

## Original Paper

# The Investigation on Solution for Diseases Caused by Contingent Work

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### **Abstract**

*Contingent work was deemed as a precarious employment which could be characterised by an atypical, temporary and marginal form of work arrangement. There is increasing evidence that contingent employment is significantly associated with adverse health outcomes and three health outcomes will be expounded in this paper: depressive disorders, work-related fatigue and occupational injuries. Simultaneously, fruitful micro-and macro-level precautionary and recovery measures are also be provided, including application of positive psychology interventions (PPI strategies), amelioration of work environments and social support, establishment of a fatigue risk management system (FRMS), and development of multifaceted approaches. Furthermore, various recommendations will be afforded to improve the sustainability and practicability of the aforementioned measures in the future research. Overall, the effective implementation of precautions aimed at health promotion and injury prevention for temporary workforce is of paramount importance to the healthy development of the nation.*

### **Keywords**

*Contingent work, depressive disorder, work-related fatigue, occupational injury, health promotion*

## 1. Introduction

In recent decades, the labour market and nature of work has changed dramatically all over the world due to globalization, neoliberalism, and advanced industrial technology (Auer, 2006; Kalleberg, 2009). The emerging flexible employment forms of work organization have become increasingly prevalent and prominent. Permanent employment, characterized by real job security and a fixed income is increasingly being substituted by career breaks, contingent work, compressed work weeks and apprenticeship contracts. While these nonstandard employment arrangements can benefit organisations by adding flexibility and reducing labour costs, previous research has suggested that they may have a negative impact on employees. Specifically, employment status and health condition are intrinsically linked and contingent employment might result in an adverse effect on employee's physical condition. Such adverse effects can include, among others, depressive symptoms, work-related fatigue, occupational injuries (Benach, Gimeno, Benavides, Martinez, & Torne Mdel, 2004).

Thus, this paper first aims to analyse the negative relationship between contingent work and health outcomes based on the above psychological and physical potential changes; second, to explore what kinds of health outcomes might specifically be affected by contingent work; and third, to provide some effective solutions and recommendations to tackle these problems.

### 1.1 Theoretical Background

Taking into account many of the studies which were published under the theme of "contingent" or "fixed-term contracts", it is vital to separate "contingent" work from both standard work, as well as other forms of "alternative" or "non-standard" work arrangements as defined by Kalleberg (Kalleberg, 2000). One of the more widely accepted definitions of contingent work can be described as "any job in which an individual does not have an explicit or implicit contract for long-term employment or one in which the minimum hours worked can vary in a non-systematic manner" (Polivka & Nardone, 1989).

Contingent workers can be divided into four different groupings of work arrangements (Connelly & Gallagher, 2004). The first and most obvious form of contingent work can be found in the case of "temporary staffing agencies" and there is a general consensus between all three parties (service firm, client organization, and worker) that the assignment or contract is of a fixed duration. A second category of contingent workers, labelled as "direct-hire" or "in house", embraces work arrangements with a large employer organization (Gallagher, 2002). In fact, a great many direct-hire temporary workers may have an explicit comprehension of a continuous relationship with the same employer (e.g., temporary assignments). Contractors, which include independent contractors, freelance workers, and self-employed individuals, provide their products or services to clients on a fixed-term basis and characterize the third type. It is worth noting that the employment of independent contractors has become increasingly observable in the IT industries and other knowledge-based occupations (Ang & Slaughter, 2001). The fourth type of contingent workers may convincingly involve workers directly hired for short-term duration or working on a seasonal contract, such as in the tourism industry (Connelly & Gallagher, 2004). Nevertheless, in some fields, seasonal work may be regarded as an

opportunity for long-term employment or fixed-term contract in the future (McDonald & Makin, 2000). In considering many of the previous literatures, as some studies pay more attention to temporary staffing agencies and independent contractors at the organizational and worker levels, whereas other studies exclude seasonal workers. To some extent, contingent workers differentiate their employment status depending on whether they are currently on assignments (Connelly & Gallagher, 2004). This paper adopts Connelly and Gallagher's theoretical framework to categorize four types of contingent workers because that it is universally accepted and used.

## **2. Health Outcomes and Contingent Work**

Contingent work was generally regarded as a precarious employment, which could be considered as an unstable, contingent and marginal form of work arrangement that is characterized by low job control, low salary and poor employment protection compared to non-precarious and full-time employment (Kim, M. H., Kim, C. Y., Park, Kawachi, 2008; Min, Park, Hwang, & Min, 2015).

Many studies have examined and corroborated that contingent work is significantly associated with adverse health outcomes (Benach & Muntaner, 2007). Temporary employees in most nations appear to experience poorer personal psychological health, increased depressive symptoms and suicidality (Quesnel-Vallee, DeHaney, & Ciampi, 2010) and poorer physical health, greater incidence of fatigue, muscular pains and occupational injuries (Kim, Muntaner, Shahidi, Vives, Vanroelen, & Benach, 2012). Further corroborating evidence comes from Gallie et al. (1998) who test levels of psychological stress among British temporary employees and elucidate that there was a negative association between poor mental health and contract employment status.

Among a sample of Belgian candidates, Martens et al. (1999) suggested that contingent workers have observably higher levels of somatic complaints than their colleagues in permanent jobs, and scholars also found that the influence was slightly stronger among female workers than male counterparts.

As aforementioned content, the existing research illustrates a negative association between health status and contingent work, the increased morbidity rate of psychological and physiological diseases may stems from gloomy occupational prospects and private life caused by nonstandard work, such as job insecurity, erosion of wage, hazardous working conditions, deficient job-related training, lack of welfare and promotion opportunities (Benach & Muntaner, 2007; Virtanen et al., 2003; Virtanen, Kivimaki, Joensuu, Virtanen, Elovainio, & Vahtera, 2005).

Therefore, the following section will focus on three common diseases caused by contingent work and specific treatment suggestions will also be provided.

### *2.1 Dealing with Depressive Disorders: A PPI Approach*

Depressive disorder is one of the major concerns for public health and occupational safety (Organisation for Economic Co-operation and Development (OECD), 2012) and it is related to substantial mental impairment, comorbidity, suicide and mortality (Kessler et al., 2003; Wang, Adair, & Patten, 2006), as well as to negative job outcomes for individuals. Studies have reported that

approximately 70-85% of the total costs of depressive disorders are due to worker's lower productivity, less job satisfaction, more rampant absenteeism and higher staff turnover, which signifies that organizations pay the largest part of the economic costs of depression (Lerner & Henke, 2008; Smit, Cuijpers, Oostenbrink, Batelaan, de Graaf, & Beekman, 2006; Thomas & Morris, 2003). Job burnout acts as a precursor or correlate of depressive disorder (Iacovides, Fountoulakis, Moysidou, & Lerodiakonou, 1999) and it is inevitable for incorporation to pay a price for problems triggered by it in the long term. Burnout has been shown to be further related to three potential psychological outcomes: emotional exhaustion, depersonalisation and lack of personal accomplishment (Glass & McKnight, 1996). Moreover, the depressive symptoms might increase the occurrence of other health-risk behaviors for individuals themselves, such as sedentary lifestyle, gluttony, alcohol abuse or smoking, even more adverse influence on employer liability, employee's family function and wider social stabilization.

Yet it is obvious that a systematic review of the elements that contribute to depressive disorders is warranted. The impacts of personal characteristics such as gender, race, educational background, lawful immigration status, and health conditions are likely to be fundamental. Aspects of provisional arrangements including voluntariness, controllability and predictability of an employee's working schedule may be significant. The variable factors in workplace such as management-labor relations (Rousseau & Libuser, 1997), communication, worker participation and decision making are prone to affect risk (Mayhew & Quinlan, 2002; Parker, Griffin, Sprigg, & Wall, 2002). Hence, better understanding of the effectiveness of health promotion and disease prevention for contingent workers is of the utmost importance for both countries and organizations.

Currently, a promising method to improve individual's well-being and ameliorate depressive symptoms is through positive psychology interventions (PPIs)—that is, intentional activities designed to develop positive emotions, behaviors, or cognitions, beginning with Fordyce's classic study enlightening practitioners to "act like a happy person" (Fordyce, 1977; Parks & Biswas-Diener, 2013).

PPI strategies include a wide variety of treatment methods such as experiencing and expressing gratitude, fostering optimistic thinking, practicing socialization, and building hope and compassion have been demonstrated to boost happiness significantly in both clinical and nonclinical samples (Fordyce, 1977; Ruini, Belaise, Brombin, Caffo, & Fava, 2006). For contingent work force, identifying one's capability, establishing active constructive responding to colleagues, savoring and summarizing life can enhance eudemonia and achievement of many. In the meantime, candidates should not only integrate all feasible strategies into their routine life and exercise them consistently, but also focus on multiple and various PPI programs rather than only one activity (Fordyce, 1977; Seligman, Steen, Park, & Peterson, 2005). Evidence demonstrates that cultivating positive feelings, as positive psychological interventions do, can bring about material improvements in quality of life and efficiently alleviate anxiety-depression symptoms for the majority of patients.

Besides PPI strategies, the contribution of amelioration of work environments and social support to ease depression among temporary employees also cannot be neglected. They may serve as a buffer zone

to avoid further illnesses caused by depression, such as insomnia, chronic pain and gastrointestinal disorders (European Foundation for the Improvement of Living and Working Conditions, 2007; Eller et al., 2009).

Specifically, individuals could be required to participate in a change process to address occupational stress. Firstly, adjusting and reorganizing excessive working arrangements, which can assist non-regular employees to accumulate working experience and familiar with machine operations (Benavides, Benach, Muntaner, Delclos, Catot, & Amable, 2006), as well as alleviate their backache, neck and shoulder pain; secondly, strengthening technological guidance from specialists and demonstration of personal protective equipment (PPE); thirdly, evading interpersonal or workplace conflicts via a series of dispute resolution methods, for instance, adoption of democratic leadership and commitment-oriented HRM, promotion of employee involvement in decision making, higher levels of organisational fairness, etc. (Mackie, Holahan, & Gottlieb, 2001; Thompson & Heron, 2005). From a societal perspective, contingent workers could be actively protected by organizational structures referring to certification of vocational skills. Setting up stress relieving service centers can reduce employee's clinic visits. Furthermore, special attention should be given to women, minorities, low-income population and the long-term unemployed, who are more prone to be attacked by depressive disorders and occupy the biggest share of the precarious employment (Vosko, 2006; Porthé et al., 2009).

According to the above analysis, PPI strategies, interventions involving work environments and social support can relieve temporary worker's depressive symptoms dramatically and promote their sense of achievement and eudemonia.

### *2.2 Dealing with Work-related Fatigue: A FRMS Approach*

Several studies have shed light on employees with irregular work schedules, diverse type of labor contracts and work organizations may suffer more frequently from vocational psychological overload, work-related fatigue can be considered as one of the main manifestations among these disorders (Martens, Nijhuis, Van Boxtel, & Knottnerus, 1999; Kim, Muntaner, Khang, Paek, & Cho, 2006). In fact, the nature of nonstandard working pattern is intimately associated with job instability, prolonged or irregular hours, and fierce competition for work, occupationally induced fatigue could be attributed to limited cushion time between greater work intensification and to lower job security (Dong, 2005).

If candidates cannot recover sufficiently from work-related fatigue, they may undergo an unfavourable vicious circle (Dawson, Noy, Harma, Akerstedt, & Belenky, 2011). In specific, fatigue phenomenon is expressed as a perplexing and distressing symptom in a broad spectrum of medical, behavioural and neurologic disorders (Shen, Barbera, & Shapiro, 2006; Valent, 2002), it impacts physical and cognitive functions, performance and motivation; and it has been linked to several safety-related consequences, such as decreased concentration and vigilance (capacity to respond and perceive unpredictable events), degraded memory, poor judgment and weaker psychomotor coordination (Roelen, van Rhenen, Groothoff, van der Klink, & Bültmann, 2014). Subsequently, accumulated fatigue may invoke ongoing

subjective complaints and severe health impairment for the longer time (Lundberg, 2002).

Therefore, fatigue management is thought to play a fundamental role in regulating human circadian rhythms, minimizing psychological exhaustion and preventing occupational accidents (Boivin, Tremblay, & James, 2007; Winwood, Winefield, & Lushington, 2006; Swaen, Van Amelsvoort, Bültmann, & Kant, 2003), it is pivotal for organizations or authorities to develop multiple constructive strategies to cope with worker fatigue in a systematic manner.

Findings recommend that one of the most appropriate approaches to manage work-related fatigue is through the establishment of a fatigue risk management system (FRMS). It can be described as follows: A scientifically and available based, data driven addition to specified hours of work limitations which intervenes and eliminates employee fatigue by a comprehensive way commensurate with the risk level and the operation nature (UK Department for Transport, 2010; Air Line Pilots Association, International, 2008).

Indeed, the successful implementation of FRMS not only requires the vigorous support and active participation of all stakeholders, but also the organization and staff share responsibility correspondingly for addressing fatigue.

The FRMS will be operated prosperously from the following aspects, firstly, the corporation should redesign work systems and arrange more healthful work schedules to afford adequate resting time so that can facilitate contingent worker's sleep quality and quantity (Roelen, van Rhenen, Groothoff, van der Klink, & Bültmann, 2014); secondly, the organizational efforts are also needed to develop fatigue management policies and create **supportive** work environments to lower candidate's psychological job demands and ward off job burnout; thirdly, a variety of collective activities should be organized by senior managers for the reason that those actions will be conducive to strengthening collaborative relationships among personnel, boosting work-life balance and easing occupational stress (Winwood, Lushington, & Winefield, 2006); fourthly, from an individual's perspective, each employee should assume responsibility for attending training, reporting cases of fatigue and making relevant avoiding schemes in order to motivate work initiative and better recovery. Besides the aforementioned strategies, incident investigation, risk assessment, internal and external auditing is also being regarded as the key defensive measures against fatigue risk (UK Department for Transport, 2010).

To summarize, a FRMS approach can be effective in monitoring and mitigating work-related fatigue and producing a well-rested and heightened alertness workforce, extensive interventions mentioned above may bring about higher productivity and more excellent safety records for organizations.

### *2.3 Dealing with Occupational Injuries: A Multifaceted Approach*

There is consistent evidence that employees in contingent work arrangements are exposed to significantly higher rates of occupational injuries (accidents that lead to physical or behavioural incapacitation, unscheduled suspension of work and compensation paid to the injured labourer) than their counterparts in non-contingent ones (Harrell, 1990; Foley, 1998; Mayhew & Quinlan, 1999).

For instance, a systematic review of international (mostly European) peer-reviewed researches revealed

that 7 of 13 reports elucidated a greater incidence of work-related injuries among casual workers (Virtanen, Kivimaki, Joensuu, Virtanen, Elovainio & Vahtera, 2005). A succeeding Spanish study illustrated labours employed on a contract or temporary agency had a twofold or more risk of traumatic occupational injuries than traditional employees (Benavides, Benach, Muntaner, Delclos, Catot, & Amable, 2006).

Under some circumstances, non-traditional or atypical arrangements signify the subcontracting or outsourcing of more dangerous working tasks, such that a heavier burden of job-related injury, disease and fatality is undertaken by nonstandard employees than by permanent workers (Rousseau & Libuser, 1997; The Baud-Mony, 1999), further studies also found temporary worker's employment poses downward pressures on revenues, union membership and the level of safety production to some extent (Arrowsmith, 2006; Underhill & Malcolm, 2009).

The increasingly severe fatal and nonfatal occupational injuries amongst contingent workers mainly can be ascribed to two aspects. The first category of risk factors can be traced to the lack of commitment to a stable and sustainable workforce. Where labor force instability hampers the implementing of established strategies, procedures and organizational structures, then extending to more fractured communication and mismatched staffing; Inexperienced, incompetent, and undertrained employees become more widespread and commonplace (Benavides, Benach, Muntaner, Delclos, Catot, & Amable, 2006; Quinlan & Philip, 2004; Quinlan, Mayhew, & Bohle, 2001; Aronsson, 1999).

The second cause expounded consequences triggered by regulatory failure from the organizational level. Evidence from the workers' compensation documents reported the majority of casualties were overloaded, underpaid and exploited, as well as they've always worked within the minimal employment protection or might be dismissed arbitrarily. However, discriminatory acts and inconsistencies in both the content and enforcement of regulation practices exacerbate non-standard worker's fear of unemployment, weaken their bargaining power, coupled with difficulty of exercising right to express concerns about potential risks (Sargeant & Eric, 2009).

In order to prevent the occurrence of occupational injuries and events, as well as mitigate the disadvantageous impacts to precarious workers, most researchers suggest that feasible and practical precaution of job-related injuries requires an interdisciplinary and multifaceted method that combines hazard identification, risk evaluation and control, scheduling optimization, ergonomic job design and analysis, medical surveillance, periodic psychological counselling, competent supervision, and a fair and multicultural workplace that improves precarious worker's health, wellbeing and safety.

There is broad recognition that establishing health protection schemes is a profound manner towards preventing workplace injuries and illnesses, the programmes cover three subitems in general and sponsored by employers. First, safety training and education should be reinforced. Studies in Sweden and America received consistent results that an increase in unintentional or job-related injuries among contingent workers because they had fewer opportunities and curriculums of safety training than non-contingent workers (Aronsson, 1999). Ergo, the contributing approaches would be strengthened

the knowledge of workplace safety issues and casual's self-protective skills, provide professional guidance about the hazards of overloaded work or overtime schedules.

Second, the improvement of work conditions and safety environment could be a decent way to reduce injuries. Li et al. (2001) found that strenuous working environments may induce inattention or mental disturbance, and ultimately cause accidents. In contrast, previous studies illustrate that contract workers who are greatly satisfied with their working atmosphere have a lower occupational risk (Johnston, 1995). Thus, to enhance work conditions and safety environment in terms of equipment maintenance, material integration, device fabrication and infrastructure development in which to further boost labourer's job satisfaction and consequently decrease the workplace injuries and events.

Third, disease screening and compensation insurance can be considered as macroscopical methods for controlling and preventing injuries (Glazner, Borgerding, Lowery, Bondy, Mueller, & Kreiss, 1998). By reason that temporary employees always have less access to comprehensive medical screening and fitness testing, the establishment of screening programs can keep them away from unobserved diseases, such as heart disease, hypertension and diabetes. On the other hand, compensation insurance system as an indispensable component of health and safety regulations, it may safeguard candidate's legitimate rights and interests, such as wage compensation and medical expense reimbursement, as well as improve contingent worker's job involvement and organizational commitment (Glazner, Borgerding, Lowery, Bondy, Mueller, & Kreiss, 1998; Robertson et al., 2006).

In addition, psychological contracts are built to be of value to promote contingent worker's motivation, loyalty and emotional stability, their positive psychological traits also should be cultivated aim to sustain the balance between rigidity and flexibility which is beneficial for accident prevention. In a nutshell, the aforementioned approaches would be conducive to diminish occupational injuries efficaciously.

### **3. Conclusions**

Currently, employment arrangements in which the employee has a nonstandard temporary relationship with the corporation have come to be grouped as precarious employment or contingent work, which is characterised by temporality (e.g., decreased job security and unfixed work schedules), vulnerability (e.g., more workplace hazards and poor social security), protectiveness (e.g., limited remuneration welfares and sickness absence benefits) and wage income (e.g., low level of salaries) (Lewchuk et al., 2003).

Compared with standard full-time workers, precarious workers are usually exposed to arduous and exhausted positions, intense noise and reduplicative movements, possess less job autonomy and are rarely represented in health and safety committees (Letourneux, 1998; Quinlan & Mayhew, 2000). There is growing evidence that casuals are prone to be occupied in low-skilled jobs and experience more atrocious working conditions. As a result, they may undergo worse health status than their permanent coworkers through long-term material and psychosocial deprivation (Benavides, Benach,

Muntaner, Delclos, Catot, & Amabl, 2006; Li, Chen, Wu, & Sung, 2001; Benavides et al., 2000), influences of contingent employment may even extend to candidate's family members and relatives.

This paper has clearly illuminated that the proximate effect of contingent work appears to be remarkably associated with three diseases: depressive disorders, work-related fatigue and occupational injuries. Considering the ample evidence base linking employment precariousness to adverse health outcomes, thereby multifarious micro-and macro-level precautionary and recovery measures are also be afforded, such as applying positive psychology interventions (PPI strategies), establishment of a fatigue risk management system (FRMS), and exploiting multifaceted approaches, etc.

To gain a profounder understanding of the causality between temporary employment and health, and more effective safeguard against potential diseases caused by contingent work, the subsequent surveys with more rigorous theories and precise appraisal procedures are needed. Future researches should take into account the following recommendations: collecting and integrating of high-quality data within optimized information systems, clarification of different types of contingent employment (Kalleberg, Reskin, & Hudson, 2000; Aronsson, 2001), and creation of measuring instruments for further evaluating the mechanisms through which non-traditional employment is associated with physical and psychological morbidity. Ultimately, the social contexts of precarious employment should also be fully considered (Scott, 2004). For one thing, the proportion of peripheral workforce and the unemployment rate may play a role in relations between contingent work and health status; for another, national employment protection systems and social security legislation serve as significant contextual elements can appropriately regulate underemployment and fragmentary work (Benach et al., 2000).

In summary, the findings of this paper suggest that precarious employment can have a severe impact on contingent worker's health and simultaneously a series of fruitful interventions for health protection and illness prevention are given in this thesis. Notwithstanding, the sustainability and practicability of aforementioned measures should be accounted for persistently in the future research. In conclusion, the effectiveness of precautions aimed at disease management and injury prevention for temporary workforce is of paramount importance to the healthy development of the nation.

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