involving different methods. Nevertheless, two generalizations can be made about the effects of gig work and independent contracting, both of which take into account the contexts studied and the indicators considered [2]. First, while adverse health effects are widespread, they are neither universal nor uniform. In general, gig workers enjoy better physical health but worse mental health than traditional employees [7]. These conclusions apply to several COVID-19 and non–COVID-19 studies based on representative population surveys in Canada and the USA [9]. In contrast, the findings of a wide-ranging global survey were less consistent and varied according to the platform, although several indicators fell below the levels reported for traditional jobs [7]. By contrast, studies focusing on platform or independent-work–specific samples have documented limited or negligible differences in self-reported health and well-being compared with other groups [13].

## Gaps and Limitations in Current Evidence

Occupational health in the gig economy exhibits substantial gaps in the evidence base. The broad dimensions of gig work have been the subject of considerable investigation; by contrast, significant aspects of the impact of gig work on occupational health remain relatively underexplored, and research on the topic is hampered by limitations in the available empirical evidence [3]. Gig work represents a compelling example of the modern economy, undertaken by 8–21% of the total workforce depending on age and characteristics [9]. Yet, gig work activity remains either poorly measured or inadequately represented in most of the available datasets [1]. A major limitation across the available empirical studies of gig work and health is the prominence of pure cross-sectional designs. Such studies permit the tracing of correlations among covariates, health states, and gig work exposure at a single moment in time, but they cannot support robust claims about causality, yet causal claims are often advanced [5]. Moreover, measurement of gig work coverage is inconsistent across the empirical literature. Some studies leverage a single question from survey instruments to identify gig work involvement, while others include broad definitions that may encompass sector-specific exposures with distinct risk profiles [5].

## Policy and Practice Implications

The foundations of the Digital Economy can also be traced back to the advancement of Information and Communication Technologies (ICTs) [8]. The phenomenon of "disintermediation" has assisted the shrinking of the human footprint in many value chains. The growing interest in the Gig economy by researchers and institutions is partly due to its unparalleled growth around the globe since it is affecting a large share of the workforce and is increasing in terms of size and pervasiveness [8, 9]. The emergence of the Gig economy, Micro-tasking, and Open-Source Crowd-sourcing Platforms has redefined the meaning, scope, and delivery of Occupational Health (OHS) [2, 3]. The original conception of OHS did not cover the 'self-employed' workers who were excluded from the ambit of protection, even though occupational hazards affected them severely [8]. In 2021, independently of the legislative/security definitions used by different Economies, one-third of the OHS policy protections globally stood in favour of either the "Gig" Economy or Open-Source Crowd-Sourcing Platforms. As occupational safety and health (OSH) are incomplete without the following three components, the Focus of the OSH (Occupational Safety with Health- approach used in the analysis) for the Gig Economy has significant relevance for understanding the situation of the stakeholders. Risk to Mental Health and Well-being, Energy, and Time Management are addressed by the OHS Political Agenda, and OHS sensors/safety wearables have started to appear/chatbots too for Safety Protocol engaged with Self-employed Gig Worker [7].

## Regulatory Frameworks and Workforce Protections

The regulatory landscape for gig workers is complex and varies across jurisdictions [10]. Governance challenges stem from extensive contractual privacy clauses about "big data" and "people analytics" [3]. Affording gig workers minimum-pay protections remains controversial. Proposals to exempt gig workers from minimum-pay statutes also attract attention [6]. Excluding gig workers from systems that permit crime reporting without retaliation or access to workers' compensation is problematic [3]. Legislative frameworks designed to protect basic worker rights emerged to counter unbalanced power relationships between workers and employers. Although non-standard workers typically do not enjoy the same level of protection as employees, protection frameworks are paramount in the absence of such status [4]. Fundamental, core, or limiting worker protections include at least the right to harvest and collect occupational health data [6].

## Occupational Health Services and Access to Care

In developing, implementing and maintaining suitable and accessible occupational health-services platforms, and universal accountability mechanisms aimed at the provision of occupational health benefits for gig workers need to be prioritised [1]; Portable entitlement to occupational health services and social protection for gig-platform workers, especially independent contractors, is essential when they remain default-eligible, since they do not possess access to such services through an employer[4]. Dedicated on-platform occupational health services that guarantee minimum standards of technical quality and occupational health safeguards gain pertinence [5]. The absence of a full-time contract and stigma constitute barriers that tend to limit access and resort to ideally supportive on-platform occupational healthcare provision, which is nevertheless likely to remain more effective in reducing such barriers [6].

## Workplace Designs, Tools, and Safety Protocols

Despite the notable absence of empirical studies documenting the health and well-being of gig workers, circumstantial evidence suggests substantial risks stemming from their environmental and organizational conditions [7]. These elements not only shape their exposure to job-related hazards but, through a variety of underlying mechanisms, directly influence their mental and physical health [8]. Specifically, ubiquitous

environmental and occupational stressors, including erratic scheduling, algorithmic management, having to juggle multiple platform accounts, and a repetitive 'hustle' mentality, can generate destabilizing fluctuations in worker incomes and give rise to strong feelings of job insecurity[14]. Collectively, these adverse dimensions of the gig economy appear to exert a constraining influence on worker agency, playing out through reduced autonomy, intensified job tracking, unprecedented earnings uncertainty, a narrowing of free time, and the coalescence of parallel or secondary hustles that constrain coparticipatory agency across platforms and spatialities 6. Gig workers' specific contractual arrangements and access (or lack of access) to healthcare coverage, sick pay, and other critical components of social and occupational safety nets vary substantially; certain gig workers may have virtually no access to social safety nets, even as income insecurity rises[8]. Data suggesting that gig work often lacks comprehensive contractual frameworks further underscores existing insecurities [3]. Current forms of occupational health and safety (OHS) coverage may therefore inadequately protect gig workers. Business models that amplify occupational safety risks, increase workers' exposure to violence or harassment, and diminish the likelihood of obtaining supportive services or protections represent one category of risks to physical health [5].

## Employer and Platform Responsibilities

Gig-work arrangements elicit debate about the responsibilities of in-platform employers and other operators that control the "gigs" and marketplaces [10, 11]. While legal views vary, many countries classify platform work as independent contracting, placing limited obligations on platforms or clients; yet some treat them more like employers, triggering broader duties. Authorities in the United States, European Union, Canada, and Organisation for Economic Co-operation and Development (OECD) countries have proposed broad occupational-health obligations based on platform workers' health exposure and dependency on these arrangements [1, 9]. These principles emphasize: platform transparency about work patterns, schedules, algorithms, and health hazards; a duty to provide timely access to safety, health, and wellness resources, along with reporting mechanisms; and incentives for clients and contractors to adopt safe practices and avoid health hazards on platforms offering occupational flexibility [6, 8].

## Interventions and Best Practices

The gig economy can present unique challenges for occupational health. Engaging gig workers from diverse employment sectors, gig platforms can design scalable interventions that promote well-being while remaining flexible to individuals' varied conditions and preferences [2]. Such measures can be embedded into existing tools, minimizing disruption. Adopting a systematic approach to monitoring, reporting, and preventive care enhances these efforts by enabling assessment of health exposures and effects [3]. These actions complement regulatory safeguards without substituting for them. Health-related needs among gig workers vary widely. Systems that provide customized preventive care, crucially informed by conclusive evidence of specific requirements, maximize relevance and effectiveness. Even when assessing individuals collectively, established practices can consider delivery options, access facilitation, and stigma reduction to enhance targeting and uptake [6]. Clear definitions establish a foundation for organizational incident-monitoring frameworks. Instruments for reporting, tracking, and responding to individual occurrences, such as dashboards, can contribute additional protection. Effective description, prioritization, and investigation of reported events yield insights for collective health-improvement strategies. Platforms offering paid sick leave or other compensation should be encouraged to disclose usage and entitlements, incentivizing reporting across more tentative jurisdictional criteria [7].

## Monitoring, Reporting, and Incident Response

Occupational accidents and diseases are usually overlooked in discussions of gig work. Yet precise definitions of accidents and incidents, along with systematic reporting and incident response mechanisms, play an essential role in an effective occupational safety and health (OSH) policy framework. In the absence of such measures, a full understanding of OSH risks is unattainable, the implementation of preventive actions is compromised, and the potential for shared learning from incidents is diminished [1]. Completion of mandatory risk assessments is similarly hampered. Incident definitions help articulate what types of events constitute health-related incidents and require notification, thus clarifying the parameters of an incident-response framework [11]. Well-designed reporting mechanisms, such as online channels, real-time dashboards, and simplified forms, enable quick and straightforward submission of information about health-related incidents, with the additional potential for anonymization to facilitate disclosure of sensitive information. Corrective actions recommended by the organization, based on an analysis of the reported event, further reinforce the utility of the reporting process. Robust design of both monitoring and reporting functions contributes to the effectiveness of incident-response initiatives [12].

## Health Promotion and Preventive Care in Gig Work

Gig workers who are exposed to chronic disease risk factors can benefit from employer-supported health promotion and disease prevention programs. American gig workers have higher rates of conditions linked to chronic disease than standard workers [12]. Workers in lower-pay, less-skilled gig occupations report even higher rates, as do platform workers in middle-income countries [1]. Health promotion programs and preventive healthcare services, such as vouchers for wellness services, online consultations, fitness sessions, vaccination campaigns, and health screening, can effectively reduce risk factors (Thompson et al., 2020)[11]. A wide range of specific services may be provided, from health education materials with links to affordable local service providers to group health education sessions on risk factors for obesity, tobacco use, and diabetes [12]. For preventive healthcare, programs may assist with fitting into existing national health systems rather than establishing parallel ones; examples might include textured references to national well-baby vaccination schedules and links to national screening programs for early detection of cervical cancer, prostate cancer, or tuberculosis [15].

## Equity, Inclusion, and Global Perspectives

The global gig economy is growing fast, particularly after the COVID-19 pandemic; at the same time, gig-work occupational health is understudied [12]. Equity and inclusion issues arise at both the country and individual levels. Across high-income countries, evidence suggests that younger workers face greater health risks when gigging, which may relate to both lower wages and a greater prevalence of certain mentally taxing job types [1]; but this demographic is reversed in lower-income countries like Peru, Nigeria, and Vietnam, where health outcomes are worse for workers aged 18 to 30 [13]. Many migrants, meanwhile, hold gig jobs that do not match their skills or education levels, and on average, they report higher stress and lower job satisfaction than native workers. Globally, the burden created by occupational health inequities is increasing [12]. Precarious employment arrangements lead to conditions such as social isolation and significant mental-health problems [13]. Intervening now to resolve excluded migrant and ethnic minority workers' greater needs in the gig economy can prevent further entrenchment of inequities [11]. In many areas, the gig economy is growing faster than other segments of the labor market; designing policies that promote inclusion and equity can therefore yield broad-based gains while maximizing future opportunities [10].

## Socio-demographic Disparities in Health Outcomes

Significant sociodemographic disparities exist in health outcomes among gig workers [14]. Age emerges as a crucial predictor, with younger gig workers, especially those under 25, reporting poorer health than their older counterparts. Gender differences are also evident, as female gig workers experience less favorable physical and mental health outcomes relative to their male peers [15]. Educational attainment further delineates sociodemographic divides; for instance, platform workers possessing only a high school diploma face elevated physical risks compared to equally educated on-site workers in other sectors [14]. Other sociodemographic factors, such as race/ethnicity, migrant status, skill level, and income, continue to shape the occupational health landscape, necessitating further investigation into gig-worker exposure and vulnerability. Age, gender, race/ethnicity, and legal status have long been recognized as critical determinants of occupational safety and health in traditional employment [13]. These characteristics influence both the likelihood of exposure to specific hazards and the degree of protection from adverse outcomes. By extension, they can be expected to work similarly in the context of gig work. Research conducted in the United States indicates substantial inequities in physical exposures across demographic and socioeconomic groups, leading to differential risks of work-related degeneration and declining well-being [14]. Such disparities in occupational exposure, particularly in informal sectors lacking conventional oversight, are unlikely to be captured by existing administrative datasets. Consequently, additional research is essential to understand the broader implications of sociodemographic and economic factors on the shifting landscape of occupational health [13].

## International Comparisons and Policy Variations

Gig economy developments are frequently discussed in different countries, and diverse policies are implemented to regulate emerging forms of work [15]. Beyond government-funded social insurance systems for non-employee workers, case studies show a range of legislation from different nations. Executive decrees in Spain established new rights for digitally mediated platform workers, while draft regulations were proposed to the legislature in Mexico. In the United States, Presidential Executive Order 13881 directed federal agencies to prepare policy recommendations for improving access to social benefits for gig workers [13]. Platforms also play a role in facilitating access to health services for gig economy workers. Data-sharing agreements between Uber and several US cities seek to provide information on driver supply, earnings, and trip patterns, with the aim of informing transportation planning or regulatory policy [13]. These examples represent noteworthy initiatives and highlight

the growing interest of policymakers in regulating this form of work [14]. However, different interventions make contrasting assumptions about the status of gig economy workers; while some perceive the need for additional supports, others – particularly in Europe – aim to impose stricter employer obligations. In fast-evolving labour markets, the official definition of the gig economy often lags behind economic realities [13]. Further research is required to clarify the boundaries of this phenomenon and its various forms. The types of protection afforded by public legislation depend on these definitions and differ considerably between countries [3].

## Research Agenda for Occupational Health in the Gig Economy

Occupational health is gaining attention in the gig economy, following the COVID-19 pandemic. Innovative scientific methods and approaches are required to investigate the phenomenon and formulate evidence-based recommendations [8]. By collaboratively addressing various issues, researchers, the private sector, decision-makers, and clinicians can jointly acquire knowledge and drive change in this growing sector [7]. Critical elements to prioritize include the survey of occupational safety and health (OSH) experiences from both platforms and workers, as well as the exploration of OSH challenges in the gig economy [14]. Addressing these priorities will provide an overview of current situations; identify knowledge gaps to professionals both within and outside the sector; deliver insights into platform- and worker-specific OSH challenges for future activities; underline the importance of remaining attentive to the sector as it continues to evolve; and promote cross-disciplinary integration for more comprehensive analysis of a rapidly changing phenomenon[15]. Evolving ways of working have led to an increasing desire to address non-traditional forms of work through established regulations. This is particularly noteworthy in the gig economy, where the vagueness of the regulation and conceptualization of work are key impediments to gaining traction [1].

## Methodological Innovations

Occupational health in the gig economy remains an important and timely topic as the gig economy has grown rapidly in recent years [10]. The gig economy encompasses new forms of labor relations created by new technologies, regarded as distant and fragile. Emerging platform-based work has changed the contours of work within the framework of the gig economy [13]. Empirical evidence about gig work is scarce; its existence extends to a wide variety of jobs in diverse sectors, and it is inextricably linked with issues of deindustrialization, low pay, and inequality. Worker well-being is impacted by income vulnerability, at-risk employment, and shrinking labor demand in various regions [9]. Safe and healthy work has become essential to sustainable development. New policies must be defined to provide protection to gig workers in order for such workers to exercise their basic rights to health and the right to enjoy work free from abuse, harassment, and discrimination [9]. High-quality preventive health and safety measures are vital to a stable and lasting economy [14]. In parallel to the rapid expansion of gig work, maintaining a healthy workforce has risen to a critical level in some countries and regions. Emerging application-based workers, considered the first gig workers, are among the unhappiest workers in the world. Trustworthy prevention models are necessary in order to establish a safe working environment for independent gig workers. Well-studied prevention efforts must be undertaken to cultivate safe gig work. Policy-makers, employers, and other stakeholders often desire a deliberate understanding of the situation and an appreciation of practical models in order to propose plausible solutions [15].

## Ethical Considerations

The ethics of researching occupational health in the gig economy must navigate the intersection of sensitive worker data with the typical challenges of occupational health research in general. Key ethical considerations include obtaining informed consent, safeguarding data privacy, limiting data retention, and actively involving gig workers in the research process [1]. Obtaining consent, protecting privacy, and limiting data retention: Those studying gig work need to pay particular attention to obtaining informed consent for data use and to protecting the confidentiality of sensitive, personally identifiable information [4]. Where possible, researchers should limit the duration of data retention to the minimum necessary for analysis and dissemination and stipulate data de-identification protocols that protect private data, including identifying information related to the individual, the working relationships, socio-demographics, whereabouts, payouts, and activity check-ins in longitudinal studies [7]. Actively involving gig workers in designing and conducting studies: The engagement of gig workers as co-designers and co-producers of knowledge can refine research questions, ensure that the issues framing the research actually resonate with the workers themselves, and enhance the credibility and legitimacy of findings. Involving workers in implementing interventions and communicating results further promotes a collaborative and participatory approach that can impact workers' overall well-being [14].

## Stakeholder Collaboration

Gig work also poses considerable and highly varied health risks to workers around the world, regardless of geographic context [14]. Across different job categories, platforms, and study settings, the available evidence suggests that gig work has significant negative consequences for a wide range of physical and mental health outcomes. Vulnerability to risk exposure occurs concurrently through multiple exposure types, such as both physical hazards (accidents, sleeping issues, energy risks) and psychosocial stressors (job insecurity, isolation, anxiety), elevating the severity of impact [3]. These joint exposures and the resultant patterns of health deterioration are thus distinct from those characterizing non-gig work, where risk is more likely concentrated in a single category. Even within the confines of the gig economy, the degree and nature of exposure differ substantially by sector, for instance, between delivery, transportation, and knowledge-related services, creating highly heterogeneous risk portfolios. By combining separate studies into a single integrated overview of the health risks associated with gig work, policymakers and practitioners can rapidly acquire a comprehensive understanding of the multifaceted vulnerabilities faced by gig workers, despite the considerable remaining gaps and inconsistencies in the empirical literature [15-20]. The overall profiling of exposure types, specific hazards, and the associated health outcomes facilitates the identification of those sectors, platforms, and worker characteristics that elicit the greatest attention when designing interventions to mitigate adverse effects. Alongside the direct specification of hazards and channels through which gig work impinges on health, this broader analysis helps illuminate causal mechanisms, trace routes for intervention, and flag opportunities for deeper inquiry into underexplored areas [1].

## CONCLUSION

The literature reveals that the gig economy, while fostering flexibility and innovation in labor markets, has generated profound occupational health implications. Gig workers often experience job insecurity, limited access to health insurance, irregular income, and inadequate workplace protections. These vulnerabilities are compounded by algorithmic management systems that heighten stress and reduce worker autonomy. Traditional occupational health frameworks designed for standard employment remain ill-suited to address these emerging challenges. To ensure equitable protection for gig workers, governments, employers, and international organizations must reform labor policies to include digital and informal workers within the ambit of occupational health and safety laws. Strengthening social protection systems, promoting collective bargaining rights, and establishing platform accountability are critical to mitigating health risks. Ultimately, safeguarding the well-being of gig workers is essential for achieving decent work and sustainable economic development in an increasingly digitalized global economy.

## REFERENCES


1. Ruiz M, Vives A, Alvarez V, Diaz I, Zaupa A. Health protection among own-account and platform workers during COVID-19 in Chile. The PWR project. European Journal of Public Health. 2022 Oct 1;32.
2. Mohamed SB, JAAFAR N. Job Perceptions among Gig Workers: The Perspective of Online Sellers. WSEAS Transactions on Computer Research. 2023;11:181-8.
3. Paul-Chima UO, Nneoma UC, Bulhan S. Metabolic immunobridge: Could adipose-derived extracellular vesicles be the missing link between obesity, autoimmunity, and drug-induced hepatotoxicity?. Medical Hypotheses. 2025 Sep 28:111776.
4. Hawley AJ. Regulating labour platforms, the data deficit. European Journal of Government and Economics (EJGE). 2018;7(1):5-23.
5. Sariraei SA, Chênevert D, Vandenberghe C. What is on your gig radar? Toward a hierarchical structure of coping. International Journal of Environmental Research and Public Health. 2022 Oct 31;19(21):14219.
6. Apouey B, Roulet A, Solal I, Stabile M. Gig workers during the COVID-19 crisis in France: financial precarity and mental well-being. Journal of urban health. 2020 Dec;97(6):776-95.
7. Paul-Chima UO, Nnaemeka UM, Nneoma UC. Could dysbiosis of urban air microbiota be an overlooked contributor to pediatric asthma and neurodevelopmental disorders?. Medical Hypotheses. 2025 Sep 12:111758.
8. Schäfer K, Görke A, Hesemann L, Franke T, Nitsch V, Heckwolf C, Mertens A, Brandl C, Zweck A. Digital platforms: Perceived criteria of success, importance of work design, occupational safety and health for present and prospective digital platforms. Work. 2022 Aug 11;72(4):1593-610.
9. Felix B, Dourado D, Nossa V. Algorithmic management, preferences for autonomy/security and gig-workers' wellbeing: A matter of fit?. Frontiers in Psychology. 2023 Feb 24;14:1088183.

10. Ugwu OP, Ogenyi FC, Ugwu CN, Ugwu MN. Gut microbiota-derived metabolites as early biomarkers for childhood obesity: A policy commentary from urban African populations. Obesity Medicine. 2025 Sep 1;57:100641.
11. Kässi O, Lehdonvirta V. Online labour index: Measuring the online gig economy for policy and research. Technological forecasting and social change. 2018 Dec 1;137:241-8.
12. Auguste D, Roll S, Despard M. Democratizing the economy or introducing economic risk? Gig work during the COVID-19 pandemic. Work and Occupations. 2024 Nov;51(4):550-606.
13. Cherry MA, Aloisi A. Dependent contractors in the gig economy: A comparative approach. Am. UL Rev.. 2016;66:635.
14. Nilsen M, Kongsvik T, Antonsen S. Taming Proteus: Challenges for risk regulation of powerful digital labor platforms. International Journal of Environmental Research and Public Health. 2022 May 19;19(10):6196.
15. Ugwu OP, Okon MB, Alum EU, Ugwu CN, Anyanwu EG, Mariam B, Ogenyi FC, Eze VH, Anyanwu CN, Ezeonwumelu JO, Egba SI. Unveiling the therapeutic potential of the gut microbiota–brain axis: Novel insights and clinical applications in neurological disorders. Medicine. 2025 Jul 25;104(30):e43542.
16. Remington PL, Brownson RC. Fifty years of progress in chronic disease epidemiology and control. MMWR: Morbidity & Mortality Weekly Report. 2011 Oct 8;60.
17. Van Doorn N, Ferrari F, Graham M. Migration and migrant labour in the gig economy: An intervention. Work, Employment and Society. 2023 Aug;37(4):1099-111.
18. Andrasfay T, Raymo N, Goldman N, Pebley AR. Physical work conditions and disparities in later life functioning: Potential pathways. SSM-Population Health. 2021 Dec 1;16:100990.
19. Ugwu CN, Ugwu OP, Alum EU, Eze VH, Basajja M, Ugwu JN, Ogenyi FC, Ejemot-Nwadiaro RI, Okon MB, Egba SI, Uti DE. Sustainable development goals (SDGs) and resilient healthcare systems: Addressing medicine and public health challenges in conflict zones. Medicine. 2025 Feb 14;104(7):e41535.
20. Duggan J, Sherman U, Carbery R, McDonnell A. Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. Human resource management journal. 2020 Jan;30(1):114-32.

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