Recognizing Hazardous Working Conditions in Nonstandard Employment Arrangements

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Abstract

The evolving nature of work organization and the shift away from standard employment relationships are profoundly affecting the health and safety of workers. As nonstandard employment arrangements grow in the labor market, there is need for greater understanding of hazardous working conditions beyond the traditional occupational hygiene health and safety context. Concepts related to nonstandard employment arrangements such as the fissured workplace, precarious labor, and contingent employment have all sought to explain the health implications of a changing labor market. While each of these terms have some overlapping attributes, and each have been associated with increased health risk in the workplace, their lack of clear conceptual definitions hampers their ability to explain these associations. We identify three key employment conditions which may clarify the adverse health outcomes associated with nonstandard employment arrangements: the breakdown in full-time work, permanent contracts, and direct employer-employment relationships. We explore how nonstandard employment arrangements impact health, including review of common definitions of employment types and proposed mechanisms by which they produce work-related health risks.

Introduction

Protecting workers from physical, chemical, biological, and psychosocial hazards in the workplace is at the core of the occupational health and safety profession. However, the nature of work has been largely transformed in the past several decades. Advances in technology, communications, and transportation promote globalization and increasingly favor the flexibility provided by nonstandard employment arrangements (NSA) in responding to variable labor needs in competitive global markets (Kawachi, 2008; Vives et al., 2010), and there is increasing awareness that the growth of nonstandard employment arrangements, also called nontraditional, alternative, flexible, or atypical work, comes at the cost of worker health and well-being (Scott-

Research linking changes in the structure of employment to adverse health indicators is emerging; though, the ways in which the work context is described is highly variable. There is now a robust literature—primarily emanating from fields such as economics, industrial relations, and sociology—documenting the decades-long labor market transition away from the SER-like arrangements towards nonstandard employment arrangements. The health-based body of literature on the impact employment arrangement and work organization on worker health and safety is growing. Nevertheless, the lack a uniform taxonomic system of NSAs and an unclear understanding of the mechanisms for increased risk make it difficult for occupational health practitioners and researchers to appropriately translate this literature into evidence-based interventions for diverse populations of nonstandard workers in a growing spectrum of industrial and service-based industries.

The lack of a clear classification system for nonstandard workers creates confusion in how to research and interpret findings for these disparate populations of nonstandard workers. Nevertheless, analyzing the hazardous working conditions created by the break breakdown in standard employment relationship can inform occupational health and safety professionals on additional risks incurred by workers in nonstandard arrangements. Viewing nonstandard employment arrangements from this perspective helps to clarify potential mechanisms for increased health risk and sheds light on areas of significant gaps in evidence-based understanding of the impact of employment arrangement on health.
Changing Nature of Employment Relationships

In the decades since the passage of the Occupational Health and Safety (OSH) Act of 1970, the evolving nature of work organization and the shift away from standard employment relationships are profoundly affecting the health and safety of workers. While standard employment relationships still make up the majority of jobs in the US, the increasing pressure on businesses to maximize profits and minimize costs through labor flexibility is favoring nonstandard employment arrangements (Kim, Kim, Park, & Kawachi, 2008). The size of the nonstandard work force is challenging to quantify due to varying definitions and surveillance methods of nonstandard employment arrangements. Most estimations agree NSAs are increasing in the labor force, contributing an estimated 8%-18% of jobs, and account for much of the new growth in employment (Howard, 2017; Katz & Krueger, 2015). However, The U.S. Government Accountability Office gives a wider estimate that contingent workers, defined as any worker differing from the standard employment relationship, fill 5%-30% of employed workers (2014).

Concepts related to nonstandard employment arrangements such as the fissured workplace, job insecurity and contingent employment, the ‘gig-economy’, ‘work organization’, and a more holistic concept, ‘precarious employment’, have all been used to try to get at the health implications of the changing nature of work. While each of these terms have some overlapping attributes, and each have been associated with changes in work exposures and health risk, their lack of clear conceptual definitions hampers their ability to explain the apparent health risks with which they are associated. Greater definitional clarity from the perspective of employment arrangement offers context for recognizing hazardous working conditions and potential occupational health disparities (Howard, 2017; Landsbergis, Grzywacz, & LaMontagne, 2014).
In addition, the mechanisms by which these organizational characteristics result in health effects of working populations have not been adequately identified. We propose differentiating nonstandard from standard workers based on three core concepts of employment arrangement: the presences of full-time versus part-time scheduling, permanent versus non-permanent contracts, and direct versus indirect employer-employment relationships at the worksite. These three key dimensions of employment arrangements are broadly accepted in influencing employment arrangements (Cappelli & Keller, 2013) but will provide a novel framework for understanding hazardous working conditions faced by nonstandard workers and mechanisms for increased risk. Furthermore, parsing out how NSAs differ from standard employment relationships illuminates lesser recognized hazards important for occupational health practice and research.

Key Dimensions of Employment Arrangements

Nonstandard employment arrangements are identifiable based on their departure from the standard employment relationship, as shown in Figure 1. NSAs can take on any configuration of the breakdown in permanent, full-time, and/or direct employment, meaning a nonstandard worker could be uniquely non-permanent, such as for a traditional non-permanent temporary worker hired directly by a company, or could be a part-time, non-permanent, and indirectly employed temporary worker employed by a temporary employment agency. Workers in the informal sector, such as day laborers, share similar consequences for health and well-being as workers in other nonstandard employment relationships, however, for the purposes of this paper, we are only discussing employment arrangements within the formal sector.
Figure 1. Three key dimensions by which nonstandard employment arrangements may differ from the standard employment arrangement.

The breakdown in one or more of these three key dimensions (permanent, full-time, and/or direct employment) can classify most nonstandard employment arrangements as compared to the standard employment relationship. We propose the three key dimensions of employment arrangements are:

- **Full-time versus part-time work**  
  Full-time work, generally accepted as approximately 40 hours per week or a salaried position (Howard, 2017; Van Aerden, Moors, Levecque, & Vanroelen, 2014), confers an array of benefits influencing worker well-being, such as health insurance, retirement savings opportunities, paid vacation, and sick leave. Many part-time workers lack access to these fringe benefits and are faced with low and fluctuating pay checks due to low hourly rates and limited, variable schedules (Campbell & Price, 2016). Some workers in part-time positions may prefer to have more hours but are unable to acquire them.
• **Permanent versus non-permanent work**  Permanent contracts or the expectation of on-going employment adds a measure of security and progress to daily work. Non-permanent contracts comprise working a limited tenure for an employer or at a worksite.

• **Direct versus indirect employer-employee relationship**  Direct employer-employee relationships maintain that a worker is employed, overseen, and under the responsibility of one firm (the employer). Indirect relationships may have the worker employed by one firm, the employer, but working on the site of another firm, the host site. Third-party agencies may employ workers and place them at host sites.

The term ‘nonstandard employment arrangement’ is a broad moniker used to describe any of the dozens of employment arrangements which differ from the standard employment relationship, primarily in terms of the three key dimensions described previously. However, when specific terms are used to describe employment arrangements, they sometimes overlap, or lack clarity. Common terms for NSAs used in health research include temporary workers who have little expectation of an on-going employment relationship, agency workers who are temporary workers that work for a third-party agency, and contracted workers like independent contractors or gig workers who are lack permanent contracts with employers. All face working relationships where employers have variable responsibilities for their health and safety. Furthermore, other common terms used to characterize NSAs which are more descriptors rather than definitive arrangements include: contingent (neither full-time, permanent or directly employed (U.S. Government Accountability Office, 2014)), precarious (often describing low quality or non-permanent work), and fissured employment (the fissuring refers to the breakdown in the standard employer-employee relationship).
Currently, there is no consensus over a classification system for employment arrangements. A prime example of the challenge of studying the health risks for nonstandard workers is the wide body of literature on temporary workers. Nonpermanent workers in direct relationships with their employer and those employed by a temporary agency may both be termed ‘temporary’ workers when in reality, they may be very different in terms of occupational health and safety exposures (Cappelli & Keller, 2013). The conflicting health evidence for temporary employment arrangements illustrates the difficulty in identifying the effect of nonstandard employment arrangement on health and well-being.

Common health evidence finds that temporary workers report poorer health, happiness, and job satisfaction than permanent workers (Bardasi & Francesconi, 2004), and past reporting of health evidence for temporary workers found twice the rates of injury of temporary workers in the construction industry for construction workers in WA State (Michaels, 2015). Furthermore, a recent study of injury rates for temporary workers in WA State showed that while temporary workers were not exposed to higher levels of physical hazards, temporary workers had higher workers’ compensation claims rates and greater time-losses associated with the claim than their standard employed counterparts (Foley, 2017). This evidence broadly supports the notion that temporary work, in its many forms, is adverse for health.

However, a recent systematic review of the effect of temporary employment on occupational injuries was inconclusive (Koranyi et al., 2018). Likewise, the negative impacts may not be consistent across demographics. In an Italian study of long-term temporary employment, particularly adverse impacts on health were shown for women but not men (Pirani & Salvini, 2015). These findings for temporary workers illustrate the discontinuity in how temporary working relationships are defined and studied resulting in inconsistent and
inconclusive health outcomes research. This creates challenges for occupational health and safety professionals in understanding the disparities in health-related exposures and outcomes between standard and nonstandard workers.

Definitional clarity of employment arrangements is needed to facilitate the identification of exposures associated with nonstandard employment. Until there is broad consensus on these common definitions of nonstandard employment arrangement, we propose using the three key dimensions as a framework for identifying the consequences of the breakdown of each dimension of employment arrangement and how this creates mechanisms for increased risk. These mechanisms for increased risk illuminate both well-understood and novel occupational exposures to facilitate the recognition of hazardous working conditions for nonstandard workers.

**Mechanisms for Increased Risk in Nonstandard Employment arrangements**

Employment arrangement is a distinct type of occupational exposure and is rarely considered in traditional occupational health and safety practice and research. However, nonstandard workers may endure hazardous physical and psychosocial working conditions shaped by their part-time, non-permanent, or indirect employment situation that standard workers in a similar work environment may not encounter. In this way, employment arrangement becomes an adverse exposure and can intensify hazards in the workplace. The following contextual factors faced by nonstandard workers confer added risk further differentiating them from workers in standard employment arrangements and exacerbating occupational health disparities (Benach, 2002).

**Differential treatment and provision of resources** For nonstandard workers in non-permanent work scenarios, like temporary workers, the short-term nature or unknown duration of
the working relationship between the worker and the site employer may lead to limited investment by employers in necessary safety and health measures as compared to standard workers for whom the employer expects to have ongoing oversight and responsibility. The non-permanent or part-time nature of the employment arrangement puts nonstandard workers at risk of differential treatment and allocation of resources (i.e. training, protective equipment, promotion) as compared to their standard employed counterparts (Howard, 2017).

The expectation of limited tenure by workers, employers, and coworkers as well as employee heterogeneity by worker contract type within a workplace creates conditions where nonstandard workers face a lack of social support (Scott-Marshall & Tompa, 2011), and limited investment by employers and discrimination in favor of permanent or full-time workers contributes to adverse working conditions experienced by nonstandard workers. Furthermore, beyond the increased health and safety risks, non-permanent workers face limited advancement or promotion opportunities due to the unknown future extent of the working relationship (Van Aerden et al., 2014). This differential treatment of nonstandard workers enables a psychological work environment relegating nonstandard workers as second-class workers.

**Increased risk taking and reluctance to refuse work** Nonstandard workers in non-permanent or part-time employment arrangements may feel the pressure to take increased risk or be reluctant to refuse work out of fear of lost compensation or limited opportunities for future employment (Howard, 2017). The need to earn compensation and the lack of paid sick leave or paid time off for workers who lack these benefits can manifest in a reluctance to stop working regardless of the risk or the worker’s health status. All three of the key dimensions of nonstandard employment arrangements – non-permanent, part-time, or indirect employment - may put pressure on workers to perform potentially hazardous or harmful tasks due to the
insecurity of lost wages, lost future opportunities to continue the working relationship, and the desire to receive commendation from the employer (Lipscomb et al., 2006).

For part-time workers seeking more hours, fear of reprisal for absenteeism or a worker’s desire to prove himself to earn priority may put the worker’s health as secondary. Consequently, avoiding absenteeism could lead to presenteeism, or working while ill or unwell, which may be harmful to health and often results in reduced productivity at work (Dawson, Veliziotis, Pacheco, & Webber, 2015). In a study of injured workers, workers who worked nonstandard shifts continued working in poorer health after a work-related injury (Wong, Smith, Mustard, & Gignac, 2015). Additionally, workers in indirect employment relationships may receive added pressure from the host firm to perform risky work and feel powerless to reconcile competing directions (Lipscomb et al., 2006).

**Lack of familiarity with hazards and equipment** Nonstandard workers like temporary, contingent, independent contractor and gig economy workers may regularly change work settings or employers or work for agencies who are unfamiliar with the hazards present at the worker’s job site. The time restrictions built into employment contracts for nonpermanent and part-time workers can lead to a lack of familiarity with hazards and hamper proper implementation of safety controls such as training and appropriate use of personal protective equipment (PPE). Temporary workers had increased risks of injury compared with their permanent counterparts (Foley, 2017) exemplifying how lack of familiarity with hazards and equipment can lead to added risk for workers.

When workers are regularly in new positions at new job sites, the lack of familiarity with crucial health and safety knowledge, equipment, and training due to limited tenure can put a worker at increased risk of injury or illness (Howard, 2017). This breakdown in workers
receiving appropriate training is compounded by lack of investment by employers in short-term workers. Non-permanent or indirect workers may be precluded from important long-term controls like medical surveillance programs for hazardous exposures and may be lost to follow-up on health-related exposures and conditions due to inconsistent employment (Foley, 2017).

**High hazard job placement** Higher hazard job placement is a method employers can use to externalize risk outside of their firm (Michaels, 2015; Weil, 2014). Firms may hire out high hazard jobs to contractors to reduce the risk classification of their directly employ workforce within worker’s compensation systems. Additionally, nonstandard workers with lower social capital at the worksite, such as non-permanent workers, may be given higher hazard jobs as compared to their counterparts in standard employment relationships with the employer. This transfer of risk outside of the workforce employed by firm and lack of social support puts nonstandard workers at greater risk, and nonstandard workers may, in turn, be reluctant to refuse high hazard work (Howard, 2017).

**Diffusion of responsibility for health and safety** Many health and safety regulations are most effective under the terms of direct employment where the worker is employed and managed by a single employer. Nonstandard employment arrangements involving multiple employers, along with worksites employing multiple independent subcontractors, creates confusion over who bears the responsibility for worker health and safety (Boden, Spieler, & Wagner, 2016; Cummings & Kreiss, 2008; Howard, 2017). Any lack of clarity on employer-employee responsibility or the boundaries of the firm can create conditions of uncertainty around compliance and employers ensuring a worker’s right to a place of employment that is free from recognized hazards, as directed by the OSH Act (OSHA, 2016). This lack of collaboration
between the direct and indirect employers may create conditions for reduced protections and potentially increased injury (Michaels, 2015).

Heterogeneity of the workforce where some workers are directly employed and others are independently or agency contracted may exacerbate the difficulties of differentiating who (i.e. which employer) is responsible for training and protecting these indirectly employed workers (Boden et al., 2016). Inadequate training and lack of worker protections, like inadequate PPE, are particularly perilous in high hazard industries. In the event of a work-related incident, inadequate record keeping due to confusion by multiple employers over responsibility for records could hinder the workers compensation process (Boden et al., 2016).

Involuntariness While the prevalence of nonstandard employment arrangements is increasing, the distribution of those who work in these jobs voluntarily versus involuntarily is unknown. Non-permanent, part-time, and indirect employment primarily advantage the needs of employers to maintain a flexible workforce. Some workers may prefer flexible employment arrangements, and the level of voluntariness in working part-time may modify the positive and negative health consequences of such labor (Bardasi & Francesconi, 2004); but the uncertainty that coincides with non-permanent positions and insufficient earning potential due to part-time work is associated with poor health (Lewchuk, Clarke, & de Wolff, 2008).

In a study of European workers, part-time workers suffered poorer working conditions (psychological, wage, and promotional opportunities) than full-time workers (Bartoll, Cortes, & Artazcoz, 2014). Additionally, part-time or on-call workers many be at risk of exposure to the health effects of alternating and rotating shifts or long working hours when employed by multiple part-time jobs. The risk of occupational injuries increased for those working multiple jobs compared to those working one job (Koranyi, Jonsson, Rönnblad, Stockfelt, & Bodin,
2018), and in a study of Korean female workers, both high job stress and poor sleep quality were associated with depressive symptoms (Cho et al., 2013).

**Material deprivation due to limited wages and benefits** The added level of insecurity due to limited wage projection and lack of benefits can put health at risk for those working in non-permanent or part-time positions. Temporary workers are less likely to receive health or pension benefits compared to standard workers (NORA, 2003). While benefits can help with financial security and the psychological safety that goes with this, the lack of benefits may encourage workers to continue working while sick or injured (Koranyi et al., 2018).

Misclassification of workers as contractors when they should be wage employees exposes workers to undue risk by suppressing worker protections and disallowing the benefits of worker compensation (Cummings & Kreiss, 2008; Michaels, 2015). For workers in contracted relationships who are not supplied workers compensation, the repercussions of an injury can be detrimental in terms of lost income, financial burden, and changes in family and social dynamics both for workers and their families (Lipscomb et al., 2006). While the insecurity non-permanent and part-time workers face could in part be due to material deprivation, nonstandard workers span the economic spectrum. Thus, material deprivation may be relative to the needs of the worker. Low-wage jobs and those with high risk of illness or injury may make workers without adequate social protections at risk of financial hardship or could adversely impact a worker’s health and well-being.

**Lack of labor representation** Workers in nonstandard employment arrangements lack the collective capacity to champion health and safety regulations compared to workers who benefit from strong labor representation. The non-permanent and often convoluted nature of nonstandard employment relationships makes it difficult for these workers to organize to modify
or create health and safety regulations or garner enough power and a strong enough voice within a workplace to ensure regulatory compliance. As labor representation from unions declines for workers overall, so have health and safety efforts, and fewer worker have accessible avenues for raising concerns in environments where they may risk retaliation (Boden et al., 2016).

Furthermore, the regulatory loopholes some nonstandard workers face due to their limited tenure or indirect employment are harder to confront without a collective voice. The lack of labor representation for nonstandard workers weakens their ability to negotiate for their health and safety and ensure their worker’s rights.

Conclusion

There is mounting evidence that the nature of work-related health risks is changing in the modern economy. Occupational health and safety professions would greatly benefit from an improved understanding of the mechanisms for increased risks nonstandard workers face in the workplace. To date, much of the research on the changing labor market has come from economic, sociological, and psychological perspectives to illuminate the impact NSAs have on workers’ health and financial and social well-being (Cappelli & Keller, 2013; Kalleberg, 2011; Van Aerden, Puig-Barrachina, Bosmans, & Vanroelen, 2016; Vives et al., 2010; Weil, 2014). However, there are substantial gaps in the health and safety evidence for the impact of changing employment arrangements. A focus on employment arrangement is helpful for identifying vulnerabilities and adverse physical and psychosocial exposures for nonstandard workers, so we propose eight mechanisms for increased health and safety risk stemming from the non-permanent, part-time, and/or indirect nature of nonstandard employment arrangements.
In many ways, nonstandard employment arrangements create conditions where workers are unprepared to protect themselves from hazards they may face in the workplace. Likewise, employers are placed into confusing contractual environments or are in limited positions to properly provide health and safety protections for nonstandard workers. Confusion or neglect on the part of employers as to who is responsible for overseeing a worker’s safety may be purposeful or not, but the likelihood of improper training and protections increases for nonstandard workers who lack an on-going and clear relationship with their employers. Furthermore, limited collective bargaining power, fear of retaliation, and lack of social support are often present in non-permanent, part-time, and indirect employment arrangements limiting a workers’ ability to advocate for their own health and safety.

Without a definitive classification system for employment arrangements, it is difficult to generalize health research findings between groups of nonstandard workers. As previously noted, the experience of temporary workers as one classic representation of the nonstandard work arrangement may not coincide with that of gig workers, temporary agency workers, or any other workers who share NSA characteristics but have different employment arrangements based on the three key dimensions. Furthermore, the hazard and work culture environments unique within industries and occupations and research finding that women, people of color, immigrants, younger workers, lower-skilled, and lower-educated workers are disproportionately represented in nonstandard work makes it additionally difficult to compare the health implications of employment arrangements based on contractual characteristics alone (Howard, 2017). Defining nonstandard arrangements in terms of the key dimensions of employment arrangement foregoes the need to rely on a muddled taxonomy, illuminates potential mechanisms for increased risk, and offers clearer opportunities for the study of occupational health disparities.
Nonstandard employment arrangements are not new; however, nonstandard employment arrangements are capturing a growing portion of the labor market due to globalization and continual improvements in technology and transportation. Many of the occupational health and safety regulations supported by research and implemented into law hinge on the structure afforded by standard employment relationships, and many health and safety interventions rely on a stable, visible workforce to ensure appropriate implementation and evaluation. Difficult to measure hazards and less traditionally recognized hazards, such as psychosocial hazards like lack of social support, can be challenging for occupational health and safety professionals to quantify in a shifting workforce.

A widening demographic of workers are being swept up in the trend towards NSAs with profound implications for the future of the economy and health and safety in the workplace. Many solutions and interventions are proposed to mitigate the adverse health effects of non-permanent, part-time, and indirect employment in an increasingly flexible labor market. These solutions focus on improved surveillance on the extent and implications of these nonstandard employment arrangements (Boden et al., 2016; Howard, 2017; NORA, 2003); advancing the data collection tools and methods for measuring the mechanisms by which NSAs increase hazardous exposure (Howard, 2017; Vives et al., 2010); and formulating policies devoted to improving interventions like safety trainings, safety monitoring, screening of worker experience specific to job assignments, and clarifying employer responsibilities in unclear regulatory situations (Foley, 2017). In addition, we propose defining nonstandard arrangements in terms of the key dimensions of employment arrangement to illuminate potential mechanisms for increased risk and offer many opportunities for the study of occupational health disparities.
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