

An Instrument to Measure Work Stress on Mexican Academic Staff

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Abstract

Having a paid job is, for most people's work, a source of economic security, status, well-being and health. It gives meaning to their lives, but at times it can be a physical and / or mental burden, and a source of frustration, conflict, disappointment, physical and mental discomfort, and even death. These discomforts are sometimes referred to as job pressure, or better known as job stress. The purpose of this study is to build an instrument to measure the relationships of five specific organizational factors impact on the job stress of teaching staff in higher education institutions in the metropolitan area of Monterrey, which amounts up to 19,372 individuals. The variables we considered to be related to work stress are job insecurity, work overload, procedural justice, work-family conflict and insufficient rewards. The results that will be obtained from this research will serve the universities for the planning of strategies to prevent work stress, which has negative consequences at the individual and organizational level.

Keywords

Work stress, job insecurity, work overload, procedural justice and insufficient rewards.

1. Introduction

Certain occupations require an emotional element of work, which suggests that employees in these occupations are more likely to be vulnerable to job stress, one of these occupations is that of academics, which is commonly cited as one of the most stressful (ILO, 2016; Dicke et al., 2014; Gallup, 2014; Hakanen, Bakker, & Schaufeli, 2006; Roeser et al., 2013). In addition to being an occupation (teachers) prone to cause work stress for those who exercise it, academic work around the world has undergone major changes in its financing, forms of remuneration, workloads and hours, forms of communication, role clarity, among other factors (Darabi, Macaskill, & Reidy, 2016).

Work stress in higher education has been studied for decades in developed economies such as the United States, the United Kingdom, Germany, Australia, among others; and it has been shown how various factors in the work of academic staff can generate stress: "The various roles and the existence of numerous factors that require attention produce a set of pressures on individuals in academic positions" (Abouserie, 1996). According to the literature on work stress in academic staff, the factors that usually cause work stress in academic staff are the following: work overload (Guillespie, Walsh, Winefield, Dua, & Stough, 2001; Kinman, 2001; Idris, 2011; Bowling, Alarcon, Bragg, & Hartman, 2015); insufficient rewards (Kinman, 2016; Winefield et al. 2008; Guillespie et al., 2001; Daniels & Guppy, 1994; Gmlech, 1984); procedural injustice (Boyd et al., 2011; Judge & Colquitt, 2004; Winefield et al., 2002); job insecurity (Mudrak et al., 2017; Winefield et al., 2008; McClenahan et al., 2007) and work-family conflict (Lemos et al., 2019; Mudrak et al., 2017; Bell et al., 2010; Kinman & Jones, 2003).

The importance of this study in the context of higher education is that universities have a role of great importance in the economy and social life of nations, since thanks to universities engineers, doctors, scientists and other professionals are produced, which produce most of the innovative research (Dollard, Winefield, & Winefield, 2003).

1.1 Objectives

The main objective of this study is to develop an instrument capable of measuring work stress in academic staff as well as the factors that are likely to cause it, that is, work overload, insufficient rewards, procedural injustice, job insecurity and work-family conflict.

2. Literature Review

This section offers the theoretical support of the research problem. That is, the theories that relate the basic elements of the research are presented, which are: the research variables, the way they are related and the reason for these relationships. We will begin by analyzing the existing literature on the dependent variable of the study, that is, work stress. And based on the above, its formal definition will be proposed based on the exploration of a broad set of empirical and theoretical works. The existing literature on the other independent variables continues to be analyzed: work overload, job insecurity, injustice in procedures, insufficient rewards and recognition, and insufficient resources; pointing out the relationships they have with work stress.

2.1 Work stress

When alternatives are sought to name stress, the result is a set of terms that fall into the category of "response" such as: being stressed, tension or pressure (Weinberg, Sutherland, & Cooper, 2010). Then it can be inferred that, if you want to understand the concept of stress, it will be seen as a consequence. The origins of definitions of stress response are commonly found in the medical field and are usually viewed from a psychosocial perspective.

The second early perspective on the stress treatise is the stress-as-stimulus model. Contrary to the response model, explained in the previous point, this model implies that stress is an element of the environment that influences the individual. Antecedents of this can be found up to Hippocrates, and it is that the Hippocratic doctor supposed that various ailments or diseases were conditioned by elements of the environment (Goodell, Wolf, & Rogers, 1986). In the model of stress as a stimulus, the individual is seen as an entity at the mercy of the stimuli from the environment, where the excess of these causes an imbalance that leads to the inability to deal with them or face them

There are two other theoretical models of stress in addition to the stimulus and the response, the interactional and transactional models of stress correspond to contemporary theories of work stress that emerged in the 1970s and are characterized by the interaction between the individual and the environment, in addition to recognizing the importance of the active role of the person, which introduced a series of psychological concepts to the stress theory (Cox & Griffiths, 2010).

Currently the most used models to address the study of work stress are interactional models and there are 3 main interactional theories: Job Demand-Control (Karasek, 1979), Effort-Reward Imbalance (Siegrist, 1996) and Job Demands-Resources (Bakker & Demerouti, 2007). All of them coincide in one element, the element of demands or effort, and differ in their second theoretical element.

Due to the underlying complexity in the study of stress, there is no universal definition of this construct since it is frequently used, both in the colloquial and scientific hemispheres, to refer to a different set of processes that, although related, are essentially different (Espel, et al., 2018). Here are some definitions of stress:

For the World Health Organization (ILO), work stress is the physical and emotional responses caused by an imbalance between perceived demands and personal skills and resources to deal with those demands. In other words, work stress is determined by the design of work in organizations and labor relations when organizational expectations exceed the knowledge and capacity of the workforce to achieve them (ILO, 2016). In this research we will choose to use the definition of the world health organization, adding that the responses can also be psychological, cognitive and behavioral. Doing so complements the definition of Lazarus & Folkman and Cranwell-Ward & Abbey, which omit the classification of stress responses into more specific factors.

2.2 Work Overload

It seems that the inability to designate a reasonable workload is a present problem in many work contexts. For example, open questions addressed to various workers about which recent events they consider to be the most stressful often result in the heavy workloads to which they are subjected (Keenan & Newton, 1985).

In a general way, the workload can be understood in terms of the volume of work required of an individual. However, this definition ignores the underlying complexity that the job could have. That is, work can be measured in hours worked, level of production, or mental demands (Spector & Jex, 1998).

Bowling, Alarcon, Bragg, & Hartman (2015) use the term workload as “a broad term that includes any variable that reflects the amount or difficulty of one's work”. Multiple factors can be seen from this definition, that is, it encompasses the qualitative and quantitative dimensions (Cooper, Dewe, & O'Driscoll, 2001) (Parasuraman & Purohit, 2000), as well as the physical and mental sub-dimensions (Dwyer & Ganster, 1991) (Janssen, Bakker, & de Jonge, 2001). We'll use this definition considering it's important to differentiate between types of work load.

Work overload is an element closely related to work stress since it can be considered that element of demand of the interactional theories of stress. In addition, other previous research (Mudrak et al., 2017; Sang et al., 2013) have revealed that there is a positive correlation between both variables.

2.3 Job Insecurity

Just over 30 years ago in 1984, the article "Job insecurity: towards conceptual clarity" was published. This article by Greenhalgh and Rosenblatt (1984) originated scientific interest in the problem of job insecurity (De Witte, Vander Elst, & De Cuyper, 2015), and caused it to be given as much importance as other constructs related to work stress such as workload, control (or lack of control), role stressors and poor interpersonal relationships at work (Leka & Jain, 2010).

There are several reasons why job insecurity has become a major problem in the world: global competition between organizations has forced them to reduce their production costs, leading to cuts in staff; periods of economic recession that have caused the closure of organizations and growing insecurity; new technologies that replace the workforce or individuals with few skills; and the belief that the market-driven economy has resulted in changes in employment laws in several countries (Davy, Kinicki, & Scheck, 1997) (Greenhalgh & Rosenblatt, 1984) (Hartley, Jacobson, & Klandermans, 1991) (Sparrow, 1998).

Job insecurity in Mexico is a problem that is increasing, and that is that permanent formal employment has been declining since the beginning of this century. Between 2001 - 2003 this was equivalent on average to 90% of the total. In 2012 it dropped to 86% and at the beginning of 2018 to 85% (Sernicharo & Chávez, 2020).

Job insecurity can be conceptualized as a stressor within the framework of the transactional theory of job stress (Lazarus & Folkman, 1984). The transactional theory of stress suggests that, when being in stressful situations, the individual makes two evaluations: one to consider if the situation could threaten or harm the person of it; and the second to assess whether he has the necessary resources to deal with that situation. Job insecurity coincides with the transactional theory of stress since it is considered a threat to the individual, either in its personal, social and economic aspects (De Witte, 1999).

In this research, it was decided to use the definition proposed by Hellgren et al. as not only is total job loss a threat, but other valuable job characteristics can also be deprived of a job. In addition, the valuable labor characteristics of a job can be considered as important resources for the worker, and would tie in with the Labor demands - resources theory of Demerouti et al. (2001).

2.4 Procedural justice

The study of justice in the 1970s was dominated by investigations that looked for determinants of the distribution of rewards in work environments, as well as reactions to them (Greenberg & Tyler, 1987), that is to say that distributive justice was mainly investigated. However, some researchers pointed to the need to pay attention to fairness in the way rewards were determined, or, in other words, procedural fairness.

Procedural justice is part of a broader concept called organizational justice that refers to the sensation or subjective perception of justice of a person (Di Fabio & Palazzeschi, 2012) and that according to Bies & Moag (1986) includes three dimensions: justice procedural, distributive justice and interactive justice. One reason for using only one of the dimensions of organizational justice in this study is that it is supported by the existing literature not only on job stress but in the context of higher education (Boyd, et al., 2011) (Winefield, Guillespie, Stough, Dua, & Hapuarachchi, 2002).

All definitions of procedural justice agree that the decisions taken must involve judgments of justice and impartiality. For this study we decided to use Cohen-Charash & Spector's (2001) definition of procedural justice. The reason for this is that this definition contemplates the rewards that are awarded once a fair and equitable decision has been made, unlike the other definitions that do not specify the reasons for the decision that is intended to be made through fair procedures.

2.5 Work-family conflict

It is important for organizations to foster a balance between work and family in their employees, evidence has emerged over time that supports the notion that the conflict suffered by people when the responsibilities of one domain interfere with those of the other (work and family) is associated with poor organizational results (Allen, Herst, Bruck, & Sutton, 2000) (Mesmer-Magnus & Viswervaran, 2005). There is also evidence showing that this conflict is related to depression, burnout, stress, and physical health problems, as well as affecting performance and job satisfaction (Allen et al., 2000).

A problem related to the conceptualization of the work-family conflict is the bifurcation of its definition in other similar concepts. For example, the concepts of enrichment, facilitation, and balance have emerged in the work and family literature. Some authors, for example, use the concept of work-family facilitation (Grzywacz, Carlson, Kacmar, & Wayne, 2007), which seems to be the absence of work-family conflict. This is what Russell (1991) was referring to when he warned that separate or disjointed theories could emerge when the elements of the theory were investigated in isolation.

Due to the aforementioned problem, the deficit of definitions of work-family conflict and given that extending this section of definitions would only result in providing alternative definitions of the variable to be studied, it will be decided to choose the definition of work-family conflict as the one offered by Greenhaus & Beutell (1985). The reason contemporary definitions of the work-family relationship are discarded is because they include positive aspects such as compatibility (Barnett & Baruch, 1985) and empowerment (Greenhaus & Parasuraman, 1999) that are contrary to the negative connotations of the classical definition of the construct. It is also the most widely used definition in studies of work-family conflict (Chen, Ayoun, & Eyoun, 2018; French, Dumani, Allen, & Shockley, 2019)

2.6 Insufficient Rewards

The importance of the reward lies beyond giving fair compensation to the employee's effort. It is also possible to influence individual behavior, as O'Neal (1998) supposes: "It can create a work experience that is congruent with the needs of the employee and that motivates him to give an extra effort". Another argument in support of rewards suggests Pfeffer (Pfeffer, 1998) is: "creating a work environment in which individual work is appreciated encourages individual motivation and performance." These two arguments in favor of rewards point to performance and motivation as consequences of reward, however, work stress can also be a consequence of low rewards as will be explained later.

The concept of rewards is closely related to the interactional model Imbalance between efforts and rewards (Effort-Rewards Imbalance in English) which suggests that in order to achieve the desired productivity without causing symptoms of stress in the workers, adequate rewards have to be offered to compensate efforts (Bakker, Killmer, Siegrist, & Schaufeli, 2000).

According to the model of disequilibrium between efforts and rewards, the evaluations of the trade-offs between costs (efforts) and gains (rewards) are dictated by norms of reciprocity and fairness. When the worker perceives that he is receiving few rewards in relation to the efforts invested, a feeling of threat, anger and / or depression is generated that can result in adverse health effects such as stress. For example, having a very demanding job without the employer offering growth opportunities (rewards) is an example of a particularly stressful work environment.

3. Methods

The present study has an exploratory and documentary scope, so it was only limited to compiling and ordering information in a way that would result in an adequate instrument for measuring the study variables that are work stress and the factors that promote it. This instrument is intended to be applied in the next phase of research in the near future.

4. Data Collection

The study's focal variable, work stress, has the characteristic of being complex since its conceptualization, which has generated diverse and unique theories that seek to explain it. This, in turn, has led to the construction of several instruments for measurement. Among the available instruments we chose to use the General Health Questionnaire (GHQ-12) by Goldberg & Williams (1988) because it is the most widely used in stress studies in the context of higher education. This is convenient because it facilitates the comparison of results between studies and the causes of differences in scores that occur between different contexts can be theorized.

For the independent variable work overload, it was considered that the ideal would be to use the Copenhagen questionnaire developed by the Department of Psychology of the National Institute of Occupational Health Copenhagen in Denmark. The reason is that most of the available instruments contemplate the overload of work as a one-dimensional construct (quantity of work), and the present research has the need to measure the variable in two dimensions (quantity and difficulty of work). The complex nature of the work of the academic requires this distinction between efforts since they are not only expected to work in front of a group but they are also expected to carry out tasks of great difficulty such as conducting scientific research, attracting private investment, etc.

Job insecurity is also a construct that has many meanings and is supported by multiple questionnaires for measurement and although the De Witte scale is frequently reported in scientific articles on job insecurity and is a recent questionnaire, we chose to use the job insecurity scale of Hellgren et al. (1999) since the quantitative and qualitative dimensions are considered, unlike De Witte's one-dimensional instrument. The reason for this is the inability of Mexican universities not only to provide a permanent position to academics but to even deny valuable job characteristics such as health insurance, paid vacations or Christmas bonuses.

There are relatively few studies on procedural justice focused on the context of higher education, and some of the studies that contemplate this variable focus on students. O'Connell, O'Siouchru & Rao (2019) also propose that procedural justice is divided into 2 dimensions, the informational and the interactional. This research will use the Niehoff & Noorman measurement scale for procedural justice as it has reported high levels of reliability and, in addition, the items it contains were considered more suitable than the items in other questionnaires. This instrument is made up of the formal and interactional dimensions, however, in this study and in its future phases, only the formal dimension will be taken into account since the treatment of superiors towards academics (interactional dimension) is not considered relevant.

The work-family conflict is another independent variable of the research and has been investigated as a precedent of the welfare and attitudes of workers (Carlson, Grzywack, & Kackmar, 2009). This variable arises from the demands that universities impose on academics, causing them not to have much time to direct to personal things (Torp, Lysfjord, & Midje, 2018). Different instruments are available for measurement, and a handful of them have in common the 4 item constitution. The Voydanoff instrument stands out in reliability levels greater than .9 that have been reported in some scientific articles (Schieman & Young, 2013) (Bowen, Govender, Edwards, & Cattell, 2017), for this reason this questionnaire will be included in the measuring instrument of this study.

The last independent variable of research is rewards. These, being a simpler concept than all the previous ones, have fewer definitions and have fewer formal instruments for their measurement. Although the questionnaire developed by Saks considers job promotion and recognition and is a recent tool, the Effort-Reward Imbalance questionnaire by Siegrist et al. (Siegrist, et al., 2004) has a strong theoretical and empirical relationship with the variable rewards, has also reported the highest level of reliability (0.81). For these reasons, this questionnaire was chosen to form the measuring instrument of this research. Although you can go to the monthly income to know about the rewards of a person (objective data) it is necessary to make use of more questions to obtain more complete data such as the perceptions (subjective data) they have about the economic stimuli they receive as well as the estimate from your colleagues; which is an important type of reward.

5. Results and Discussion

This section presents the research variables, their dimensions and their operationalization in order to show how the study variables can be measured (See Table 1). To develop the measurement tool for this research, several options of existing questionnaires measuring the study variables were reviewed and the most appropriate option was chosen for each. Below are the questionnaires that make up the measuring instrument and its justification.

Table 1. Operationalization of variables

Variable	Dimensions	Items to evaluate the dimension	Operationalization
Work stress	One-dimensional	12	Frequency and degree to which stress symptoms affect an individual in a given period of time
Work overload	Cuantitative	8	Degree to which job demands and time pressure dominate the work environment
	Cualitative	8	
Job insecurity	Cuantitative	3	concerns about continuity of work or some of its characteristics
	Cualitative	3	
Procedural justice	One-dimensional	6	presence of mechanisms that promote fair decision-making by superiors
Work-family conflict	One-dimensional	4	degree to which the individual perceives that his personal life is being compromised by his work obligations
Insufficient rewards	Job promotion	4	amount of economic benefits and degree of esteem that the individual receives for their work
	Recognition	5	

The resulting instrument consists of 53 items with a 5-point Likert measurement scale ranging from 1 = "Much less than usual" to 5 = "Much more than usual". The work stress variable consists of 12 items and is one-dimensional. The work overload variable consists of 8 items and is divided into quantitative and qualitative dimensions. The job insecurity variable consists of 6 items and is also divided into quantitative and qualitative dimensions. The procedural injustice variable consists of 6 items and is one-dimensional. The work-family conflict variable consists of 4 items and is one-dimensional. Finally, the variable insufficient rewards consist of 9 items and is divided into the dimensions of job promotion and recognition.

6. Conclusion

Through a broad review of the existing literature, it was possible to build an adequate instrument to measure work stress and psychosocial risk factors in the context of higher education in Mexico. For this, the theoretical models Job-Demand Control, Effort-Reward Imbalance and Job Demands-Resources were used as support. The element of demands in the three theories refers to the variable work overload, job insecurity, procedural justice and work-family conflict represent the control and resources available to the academic and the rewards appeal to the same name. in the Effort-Reward Imbalance theory.

The next thing will be to test the instrument in the near future in the target population and compare from internal consistency coefficients to results with other studies, taking into account cultural, economic and cultural differences between contexts. And after that, the relationships between study variables that until now are assumed to be direct and positive will be analyzed; however, it is not ruled out that there may be interaction relationships through mediation or moderation, as the interactional theories of stress seem to suggest.

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