

# Precarious employment and associated health and social consequences; a systematic review

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## Abstract

**Objective:** This systematic review aims to identify, evaluate, and summarise the consequences of precarious employment.

**Methods:** We included studies published within the last ten years (Jan 2011-July 2021) that employed at least two of three key dimensions of precarious employment: *employment insecurity*, *income inadequacy*, and *lack of rights and protection*.

**Results:** Of the 4,947 initially identified studies, only five studies met our eligibility criteria. These five studies were of moderate quality as assessed by the Newcastle-Ottawa Scale. Our review found that the current literature predominantly defines precarity based on the single criterion of *employment insecurity*. Our review identified evidence for the negative consequences of precarious employment, including poorer workplace wellbeing, general health, mental health, and emotional wellbeing. The findings indicated an increase in the magnitude of these adverse outcomes with a higher degree of job precariousness.

**Conclusions:** The rise of employment precariousness will likely continue to be a major issue in the coming years. More research is needed to inform effective policies and practices using a consensus definition of precarious employment.

**Implications for public health:** The presence of adverse effects of precarious employment suggests workplace initiatives are essential to mitigate the negative consequences of precarity.

**Key words:** social determinants of health, precarious work, non-standard employment, workplace well-being, mental health

## Introduction

Precarious employment is not a new form of work, with descriptions of non-standard employment dating to at least the mid-1970s.<sup>1</sup> However, the growth of digitalization and globalization have initiated a fundamental change in the conditions and prevalence of this type of employment.<sup>2,3</sup> The characteristics of work precariousness vary depending on national and institutional contexts.<sup>4</sup> For example, workers in countries with robust social protections are less likely to experience labour market insecurity.<sup>5</sup> Similarly, developed countries may have favourable economic conditions supporting better working and health conditions. Despite these protections, precarious work is growing, with more than 67% of EU workers<sup>6</sup> and 55% of Australian workers reporting precarious employment due to growth in casual and part-time jobs.<sup>7</sup> Recent evidence also suggests a decrease in income and job security associated with the social and economic dynamics of Covid-19, leading to an increase in precarious workers.<sup>8</sup> The increasing prevalence of precarious employment has raised concerns about its

conceptualization and potential impacts on workers' health and their family wellbeing.

To date, the inconsistent, broad, and one-dimensional definitions of precarity (e.g. temporariness) have led to different conceptualizations of the construct, posing a critical problem for cross-country comparisons.<sup>4</sup> Earlier research defined precarity as uncertain, unpredictable, and risky employment perceived by workers.<sup>4</sup> However, common themes describing precarious employment are emerging.<sup>9,10</sup> For example, precarious employment can be defined as a multidimensional construct including, but not limited to, *employment insecurity*, *income inadequacy*, and *lack of rights and protection*.<sup>9</sup> A recent review of the definition of precarious employment by Kreshpaj, Orellana<sup>10</sup> is consistent with this multidimensional approach. Measurement of these three dimensions of precarity provides a more comprehensive estimate of the level of precariousness.<sup>10</sup> Consistent with this, the multidimensional precariousness scales<sup>11,12</sup> demonstrate a more robust pattern of association with health outcomes (e.g. occupational injuries) when

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compared to the traditional one-dimensional (e.g. employment insecurity) approaches.<sup>13</sup>

Regardless of the dimensions of precarity, three fundamental mechanisms could explain the associations between precarious employment and poor health and social wellbeing. The first pathway is through psychological effects, such as stress, caused by feelings of uncertainty, unfairness, and powerlessness.<sup>14–16</sup> Precarious employment conditions can limit workers' control over their future employment and personal lives, leading to psychological distress.<sup>17</sup> The second pathway is through social and material deprivation. For example, insufficient income may lead to a lack of social protection, inadequate housing circumstances, and unhealthy lifestyle outcomes such as malnutrition.<sup>14</sup> The third pathway may operate through poor physical and psychological working conditions. These poor conditions could undermine the opportunities to engage in healthy behaviour, such as regular exercise and healthy eating,<sup>18</sup> and increase health and safety risks, such as working while injured and accepting hazardous tasks.<sup>14,19</sup>

Current reviews of the consequences of precarious work have focused on specific outcomes such as mental health and occupational injuries.<sup>20–22</sup> However, a growing number of studies have investigated other consequences of precarious employment, including impacts upon social and family wellbeing, workplace wellbeing, and general health.<sup>23–27</sup> For example, it has been shown that precarious employment is associated with delayed family formation and greater social isolation.<sup>25</sup> Furthermore, these reviews typically included studies based on a single dimension of precarious employment, such as temporariness.<sup>20–22</sup> Accordingly, the results from these reviews are difficult to compare due to differences in the conceptualization of precarious employment. Given these gaps in the current knowledge, it is essential to synthesize the current evidence on precarious employment by adopting a multidimensional definition of precarity and including a broader range of health and social outcomes.

To address these gaps, we conducted a systematic review to examine the social, workplace wellbeing, and health-related consequences of precarious employment in developed countries. We focused on developed countries as they have relatively analogous national and institutional circumstances affecting precariousness.<sup>28</sup> Therefore, this systematic review aims to (1) aggregate studies that have defined precarity by at least two of the three dimensions of precarity described by the International Labour Organisation;<sup>9</sup> (2) summarise the available evidence on the health, social and workplace wellbeing consequences of precarious employment; (3) provide directions for future research into precarious employment using a multidimensional definition of worker precarity.

## Methods

### Search strategy

We conducted a systematic search of four databases (Web of Science, PubMed, PsycINFO, and ProQuest Social Science) according to the 2020 Preferred Reporting Items for Systematic Reviews and Meta-Analyses framework.<sup>29</sup> The search terms were identified in consultation with an expert librarian. Search strategies were developed using medical subject headings and text words related to the aims and inclusion criteria of the systematic review (Table S1 in Supplementary Materials).

### Inclusion and exclusion criteria

Studies were included with a quantitative, qualitative, or mixed-method design if they met these criteria: (1) included participants who were selected based on *at least two out of three dimensions* of precarious employment (*employment insecurity, income inadequacy, and lack of rights and protection*)<sup>9</sup>; (2) reported the adverse impacts of precarious employment on workers aged 18 years and above; (3) were published between January 2011 and July 2021; (4) reported one or multiple potential outcomes, including health, social and workplace wellbeing consequences; (5) were conducted in developed countries, including the US, Canada, UK, European countries, Australia, and New Zealand; (6) were published in English and their full texts were available. Records were excluded if they were reviews, case reports, editorials, conference proceedings, theses, or commentaries.

### Screening and eligibility assessment

Three reviewers independently performed the initial search, screening process, data extraction, and quality assessment of the records, with each paper assigned to two reviewers. Any disagreements were resolved by a third reviewer/or all review team members. First, SJ conducted the initial systematic searches and uploaded the search outputs into the reference management software (EndNote). Upon removing duplicates in EndNote, SJ transferred the records to Covidence software to remove the remaining duplicates. Next, SJ and EN/AG conducted the title and abstract screening in Covidence and identified 238 records for full-text screening. Finally, SJ and EN/AG obtained the full text of the included papers, screened them against the inclusion criteria and documented the reasons for excluding the records in Covidence. Five studies were deemed eligible for data extraction eventually.

### Data extraction and quality assessment

Data from included studies were extracted into a Microsoft Excel spreadsheet to aggregate the following information: (1) title of study; (2) first author name and year of publication; (3) study population (sample size, age, and sex); (4) location/country; (5) study design and data collection timeframe for cross-sectional and longitudinal studies; (6) outcomes; (7) dimensions of precarious employment; (8) main results of the study.

Quality assessment was performed using the Newcastle-Ottawa scale for cohort studies<sup>30</sup> and a modified version of the Newcastle-Ottawa scale for cross-sectional studies.<sup>31</sup> The Newcastle-Ottawa scale rates the quality of the studies by allocating stars to subcategories of three main quality groups, including the selection of studies, comparability of study groups and outcome assessment. Cohort studies were categorized as having a *low risk of bias* for total scores of 8–9 stars (9–10 for cross-sectional studies), a *medium risk* for 6–7 stars (6–8 for cross-sectional), and a *high risk* for a maximum of 5 stars (the same for cross-sectional studies).

## Results

### Study screening

A total of 7,069 studies were identified through the search strategy, of which 4,947 were unique. Full-text records were mainly excluded for two reasons: (1) the study sample failed to meet at least 2 out of 3 dimensions of precarious work (49 studies) and (2) they were not conducted in a developed country (50 studies). Studies were not

excluded based on the risk of bias (e.g. low quality). Only five studies met our inclusion criteria after the full-text screening. A Preferred Reporting Items for Systematic Reviews and Meta-Analyses flowchart of the screening process is represented in [Figure 1](#).

### Precarious employment characteristics

[Table 1](#) summarises the characteristics of job precariousness in the included studies. Four studies used a cross-sectional design,<sup>32–35</sup> while Blustein, Perera<sup>36</sup> used a cohort design. Studies were conducted in the US,<sup>33,36</sup> Europe,<sup>34,35</sup> and Australia.<sup>32</sup> All three dimensions of precarious employment (*employment insecurity, income inadequacy, and lack of rights and protection*) were considered in the reviewed studies, except for *employment insecurity*, which was considered in four of the five studies.<sup>32–35</sup> One study employed four questions to measure the perceived precariousness of work,<sup>32</sup> and Jonsson, Matilla-Santander<sup>34</sup> measured work precariousness using the Swedish version of the employment precariousness scale (EPRES). Two studies conducted in the US defined precarious employment based on four subscales of EPRES (4 out of 6 indicators of job precariousness).<sup>33,36</sup> Bouwhuis, Geuskens<sup>35</sup> used seven indicators to measure the consequences of precarious employment among single and multiple job holders. All studies adjusted for confounders, including age, sex, educational level, country of birth,<sup>32–36</sup> and family status.<sup>32,34</sup>

### Consequences of precarious employment

All included studies used survey methods (questionnaire and interview) to evaluate the consequences of precarious employment. [Table 2](#) shows the direction of changes in two categories of precarious work outcomes: (1) Health consequences (physical or mental health) and (2) social and workplace wellbeing consequences. A more detailed summary of the findings of the included studies is presented in [Table S2](#) (Supplementary Information).

### Health consequences of precarious employment

Poor general health was identified as a consequence of precarious employment, and the higher precariousness of work increased the likelihood of poor health.<sup>33,34</sup> Jonsson<sup>34</sup> found that highly precarious workers were 40% more likely to report poor general health than workers with low and moderate precariousness. Furthermore, they found no significant difference in the prevalence ratio of musculoskeletal pain between highly precarious work and low or moderate precarious work. However, the prevalence of musculoskeletal pain (36%) was slightly higher in the low-precarious group than in the high and moderate-precarious groups.<sup>34</sup>

Regardless of the level of precariousness, Bouwhuis<sup>35</sup> found no significant differences in general health, burnout complaints, and chronic musculoskeletal health between multiple and single job holders in precarious workers, although 23% of multiple and single job holders reported musculoskeletal health problems.

Jonsson<sup>34</sup> reported worse mental health in highly precarious workers compared to low and moderate precarious employees. Likewise, higher precariousness was associated with negative emotional wellbeing among Australian workers<sup>32</sup> and increased likelihood of expressing irritation and stress.<sup>32</sup>

### Social and workplace wellbeing

Three reviewed studies indicated poor wellbeing of precarious workers, across a broad range of outcomes, compared to the non-precarious workers. These outcomes included lower life satisfaction or job satisfaction and poorer workplace wellbeing in relation to survival needs, social contribution needs, and self-determination needs,<sup>32,36</sup> as well as higher job stress.<sup>33</sup> All three studies exploring wellbeing reported significantly poorer outcomes in highly precarious workers compared to non-precarious workers.<sup>32,33,36</sup> In addition, dissatisfied precarious workers were five times more likely to experience job

Figure 1: PRISMA flow chart.

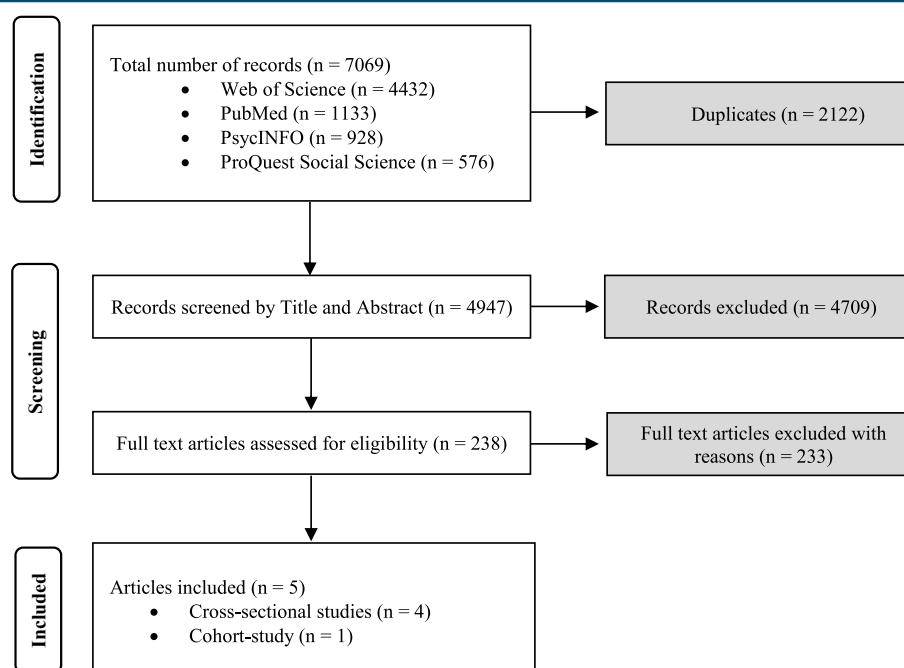


Table 1: Characteristics of included studies.

First author, country	Study design & data year	Population & age	Exposure	Indicators of job precarity			Outcome	Quality assessment <sup>a</sup>
				Employment insecurity	Income inadequacy	Lack of rights & protection		
Jonsson 2021; Sweden	Cross-sectional; 2016-2017	415; aged 18-62 years	Three categories (Low, moderate, & high precariousness)	Temporariness (contract duration and tenure)	Wage	Disempowerment/Vulnerability/Rights/Exercise rights	General health/mental health/musculoskeletal pain	7 stars
Bhattacharya 2021; US	Pooled cross-sectional; 2002, 2006, 2010, & 2014	4534; aged 18 or above	Three categories (Low, moderate, & high precariousness)	Temporariness (type of contract and duration)	Wage (financial situation, personal and household income, & benefits)	Disempowerment (e.g., decision making, job schedule, & union membership)	Job stress, unhealthy days, and days with activity limitations	8 stars
Blustein 2020; US	Cohort study	492; aged 18 or above	Five categories (Indecent-precarious work, highly decent work, & three other groups)	-	Inadequate wage (2 items)	Vulnerability (5 items), inadequate rights (6 items), inability to exercise rights (5 items)	Job satisfaction, life satisfaction, survival needs, social contribution needs, and self-determination needs (competence, relatedness, autonomy)	7 stars
Patulny 2020; Australia	Cross-sectional; 2015-16	999; aged 18 or above	Four categories (Highly precarious, safe but alienated workers, secure meaningful, & risky meaningful)	Perceived job security	Level of income	Opportunities for advancement	Emotional wellbeing & life satisfaction	6 stars
Bouwhuis 2019; Netherlands	Cross-sectional; 2012	3609; aged 25 or above	Two categories (multiple and single job holder among precarious workers)	Type of contract	Satisfaction with salary	Working overtime, working time arrangements, Interpersonal power relations	Self-perceived general health/musculoskeletal health/burnout complaints	7 stars

<sup>a</sup>The maximum stars for cross-sectional and cohort studies were 10 and 9, respectively.

Table 2: Direction of changes in precarious employment health and social wellbeing outcomes.

Consequences of precarious work	Change	Study	Comparison
<b>Physical health</b>			
Poor general health	↑	Jonsson, Matilla-Santander <sup>34</sup>	high vs moderate or low precariousness
Unhealthy days	↑	Bhattacharya and Ray <sup>33</sup>	highly precarious workers compared to non-precarious workers
Days with activity limitations	↑	Bhattacharya and Ray <sup>33</sup>	highly precarious workers compared to non-precarious workers
Musculoskeletal pain	↔	Jonsson, Matilla-Santander <sup>34</sup>	high vs moderate or low precariousness
<b>Mental health</b>			
Poor mental health	↑	Jonsson, Matilla-Santander <sup>34</sup>	high vs moderate or low precariousness
Negative emotional wellbeing	↑	Patulny, Mills <sup>32</sup>	highly precarious workers compared to non-precarious workers
Expressing irritation and stress	↑	Patulny, Mills <sup>32</sup>	highly precarious workers compared to non-precarious workers
<b>Social wellbeing</b>			
Life satisfaction	↓	Blustein, Perera <sup>36</sup>	highly precarious workers compared to non-precarious workers
Life satisfaction	↓	Patulny, Mills <sup>32</sup>	highly precarious workers compared to non-precarious workers
<b>Workplace wellbeing</b>			
Survival needs satisfaction	↓	Blustein, Perera <sup>36</sup>	highly precarious workers compared to non-precarious workers
Social contribution needs satisfaction	↓	Blustein, Perera <sup>36</sup>	highly precarious workers compared to non-precarious workers
Self-determination needs satisfaction (competence, relatedness, autonomy)	↓	Blustein, Perera <sup>36</sup>	highly precarious workers compared to non-precarious workers
Job stress	↑	Bhattacharya and Ray <sup>33</sup>	highly precarious workers compared to non-precarious workers
Job satisfaction	↓	Blustein, Perera <sup>36</sup>	highly precarious workers compared to non-precarious workers
<b>Consequences of multiple jobs</b>			
<b>Physical health</b>			
General health	↔	Bouwhuis, Geuskens <sup>35</sup>	Precarious workers with multiple jobs vs single job holders
Musculoskeletal pain	↔	Bouwhuis, Geuskens <sup>35</sup>	Precarious workers with multiple jobs vs single job holders
<b>Mental health</b>			
Burnout complaints	↔	Bouwhuis, Geuskens <sup>35</sup>	Precarious workers with multiple jobs vs single job holders

Significant ↑ increase; ↓ decrease; ↔ no change.

stress than those satisfied.<sup>33</sup> Only one study adopted a theoretical perspective to explain these findings.<sup>36</sup> Blustein, Perera<sup>36</sup> found that individuals with higher levels of precarious employment reported a lower level of life satisfaction, job satisfaction, and workplace wellbeing (satisfaction with survival needs, social contribution needs, and self-determination needs) due to a lack of optimal working conditions.

### Quality assessment

The quality assessment results for each individual study are summarised in Table S3 (Supplementary Information). All studies included in this review were at least somewhat representative of the average in the target population. However, no study reported a justification for sample size. Overall, all reviewed studies were deemed at a *medium risk* of bias based on three primary quality assessment parameters, including the selection of groups, comparability of groups (e.g. control for the most important confounding factors), and assessment of the outcome.

Overall, the reviewed studies were of *medium quality*. As such, they do not robustly determine the magnitude of changes associated with precarious work outcomes but show consistent changes in precarious work outcomes. Compared with non-precarious or low to medium precarious workers, highly precarious workers have significantly poorer physical health, mental health, and social or workplace wellbeing outcomes. As an exception, the musculoskeletal pain component of physical health was not shown to be affected by the level of precarity. In addition, among precarious workers with a varying number of jobs, physical health is not changing significantly compared to workers holding a single job.

### Discussion

This study is the first systematic review to apply a multidimensional definition of precarity to understand the consequences of precarious employment on health, social, and workplace wellbeing outcomes. The review confirmed the lack of a clear conceptualization of precarious work as the current literature is dominated by studies using a single dimension of precarity, mainly employment insecurity and its associated adverse outcomes. Our review demonstrated that *income inadequacy* and *lack of rights and protection* were more frequently studied than *employment insecurity*.<sup>36</sup> The review could not identify the magnitude of changes in precarious work outcomes (physical and mental health or social and workplace wellbeing) due to a limited number of studies and differences in their statistical methods. However, an association between higher degrees of precarity and increasing impairment of these outcomes was evident.

This review found that precarious employment conditions can result in higher job stress, lower life and job satisfaction, and negative emotional wellbeing.<sup>32,33,36</sup> Further, dissatisfied precarious workers were five times more likely to experience job stress than those who were satisfied with their job.<sup>33</sup> These findings agree with the previous reviews on the effects of precarious employment on mental health and occupational injuries.<sup>20–22</sup> The consequences of precarious employment on social and workplace wellbeing may be partly due to differences of poor employment conditions (job insecurity, low level of income, and lack of rights and social protections) and poor working conditions (heavy load and unsafe workplace, and high demand) between precarious and non-precarious workers.<sup>32,33,36</sup> These poor conditions can lead to poor social and workplace wellbeing through hypothesised mechanisms such as psychological distresses or social

and maternal deprivation. Differences between countries and jurisdictions should also be considered as contextual factors for precarity. Indeed, there are significant differences between countries in the level of social supports, including health coverage or insurance, unemployment benefits, family benefits, re-training, and other resources available to workers. For example, the lack of health insurance in precarious employment may jeopardize employees' health and wellbeing. The relationship between health insurance and employment has exacerbated economic inequality because access to benefits can be dependent on having a full-time or well-paying job.<sup>37</sup> Health insurance programs based on the model of full-time and permanent employment may also impact the welfare of precarious employees when they are unemployed, disabled, or retired.

The lack of association between musculoskeletal pain and precarious employment in this review<sup>34,35</sup> could be due to the physical demands of certain jobs, rather than key characteristics of precarity. These physical demands may be associated with any specific employment, regardless of its precariousness. According to the National Institute for Occupational Safety and Health, an increased risk of musculoskeletal pain, particularly for repetitive tasks, could be due to high force, poor body posture, and high-frequency or prolonged tasks.<sup>37</sup> The levels of exposure to physical demands were not considered in the reviewed studies. Despite these findings suggesting that musculoskeletal pain may not be a direct or specific consequence of precarious employment, some precarious jobs may not adequately protect workers from physical demands, leading to musculoskeletal pain.

Although holding multiple jobs can negatively affect health, it appears to be less detrimental than precarious employment.<sup>35</sup> In the study by Bouwhuis et al.<sup>35</sup>, the non-significant difference in general health and burnout (job stress) of multiple job holders in precarious workers<sup>35</sup> contradicts previous evidence.<sup>38</sup> The misalignment of this finding in our review could be due to the lack of control for some risk factors including the number of jobs, duration of the jobs (working hours), rest or sleep opportunity between jobs,<sup>39</sup> and time of performing the job (day vs night).<sup>40</sup> However, this should be interpreted with caution due to the low number of included studies in this review. The included studies scored six or more on our quality rating scale (from a possible zero to nine points or zero to ten for cross-sectional studies). This indicates that, in general, the evidence gathered represents 'medium' quality of evidence. There is a need for higher quality studies addressing multidimensional exposures to precarious employment.

This systematic review is subject to some limitations to be considered when interpreting the findings (a) the limited number of studies using a multidimensional approach for defining precarious work challenges the validity and generalisability of the findings; (b) most studies in this systematic review relied on cross-sectional data to identify consequences of precarious work.<sup>32–35</sup> Since workers' employment trajectories may vary throughout life, using only one time-point to assess associations between precarity and outcomes may lead to an incomplete classification of consequences. Furthermore, such a research design does not allow robust estimates of causality; (c) the inclusion of literature only from developed nations with broadly comparable social and working conditions may not inform our understanding of precarious employment in other countries, where the entire conceptualization of work, precarity, and outcome could be different; (d) our selection criteria may be excessively strict for qualitative studies, as the majority of qualitative studies recruited

participants based on only one dimension of precarity (e.g. temporariness). In some cases, these studies did investigate other dimensions as themes when examining the consequences of precarity. (e) only one study provided a theoretical explanation for their results.<sup>36</sup> The scarcity of the theoretical models provides some challenges for integrating precarious employment and its health and social consequences; (f) while the Newcastle Ottawa scale has some limitations, including potential low inter-rater reliability and ambiguity in the scoring rules,<sup>41</sup> it is widely used to assess the quality of studies included in reviews.

## Conclusion

This systematic review explored the current conceptualization and measurement methods of precarious employment using a comprehensive multidimensional approach,<sup>9,10</sup> and summarised the consequences of precarious employment across health, social, and workplace wellbeing consequences. Taken together, the findings show that precarious employment increases the risk of multiple health and social and workplace consequences in precarious workers, most notably in social and workplace wellbeing; however, the impacts of precarious employment on physical health are less certain.

Future studies should take appropriate theoretical viewpoints into account to better understand the origins of precarious employment and its consequences. Ideally, a comprehensive theory should be developed to integrate the potential mechanisms that contribute to the long-term consequences of precarious work. Further experimental studies could adopt a universal model for the conceptualization of precarity, to examine the consequences of precarious work on health, social, and workplace wellbeing across countries. More importantly, future research should employ longitudinal research designs to identify longer-term consequences of precarious employment particularly in a broader group of precarious workers including emerging groups (gig workers, rideshare industry). Moreover, emerging forms of gig work share many characteristics with the definition of precarious employment used in this review such as job insecurity, unpredictable hours for less than minimum wage, and lack of paid leave or sick leave. Future research should adopt stronger designs and consider specific demographic factors to determine the health and social risks of precarious work and gig work.

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## Conflicts of interest

The authors have no competing interests to declare.

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## Appendix A Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.anzjph.2023.100074>.