

A systematic review on mediators and moderators of job insecurity–health relation before and after COVID-19 pandemic

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Abstract

Purpose – Job insecurity is one of the most hazardous work stressors in the twenty-first century, placing employees between employment and unemployment may threaten employees' health in the workplaces. Using a systematic review, the first aim of this study is to list the mediators and moderators of the link between job insecurity and health-related outcomes, and second, to explain and discuss the mechanisms that could explain the mediating and moderating effects.

Design/methodology/approach – We searched four databases (Science Direct, PubMed, Springer Link and Google Scholar) from 2008 to 2018 to detect these mediators and moderators. Also, as the study was conducted during COVID-19 pandemic, we particularly searched and reported the same associations over this period (2019–2022).

Findings – The results of the review suggest that job insecurity negatively influences a wide range of both health- and safety-related outcomes in the workplace. The results also showed that the most studied mediator and moderator of the job insecurity-health link over the past 10 years has been workload and employability. During COVID-19, the number of studies on mediators were more than moderators and coping strategies appeared to gain more research attention. Additionally, this review suggests that, to explain the mediation and moderation effects, a combination of cognitive appraisal theory and the conservation of resources theory can be used.

Originality/value – Although this review suggests that job insecurity detrimentally influences employee health, the severity of this impact on health-related outcomes may vary by the effects of various moderators.

Keywords Job insecurity, Health outcomes, Mediators, Moderators, Systematic review

Paper type Literature review

Introduction

Job insecurity is widely recognized as one of the growing work stressors in the twenty-first century (e.g. Cheng and Chan, 2008; Probst, 2008; De Beer *et al.*, 2015; Charkhabi, 2018, 2019). Studies show that job insecurity is increasing across the world, including Europe (e.g. László *et al.*, 2010), North America (e.g. Hamad *et al.*, 2016), Australia (e.g. Turner and Lingard, 2016) and Africa (e.g. De Beer *et al.*, 2015). Some of the most important factors linked to increased job insecurity over the past decade may include economic recessions

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(Probst, 2008), increased global competitions (Sverke *et al.*, 2002), technological innovations for increasing the production rate (Sverke and Hellgren, 2002) and the desire of employers to use short-term employment contracts (Schaufeli, 2016).

Decades of research have demonstrated that job insecurity is negatively associated with employee well-being, both physically and psychologically (for a review, see De Witte *et al.*, 2016). One of these negative outcomes is poor self-rated health (e.g. Burgard *et al.*, 2009). Even 20 years after Dekker and Schaufeli's review (1995), research on job insecurity has largely focused on its consequences, ignoring the underlying mechanisms influencing the job insecurity–health link (Schaufeli, 2016). Despite considerable evidence on the job insecurity–health link, fewer studies have examined job insecurity and the variables that might have intermediate or interactional effects on its link to employees' health. As such, researchers should explore beyond the consequences of job insecurity. Thus, the main purpose of this article is to identify and list these variables and to discuss the underlying mechanisms explaining the effects of mediators and moderators between job insecurity and health.

Definition and types of job insecurity

Job insecurity was initially defined as a sense of powerlessness to maintain desired continuity in a threatened job situation (Greenhalgh and Rosenblatt, 1984), which can be further divided into quantitative and qualitative job insecurity. Quantitative job insecurity relates to the overall concern of an employee about the continued existence of one's job in the future (Vander Elst *et al.*, 2011). Qualitative job insecurity refers to the perceived threat of losing valued features of one's job, such as worsening of work conditions, lack of career opportunities and salary reduction (De Witte, 2005; Hellgren *et al.*, 1999). Both quantitative and qualitative job insecurity hurt employees and organizations (e.g. De Witte *et al.*, 2010), which is especially true for employees who experience it long-term (or chronically) (De Witte, 2005).

Job insecurity is a type of long-term insecurity regarding one's job that is situated between employment and unemployment, as it targets individuals who are employed but threatened by the perception of unemployment (De Witte, 2005). Many studies have found that job insecurity leads to prolonged stress among employees (e.g. Probst, 2008; Sverke *et al.*, 2002). To explain the mechanisms underlying the job insecurity–health link, we can consider two theories: cognitive appraisal theory (Lazarus and Folkman, 1984) and the conservation of resources theory (Hobfoll, 1989). The former explains how individual interpretations of a stressful event (e.g. job insecurity) influence their reactions to it (positive or negative), and the latter states that a stressor (e.g. job insecurity) as a threat of a loss of resources (e.g. job loss) can cause individuals considerable stress (Hobfoll, 1989). In the following review, we will discuss these theories in greater depth.

Theoretical foundations of job insecurity–health link

Cognitive appraisal theory. According to cognitive appraisal theory (Lazarus and Folkman, 1984), when individuals encounter a potential stressor, they evaluate if it is stressful, beneficial, or unimportant (primary appraisal) and, if so, decide what they can do about it (secondary appraisal). Stress appraisals include *harm/loss* appraisals, which reflect existing harms; *threat* appraisals, which refer to anticipated harms; and *challenge* appraisals, which label threats as opportunities. Secondary appraisals involve evaluating how to handle stressful situations, given one's personal resources and expected outcomes (Lazarus and Folkman, 1984). In summary, cognitive appraisal theory provides a foundation for understanding: (1) how individuals perceive situational stressors, (2) how situational characteristics can influence that perception and (3) how appraisals are linked to negative outcomes. In terms of cognitive appraisal theory, job insecurity can be categorized as a threat, given that individuals are anticipating the potential loss of their job. However, how stressors are interpreted varies between people (Jiang, 2017).

Conservation of resources theory. According to the conservation of resources theory, people value resources that help them achieve their goals or overcome potential threats (Hobfoll, 1989). Hobfoll defines resources as including objects, which have a physical presence (e.g. clothing, shelter); conditions, which facilitate the acquisition of other resources (e.g. status, health); personal characteristics, which reflect inner qualities (e.g. skills, self-esteem); and energy resources, which can be exchanged for other resources (e.g. money, knowledge). People experience stress from perceived or potential losses of those resources, such as from stressful or traumatic events, which consume personal resources and reduce one's ability to cope (Hobfoll *et al.*, 1990).

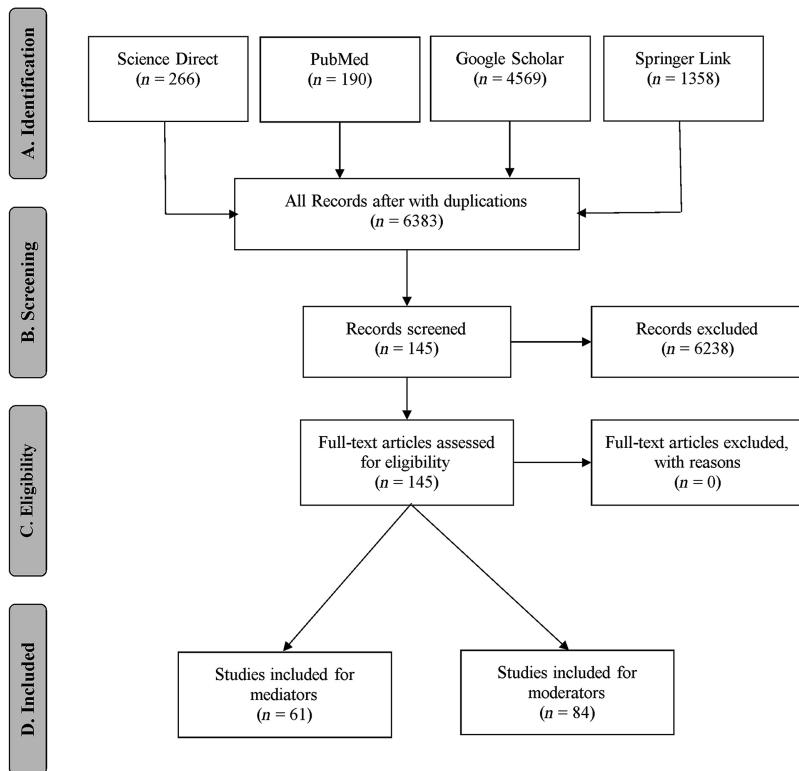
One the other hand, individuals with greater resources are often less vulnerable to resource loss, more capable of resource gain and more capable of taking risks than those with fewer resources (Hobfoll, 1998; Hobfoll and Leiberma, 1987). However, the psychological impact of resource loss far outweighs the impact of equivalent resource gain (Hobfoll, 1989). Additionally, resources must be invested to gain additional resources and to offset the potential or actual loss of resources (Hobfoll, 1998). Individuals with fewer personal resources are more risk-averse and more sensitive to potential losses. Because job insecurity means individuals anticipate potential resource loss (i.e. loss of income, job status), it consumes their personal coping resources and hurts individuals psychologically, leaving them vulnerable to anxiety, burnout and dissatisfaction with both their job and life (Charkhabi *et al.*, 2015). This theory has been widely used to explain the link between job stressors and health-related outcomes because: (1) it pays a particular attention to role of personal resources in stressor-individual encounter, (2) it presents a detailed inspection of the possible interaction of personal resources and situational stressors, and (3) it describes how situational stressors can consume personal resources of individuals and results in negative outcomes. These characteristics make this theory appropriate to explain not only the possible direct impact of job insecurity on health outcomes, but also the extent to which various mediators and moderators may influence this association.

Implication of the theories. The cognitive appraisal theory and the conservation of resources theory suggest that job insecurity may have challenging (i.e. positive) or threatening (i.e. negative) effects on employees' health. This relationship may be reduced or amplified through interactions with other variables, or mediated by other variables. According to our search, before pandemic, studies including cognitive appraisal theory and conservation of resources theory served to explain the moderating roles of studied variables and in most studies, the social exchange theory was used to explain the mediating role of studied variables. One explanation for this could be that considering job insecurity as a job stressor, the two major theories of cognitive appraisal theory as well as conservation of resources theory can better explain the difference between individuals when they face this stressor. According to the appraisal theory employees with the fear of losing job may experience higher degree of stress, fear and anxiety which place them in a vulnerable position over time. From conservation resources of theory' standpoint, job insecurity as a long-term concern may consume the personal resources of employees and unable them to cope/adjust with the stressor over time. The reason why social exchange theory has been widely used to explain the influence of mediators in this specific link might be different. One explanation could be that employees may perceive job insecurity against having a fair and mutual exchange between the employer and themselves. If continues, it may put them into a position to sustain additional mental pressure and burden.

The predomination of studies including moderators than mediators may be because of different attempts and approaches researchers have applied to reduce the link between job insecurity and health in different countries. A few studies have used both mediators and moderators simultaneously. These studies have aimed not to test the role of new variables but to test the simultaneous effects of previously studied variables that already have been investigated in separate studies.

Method

An integrative review was used to collect and summarize the most studied outcomes, mediators and moderators of the job insecurity–health link in the past 10 years (from 2008 to 2018). It should be noted that in this review we did not report the effect size of the tested mediators and moderators, but instead we reported their frequency in the available literature. An integrative review summarizes past empirical or theoretical literature, both quantitative and qualitative, to provide a more comprehensive understanding of a particular phenomenon or issue and attempts to identify common themes (Broome, 1993; Khoo *et al.*, 2011; Pautasso, 2013). The integrative review method is the only approach that combines diverse methodologies (e.g. experimental and non-experimental research). To structure this review, we used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist, an evidence-based minimum set of items for reporting systematic reviews and meta-analyses. PRISMA focuses on reviews evaluating randomized trials, but can also be used as a basis for reporting systematic reviews of other types of research, particularly evaluations of interventions [1]. According to this approach, we selected four scientific databases (Science Direct, PubMed, Google Scholar and Springer Link) to record the frequency of articles that studied different mediators and moderators of the job insecurity–health relationship between 2008 and 2018. Figure 1 shows the structure of our review and inclusion/exclusion criteria. According to this Figure, in the identification step, we used four databases of Science Direct, PubMed, Google Scholar and Springer Link to identify the relevant articles. Particular



Source(s): Flowchart of systematic review by authors

Figure 1. Flowchart of systematic review

keywords were used such as *job insecurity, outcomes, mediators, moderators, health and well-being*. Time framework and the keywords were two inclusion criteria. The health-related keywords were compatible with the classification of [Sverke et al. \(2002\)](#) as well as the classification of [Vander Elst et al. \(2016\)](#). To find and include maximum number of relevant studies we did not define exclusion criteria. In the identification step, we reached 6383 records that most were found in Springer Link. In the screening step, we discarded 6238 duplications including the studies that did not find statistically significant moderators or mediators (i.e. [Lübke, 2021](#); [Vander Elst et al., 2014](#); [Silla et al., 2009](#); [De Witte et al., 2015](#)) and in the end, 145 articles remained. In the eligibility step, we included only full articles and as we did not have any other type of article (abstract, conference poster, etc.), therefore, 145 articles remained. In including step, we separated articles based on being moderator or mediator of the job insecurity–health link. At the end of this step, we had 61 articles including mediators and 84 articles including moderators. Therefore, the results section was developed based on the two categories of articles we reached in including step.

As noted earlier, a total of 145 articles were found that reported the mediating role and moderating role of various psychological variables on job insecurity and health-related outcomes. These variables later will be re-classified separately (i.e. as mediators or moderators) based on their frequency in these four databases. To provide a roadmap, we first list the most important health-related outcomes of job insecurity. Then we review the most studied mediators and moderators of this relationship. Finally, we discuss how cognitive appraisal theory and conservation of resources theory may explain these mediating and moderating effects.

Results

Like other life stressful events, job insecurity tends to result in negative outcomes. In this review, we have divided these outcomes into health-related outcomes and safety-related outcomes, which will be discussed separately.

Health-related outcomes. Previous research shows that a rise in job insecurity has been directly associated with negative outcomes for employees and organizations (e.g. [De Witte et al., 2016](#)). In this regard, [Sverke et al.'s \(2002\)](#) review suggests that, based on the focus of the reaction (individual vs. organizational) and the type of reaction (short term vs. long term), the outcomes of job insecurity can be placed in one of four different categories (see [Table 1](#)). According to this table, individual outcomes include job attitudes (e.g. job satisfaction, job involvement) and health-related outcomes (e.g. physical and mental health). Organizational outcomes include organizational attitudes (e.g. commitment, trust) and work-related behaviors (e.g. job performance, safety behaviors). Although in some classifications safety behaviors are considered as work-related outcomes, more studies considered them as health-related behaviors ([Probst and Brubaker, 2001](#); [Abri et al., 2021](#)).

Table 1. A classification of the possible consequences of job insecurity

Focus of reaction		Individual	Organizational
Type of reaction	<i>Short-term</i>	<i>Job attitudes</i> (e.g. job satisfaction) (e.g. job involvement)	<i>Organizational attitudes</i> (e.g. organizational commitment) (e.g. organizational trust)
	<i>Long-term</i>	<i>Health and well-being</i> (e.g. physical health) (e.g. mental health)	<i>Work-related behavior</i> (e.g. job performance) (e.g. Safety behaviors)

Source: Table courtesy of [Sverke et al. \(2002\)](#)

However, other researchers propose different categorizations for job insecurity outcomes. For example, Nella *et al.* (2015) present four other categories of job insecurity outcomes: *emotional* (i.e. psychosomatic symptoms, loss of self-esteem, anxiety and minor psychiatric symptoms), *physiological* (i.e. blood pressure, heart rate), *behavioral* (i.e. exercise, dietary habits and sleep) and *workplace* (i.e. increased use of healthcare services and decreased compliance with occupational safety regulations). In contrast, Vander Elst *et al.* (2016) divided job insecurity outcomes into job strains and coping reactions (see Table 2). Job strains contain work-related strains (e.g. low vigor) and general strains (e.g. mental health complaints) and coping reactions include psychological coping reactions (e.g. low job satisfaction) and behavioral coping reactions (e.g. low self-rated performance). Taken together, these different categorizations guided our own organization and categorization of the health outcomes linked to job insecurity.

Safety-related outcomes. According to the International Labor Organization in 2015, over 317 million job-related accidents occur around the world annually (Byrd *et al.*, 2018). In the United States alone, it has been estimated that three million workers experience job-related injuries and illnesses each year (United States Bureau of Labor Statistics, 2005). Unsurprisingly, researchers have consistently reported detrimental effects of job insecurity on safety-related outcomes. For example, in a sample of British employees, job insecurity led to more negative safety outcomes, such as low organizational commitment and unsafe working perception (Parker *et al.*, 2001). In an American sample, Probst and Brubaker (2001) reported that higher levels of job insecurity were related to more frequent workplace accidents and injuries.

Job insecurity may also inhibit employees from sharing their work-related problems with their employers. In a more recent study, Probst *et al.* (2013) examined the influence of perceived job insecurity on the numbers of experienced workplace accidents as well as experienced and reported workplace accidents over a one-year period in Italy and the United States. They found that job insecurity is associated with the likelihood of experiencing an accident. Additionally, perceived job insecurity may make employees hesitant to reporting accidents, potentially out of fear of losing their job. Moreover, in both countries, when job security was high (i.e. low job insecurity), there was little difference between the total number of experienced accidents and the number that employees reported. However, as job insecurity increased, so did the under-reporting of accidents. The results of these studies suggest that job insecurity has a harmful impact on safety-related outcomes.

Mediators of job insecurity–health link

Reviewing the literature of job insecurity has revealed that previous research on job insecurity has largely focused on investigating its consequences, rather than identifying potential mediators or moderators. More recent studies, however, have tried to identify potential mediators between job insecurity and health- and safety-related outcomes. In this section, a summary of the most frequent mediators from 2000 to 2018 is presented in Table 3. Based on

Table 2. A classification of the possible outcomes of job insecurity

<i>Job Strains</i>			
Work-related strains		General strains	
Low vigor	Need for recovery	Mental health complaints	Physical health complaints
<i>Coping Reactions</i>			
Psychological Coping Reactions		Behavioral Coping Reactions	
Low	Low	Low	Low
Job satisfaction	Organizational commitment	Self-reported performance	Innovative work behaviors

Source(s): Table courtesy of Vander Elst *et al.* (2016)

Table 3. Frequency of various mediators of job insecurity–health relationship in four different databases (2008–2018)

	Science direct	PubMed	Google scholar	Springer link	Total	Ratio*
Workload	5 out of 11	7 out of 20	8 out of 377	1 out of 25	21 out of 433	4.8%
Psychological contract breach	2 out of 104	6 out of 33	8 out of 1,340	0 out of 85	16 out of 1,562	1.0%
Perceived control	2 out of 13	5 out of 14	8 out of 1,300	0 out of 281	15 out of 1,608	0.9%
Distributive injustice	1 out of 10	3 out of 18	2 out of 1,160	3 out of 53	9 out of 1,241	0.7%
Total	10 out of 138	21 out of 85	26 out of 4,177	4 out of 444	61 out of 4,844	

Note(s): *Ratio is based on the total number of found articles divided on total number of relevant articles in four databases $\times 100$

Source(s): Table by authors

our investigation shown in [Figure 1](#), 61 out of 145 related articles tested various mediators between job insecurity and health-related outcomes. In those 61 articles, workload (4.8%), psychological contract breach (1.0%), perceived control (0.9%) and distributive injustice (0.7%) were respectively recognized as the most important studied mediators in this link over the past 10 years. Below we briefly introduce them.

Workload. Workload refers to the amount of work that an employee is obligated to do. One way of investing employees in the organization is to work more and harder to secure their job position ([Staufenbiel and König, 2010](#)). Job insecurity is more likely to happen in organizations where changes and possibly downsizing is already underway and those are conditions that usually also raise the load of work for the remaining employees ([Datta et al., 2009](#)). Employees who experience job insecurity may feel pressured to work harder to convince management that they are valuable workers and alleviate anxiety about potential job loss ([Fischer et al., 2005](#); [Gilboa et al., 2008](#)). While this may improve their feelings of job security, it may worsen their physical or mental health (e.g. [Habibi et al., 2015](#)). As such, the workload may mediate the relationship between job insecurity and health- and safety-related outcomes. For example, in a study conducted on a sample of 474 Portuguese workers, workload mediated the association between job insecurity and emotional exhaustion in both men and women ([Giunchi et al., 2015](#)). In a longitudinal study, [Richter \(2011\)](#) tested the mediating role of workload between job insecurity and work-family conflicts between two groups of men and women workers in Sweden. The results showed that the workload mediated the association between perceived job insecurity and work-family conflict, but only in men. One explanation for this finding would be related to traditional gender roles. Men may be more vulnerable to job insecurity because they are assumed to be the family's breadwinner which could result in men reacting more severely to job insecurity than women ([Lewis, 2001](#)). Our search revealed that 4.8% of studies included in this review reported workload as a mediator of the job insecurity–health relationship.

Psychological contract breach. Psychological contract breach refers to employee perceptions about how much an organization has failed to carry out its promises or obligations ([Gakovic and Tetrick, 2003](#); [Piccoli and De Witte, 2015](#)). Breaches of psychological contract elicit different reactions in employees, as employees may feel at risk of losing their job. That is, if job insecurity is perceived as a threat, it may breach the established psychological contract between employee and organization. Perceived job insecurity, due to unfavorable effects and unwelcome changes on employees, provokes these

reactions (De Cuyper and De Witte, 2006). In doing so, when employees perceive that their organization does not fulfill its commitments (i.e. providing job security), they may reduce their inputs or contributions (i.e. lower performance, loyalty). Although psychological contract breach affects both the mental and the physical health of employees, it may be more threatening to employees' mental health (Piccoli and De Witte, 2015; Reimann and Guzy, 2017). Thus, psychological breach of contract can act as a mediator of the relation of job insecurity and health-related outcomes. In our database search, 1.0% of the studies found the psychological contract breach as a mediator of job insecurity–health association.

Perceived control. Perceived control is defined as “the belief that one can determine one’s own internal states and behavior, influence one’s environment, and/or bring about desired outcomes” (Wallston *et al.*, 1987, p. 5). Work stressors, such as job insecurity, may reduce the perceived control and lead to negative outcomes. Indeed individuals with lower perceived control may not be able to undertake their job or adapt to it. Several studies support the mediating role of perceived control in the job insecurity–health relationship. For example, perceived control has been demonstrated to mediate the association between job insecurity and various outcomes, including job strains, coping reactions, psychological distress and turnover intention (Vander Elst *et al.*, 2016; Vander Elst *et al.*, 2011). Perceived control was found as a mediator in 0.9% of the studies from the database search.

Distributive injustice. Distributive injustice refers to an employee’s perceived unfairness of the outcomes of organizational processes and decisions (i.e. salary, benefits). When individuals encounter distributive injustice, they perceive an imbalance between job-related inputs and job-related outputs. The perception of this unpleasant imbalance may make employees feel exhausted emotionally (e.g. Piccoli and De Witte, 2015). Similarly, when employees are threatened by potential job loss, they are more likely to compare the ratio of their inputs and outputs in the organization to that of their colleagues and reevaluate the quality of their relationship with the organization. Employees may perceive job security as recognition for their efforts; as such, the possibility of losing the job may be considered unfair compensation (Niesen *et al.*, 2014; Tsutsumi and Kawakami, 2004). Distributive injustice may also lead to a decreased sense of professional self-efficacy and esteem, as well as negative health-related outcomes (e.g. emotional exhaustion; Piccoli and De Witte, 2015). Thus, distributive injustice can be further studied as a mediator in the job insecurity–health studies. In the databases we searched, distributive injustice was a mediator in 0.7% of the studies found.

Moderators of job insecurity–health link

Most studies show that job insecurity is a subjective phenomenon which may vary from an individual to another (Sverke *et al.*, 2002; De Witte, 2005). In this respect, personality traits and cognitive variables can influence the impact of job insecurity on health-related outcomes. According to our investigation shown in Figure 1, 84 out of 145 articles had studied various psychological variables that could moderate the link between job insecurity and health-related outcomes. Table 4 presents a summary of the most studied moderators identified in our investigation. According to this table, in those 84 articles, employability (17.0%), financial job dependence (11.1%), gender differences (8.3%), personality traits (5.2%), social supports (3.7%), organizational safety climate (2.8%) and cognitive appraisals (0.4%) were respectively recognized as the most studied moderators of this link over the past 10 years. However, more research is needed to identify under what circumstances the job insecurity–outcomes association is influenced by these moderators. Below we briefly introduce this list of moderators.

Employability. Employability is defined as a person’s self-perceived ability of finding a new job based on his or her competencies (Berntson *et al.*, 2006), which is important regardless of whether an individual is permanently or temporarily employed (De Cuyper *et al.*, 2018). Additionally, employability can moderate the link between job insecurity and its various

Table 4. Frequency of various moderators of job insecurity–health relationship in four different databases (2008–2018)

	Science direct	PubMed	Google scholar	Springer link	Total	Ratio*
Employability	2 out of 13	2 out of 4	11 out of 65	1 out of 12	16 out of 94	17.0%
Financial job dependence	0 out of 11	0 out of 1	3 out of 20	2 out of 13	5 out of 45	11.1%
Gender differences	5 out of 14	13 out of 27	3 out of 40	7 out of 256	28 out of 337	8.3%
Personality trait	0 out of 30	2 out of 3	6 out of 65	2 out of 93	10 out of 191	5.2%
Social support	4 out of 30	3 out of 58	7 out of 50	6 out of 393	20 out of 531	3.7%
Organizational safety climate	1 out of 5	0 out of 12	3 out of 82	0 out of 40	4 out of 139	2.8%
Cognitive appraisals	0 out of 25	0 out of 0	0 out of 70	1 out of 107	1 out of 202	0.4%
Total	12 out of 128	20 out of 105	33 out of 392	19 out of 914	84 out of 1,539	

Note(s): *Ratio is based on the total number of found articles divided by total number of relevant articles in four databases $\times 100$

Source(s): Table by authors

outcomes such as turnover intention and organizational loyalty (Sverke and Hellgren, 2002). Individuals high on employability are more adaptable with changing working conditions (Fugate *et al.*, 2004). These individuals adapt by changing their reactions and attitudes, as well as by finding opportunities inside and outside their current workplace. This gives them a sense of control and helps them handle uncertainty (Berntson *et al.*, 2006; Fugate *et al.*, 2004), which facilitates a positive attitude in employees regarding the change (Watson and Hubbard, 1996) and accepting it as a challenge rather than a threat. As such, individuals high on employability are expected to show more positive reactions to stressful changes such as job loss (Baruch, 2001).

Several researchers have presented the idea of employability as moderating the effects of stress related to job insecurity (Fugate *et al.*, 2004; Sverke and Hellgren, 2002). For example, employability moderates the association between job insecurity and life satisfaction, such that more employable individuals experiencing high job insecurity reported better life satisfaction than those who were less employable (Silla *et al.*, 2009). Having to find another job may be less difficult, and therefore there is less risk of losing resources. In another study, employability moderated the relationship between job insecurity and affective commitment (i.e. how much employees want to stay at their organization) (Kalyal *et al.*, 2010). Employability did not, however, moderate the relationship between job insecurity and either continuance or normative commitment. Continuance commitment relates to how much employees feel obligated to stay at their organization, and normative commitment relates to how much employees feel they should stay at their organization (Allen and Meyer, 1990). 17% of the articles in our database search reported employability as a moderator of the job insecurity–health relationship.

Financial job dependence. It has been extensively suggested that job insecurity is more stressful for those who are more financially dependent on their job (Richter *et al.*, 2014). Employees may differ in how financially important they perceive work in their life (i.e. differences in cost of living), which in turn may affect how strongly job insecurity impacts them. Among people with similar levels of income, this evaluation may vary, given that they may differ in their monthly expenses or spending preferences (Sears, 2008; Sinclair *et al.*, 2010). Financial dependence can also be examined in terms the proportion of the total

household income that comes from the individual's salary; that is, the individual who would be considered the main breadwinner (Tichenor, 2005). Additionally, economic stress is related to poor mental and physical health (Aronsson *et al.*, 2005), which can even extend to the family of the employee (Fox and Chancey, 1998). This suggests that financial dependence is a vulnerability factor for the negative health-related outcomes for employees experiencing job insecurity, and thus may moderate the link between job insecurity and health-related outcomes.

To date, whether job dependence, in any of these two forms, influence reactions to job insecurity (quantitative or qualitative) has received only limited research attention. Taken together, these results indicate that employees' financial dependence on their job is related to negative outcomes when their employment is threatened. Individuals with the main financial responsibility in the household should be more economically dependent on their job. Thus, those with low subjective financial dependence should react more negatively to high levels of quantitative job insecurity. Employees high on subjective financial dependence are more satisfied with their job, regardless of their level of job insecurity, compared to employees with low subjective job dependence (e.g. Richter *et al.*, 2014). This implies that the degree to which an individual depends on his/her job is essential for how job insecurity links to job satisfaction or perhaps other similar untested outcomes. As previously stated, the results of our search found that 11.1% of the articles reported financial job dependence as a moderator.

Gender differences. Historically, men have been the primary source of income in a household. For this reason, men may be more likely to suffer from perceived job insecurity than their female counterparts, as women may have other roles outside the workplace (i.e. even if they are also working, women are usually the primary caregiver) (Russell, 1999; Wajcman and Martin, 2002). Previous research has investigated similarities and differences in how men and women perceive job insecurity and how their perception may influence their experience of health-related outcomes. Our investigation showed that gender has a clear moderating role in this link; however, the results are mixed in this respect. Although some studies have reported stronger links between job insecurity and stress in men (Näswall *et al.*, 2005), other studies have reported stronger associations in single women (De Witte, 1999), female teachers (Rosenblatt *et al.*, 1999) and female healthcare staff (Mauno and Kinnunen, 1999). In contrast, recent studies did not report significant gender differences in the relationship between job insecurity and health-related outcomes, but only for those who did not hold traditional gender role views (i.e. men as breadwinners, women as caregivers; Gaunt and Scott, 2017). However, gender differences emerged for those who followed traditional gender roles (Gaunt and Benjamin, 2007). Other researchers suggest that family roles, not gender differences, may predict who suffers more from perceived job insecurity (Richter, 2011). For example, women in some families play the role of breadwinner and therefore, job loss should affect them negatively more than men (caregivers) in these families. Gender was reported as a moderator in 8.3% of the studies in our database search.

Personality traits. Several studies have examined the role of different personality traits on the link between job insecurity and well-being (Lau and Knardahl, 2008; Iliescu *et al.*, 2017; Näswall *et al.*, 2005). Iliescu *et al.* (2017) reported that among Romanian employees, neuroticism and extraversion moderated the link between job insecurity and mental and physical complaints, such that high neuroticism and low extraversion strengthened the association between job insecurity and mental health complaints.

Among Swedish nurses, Näswall *et al.* (2005) examined the moderating role of other personality traits, such as locus of control and positive/negative affectivity, between job insecurity and mental health complaints and job satisfaction. Locus of control moderated the link between job insecurity and health complaints. More specifically, those with a greater external locus of control reported higher levels of mental health complaints when experiencing higher job insecurity than those with a less external locus of control. However, when job insecurity levels were low, no significant differences were observed between individuals high or low on external locus of control. This is consistent with previous findings, which reported

that those with an external locus of control would react more negatively to job insecurity (i.e. Ito and Brotheridge, 2007; Newton and Keenan, 1990; Phuong, 2016; Xiao *et al.*, 2018). This suggests that individuals with external attributions may need more support from their organization to sustain the uncertainty level that can be produced from perceived job insecurity. Moreover, having a positive disposition (i.e. cheerfulness, pride), can moderate the extent to which the health-related outcome may be influenced by job insecurity (Bhutoria and Hooja, 2018). We found a total of 5.2% of articles in our database search that reported personality traits as moderators.

Social support. Social support is a coping resource that includes supports from one's family, friends and colleagues (Gaunt and Benjamin, 2007). Some scholars consider social support as the main resource of dealing with the stressor of job insecurity, as it reduces employees' feelings of stress and vulnerability in the face of job insecurity (e.g. Bargal *et al.*, 1992). Both workplace (e.g. supervisors and colleagues) and personal (e.g. family and friends) supports can mitigate the negative impact of job insecurity on health-related outcomes (Lim, 1996; Viswesvaran *et al.*, 1999). Previous studies suggest that social support from colleagues can buffer individuals against job dissatisfaction, job search and noncompliant job behaviors when their job is insecure. Likewise, family and friend support may equally buffer individuals against negative outcomes associated with job insecurity, such as low satisfaction with life (Lim, 1996). Social support was reported as a moderator of the job insecurity–health outcome link outcome in 3.7% of the database records.

Organizational safety climate. Safety climate has been defined as a particular type of organizational climate focusing on how much an individual values safety in the workplace (Neal *et al.*, 2000). This includes a range of factors such as management values (i.e. management emphasizing their preference for safety), safety communication (i.e. sharing safety information openly), safety training (i.e. relevance and accessibility of training) and safety systems (i.e. how much safety procedures are used to prevent workplace accidents). Organizational safety climate can moderate the job insecurity–health related relationship. In this regard, a study of American employees showed that organizational safety climate moderated the link between job insecurity and safety-related outcomes such as safety knowledge, safety compliance, workplace injuries and employee accidents (Probst, 2004). Other researchers have found further support for this effect (e.g. Tucker, 2010).

To explain the moderating effect of organizational safety climate, Probst (2004) suggested that when jobs are insecure in organizations but there is a strong safety policy, job insecurity is likely to motivate employees to prioritize safety to reduce the likelihood of being fired or replaced because of violating safety policy. However, when organizations lack a strong safety policy, employees who feel insecure about their positions are less likely to prioritize safety and instead focus on other job activities, such as production. Therefore, being a part of an organization that emphasizes safety may reduce the likelihood of getting fired for violating safety-related rules.

Cognitive appraisals. To summarize, cognitive appraisal theory refers to how individuals evaluate a potentially stressful event (i.e. as stressful or not) and how to best cope with a stressor (Lazarus and Folkman, 1984). Individuals may appraise stressors as threat appraisals (stressors are future losses) or challenge appraisals (stressors are opportunities). Individual labeling stressors as threats focus on the negative elements of a stressor by overestimating its negative aspects and underestimating its positive aspects. In contrast, individuals who label a stressor as a challenge emphasize its positive aspects, rather than its negative aspects (Barsky *et al.*, 2011; Weiss *et al.*, 1999).

Cognitive appraisal theory can support the idea that how employees appraise job insecurity may influence the effect of perceived job insecurity on health outcomes for both quantitative job security and qualitative job security. In a sample of employees in Belgium and Iran, Charkhabi (2017) tested the potential moderating role of hindrance appraisals and challenge appraisals of quantitative job insecurity and measures of well-being. Hindrance appraisals, but not challenge appraisals, increased the association between quantitative job insecurity and

emotional exhaustion in the Belgian sample. Other interaction effects were not significant. In a separate study, Charkhabi (2017) reported that only hindrance appraisals of qualitative job insecurity amplified the link between qualitative job insecurity and both job satisfaction and emotional exhaustion. Thus, challenge appraisals did not moderate the job insecurity-absenteeism association and the job insecurity-presenteeism association. These findings provide preliminary support for threat appraisals as a more important moderator than challenge appraisals; however, more research is needed to confirm this, especially given that only 0.4% of the articles in our database search reported cognitive appraisals as a moderator.

Mediators and moderators of job insecurity-health link over COVID-19 period

As this study began before the COVID-19 pandemic and continued during COVID-19 pandemic, thus we paid a particular attention to the studies that were published during the period (2019–2022). We focused on Google scholar as the more comprehensive database and found 143 new articles that were related to job insecurity and were published during the pandemic. Of those, only 12 articles specifically were related to mediators and moderators of the link between job insecurity and health-related outcomes. Table 5 tabulates the mediators of this link over this period. According to this table, psychological contract breach (Griep *et al.*, 2021), financial stress (Sarwar *et al.*, 2020), work-family conflict (Hu *et al.*, 2021), financial concern (Wilson *et al.*, 2020), perceived organizational support (Haar and Brougham, 2020), perceived financial problems (Lübke, 2021), feelings of stress (Lübke, 2021), exhaustion and anxiety (Lübke, 2021), perceived lack of control (Lübke, 2021) and family dissatisfaction (Lübke, 2021) were identified as mediators of this link. Also, Table 6 tabulates the moderators of this link during pandemic. As the table shows, psychological capital (Darvishmotevali and Ali, 2020), work centrality (Hu *et al.*, 2021), religious faith (Haq *et al.*, 2022), coping strategies (Menéndez-Espina *et al.*, 2019; Abbas *et al.*, 2021), resiliency (Sarwar *et al.*, 2020), social support (Giunchi *et al.*, 2019) were the studied moderators.

Discussion

Employment is an essential avenue that provides individuals with valuable experiences, social interactions and opportunities for personal development and skill use. The threat of losing such psychologically important resources may reduce individual well-being, especially mental health. In this article, we introduced different negative outcomes associated with job insecurity, as well as those mediators and moderators that can influence the link between job

Table 5. Frequency of various mediators of job insecurity–health relation in Google Scholar (2019–2022)

Mediators	Google scholar	Publication year	Ratio*
Psychological contract breach	1 out of 143	2021	0.69%
Financial stress	1 out of 143	2020	0.69%
Work-family conflict	1 out of 143	2021	0.69%
Financial concern	1 out of 143	2020	0.69%
Perceived organizational support	1 out of 143	2020	0.69%
Perceived financial problems	1 out of 143	2021	0.69%
Feelings of stress	1 out of 143	2021	0.69%
Exhaustion, and anxiety	1 out of 143	2021	0.69%
Perceived lack of control	1 out of 143	2021	0.69%
Family dissatisfaction	1 out of 143	2021	0.69%
Total	10 out of 143	–	6.99%

Note(s): *Ratio is based on the total number of found articles divided by total number of relevant articles in Google Scholar database $\times 100$

Source(s): Table by authors

Table 6. Frequency of various moderators of job insecurity–health relation in Google Scholar (2019–2022)

Moderators	Google scholar	Publication year	Ratio*
Psychological capital	1 out of 143	2020	0.69%
Work centrality	1 out of 143	2021	0.69%
Religious faith	1 out of 143	2022	0.69%
Coping strategies	2 out of 143	2019	1.39%
Resiliency	1 out of 143	2021	0.69%
Social support	1 out of 143	2021	0.69%
Total	7 out of 143	–	4.89%

Note(s): *Ratio is based on the total number of found articles divided by total number of relevant articles in Google Scholar database $\times 100$

Source(s): Table by authors

insecurity and health-related outcomes. Our review suggests that job insecurity is not only detrimental, but that its negative outcomes are mediated through factors such as workload, psychological contract breach, perceived control and distributive injustice. Additionally, factors such as gender, personality traits, social support, job dependence, employability, and cognitive appraisals may also buffer against or exacerbate the link between job insecurity and negative health outcomes. The findings provide a quick checklist for researchers to identify what mediators and moderators have been widely studied in different countries. Furthermore, the results contribute the researchers and organizations to learn investing on what factors may more likely reduce the detrimental effects of job insecurity on the health status of employees and design interventions to prevent it. Similar results during COVID-19 pandemic demonstrated that first the number of studies on mediators of this link were more than the number of studies on moderators. Second, a particular research attention has been paid to the moderating role of coping strategies during pandemic.

Furthermore, we proposed cognitive appraisal theory and conservation of resources theory as two key theories to explain the underlying mechanisms of these mediation and moderation effects. Although both theories agree that lack of resources may make employees more vulnerable to situational stressors, the conversation of resources of theory provides more specific details about personal resources by categorizing them (i.e. object resources, conditional resources, personal resources, energy resources). In contrast, the cognitive appraisal theory focuses on individual interpretations of stressful situations, but does not discuss the types of resources that influence these appraisals. That said, the conservation of resources theory does not seem able to differentiate between individuals' interpretations of stressors.

Following the above reasoning, a combination these theories may better explain: (1) how individuals may appraise a situational stressor, such as job insecurity; (2) how that appraisal may result in negative or positive outcomes and (3) how individual resources may influence the stressor-person encounter. This may encourage researchers to move toward using a combination of two theories, taking advantage of each theory's strengths. Moreover, cognitive appraisal theory can explain how individuals are detrimentally influenced by job insecurity, while conservation of resources theory can explain how draining specific personal resources may lead to stress and other negative outcomes.

That said, both theories still need to expand their categorization of resources by expanding personal resources to these defined categories. Thus, the following recommendations are suggested to combine the two theories: (1) the possible appraisals of an individual of a stressor should be specifically defined and classified, as mentioned in the cognitive appraisal theory; (2) the resources of an individual should be systematically defined and classified, as mentioned in the conservation of resources theory; (3) the mechanism detailing how stress influences the

individual should be described and 4) the mechanism detailing how an individual uses the resources to deal with or adapt to a stressor should be described.

Research and practical implications

First, we listed the most important studied outcomes, mediators and moderators of both types of job insecurity. This provides the groundwork for future researchers, who could use this review to inform future work on new mediators and moderators (e.g. exploring the qualitative job insecurity–health link). Second, we narrowed the scope of the mediators and moderators that were found to influence the job insecurity–health link (i.e. health-related outcomes). Future reviews may want to focus on other outcomes, such as further elaboration on safety-related outcomes or performance-related outcomes. Third, we calculated the percentage of the most studied mediators and moderates of this link in four databases and statistically showed their degree of importance based on this percentage over the past 10 years. Besides, we paid a particular attention to the mediators and moderators of this link during COVID-19 pandemic. This allows future researchers to be aware of less studied and more studied mediators and moderators of this link and examine new mediators and moderators in the future. Fourth, we provided theoretical suggestions for future studies to use a mix of strengths of both cognitive appraisal theory and conservation of resources theory when they test any mediator or moderator between job insecurity and health-related outcomes. Fifth, the current review can help occupational health psychologists or health practitioners by serving as a guideline for designing interventions that reduce perceptions of job insecurity.

Limitations and suggestions

This review does have some limitations. Due to various scales available for measuring job insecurity in different studies, we suggest that future studies categorize the results of studies based on the scale used. Additionally, in this study the role of contextual issues such as rules, regulations, dynamics and perceptions toward job insecurity in different labor markets has not been taken into account. We recommend future studies to take into account the potential role of these factors. Also, we focused on two well-known theories that mostly were used to explain the impact of job insecurity on health. Future studies may use other theories to explain the same effects. In addition, most of the results presented are based on self-report measures, rather than observer-reports or laboratory studies. Job insecurity may be a highly sensitive and confidential issue, which is why these mediators and moderators cannot be easily tested. Also, in this review, we did not organize the results of searches based on sample size, type of study, gender, or other filters. As such, future studies may want to incorporate more filters for their systematic review. Finally, consistent with the results of this study, we suggest future studies use a quantitative approach by which they can report the strength of each mediator and moderator on the job insecurity–health link more quantitatively.

Conclusion

In this review, job insecurity was recognized as a detrimental work stressor that can threaten health-related outcomes. We categorized the mediators that transmit the effect of job insecurity to the outcomes. In addition, we outlined the most studied moderators that can influence the degree to which job insecurity can result in these outcomes before and after COVID-19 pandemic. Workload and financial job dependence were identified as the most studied mediator and moderator of this link respectively. Furthermore, we identified strengths and weaknesses of cognitive appraisal theory and conservation of theory and presented original suggestions to help future scholars, advising a combination of both theories to study these effects.

Notes

1. Please see this website for further info: <http://www.prisma-statement.org/>

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