

# Occupational Stress: Measuring its Impact on Employee Performance and Turnover

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## Abstract

Stress is an emotional strain resulting from adverse circumstances, and currently stress seems to be the numinous sound that affects the performance of employee in the workplace. Stress is not new in the physiological concepts, but it growing so fast that makes imperative for organizations and employees to accept this instinctive indicator. Higher level of stress existed with no managerial concern for solution consequently lowering the employee performance, staking organizational reputation and loss of skilled employees. These situations call for immediate concern that organizations can reduce the occupational stress levels of their employees by designing an effective stress management practices according to their expectations. In that way, employees can feel that they are the most important assets of the organizations. The purpose of study is to investigate the relevance of different factors of occupational stress such as workload, interpersonal relationships, conflict, and career development to overall employee performance. It also examines the impact of stress to the job satisfaction and turnover levels of employee based on reviewed literatures. Studies revealed that those stressors increases tremendously to employee performance, but voluminous empirical studies also found reverse. This paper will provide a valuable understandings and awareness that can contribute to develop policies for increasing employee performance and mitigating turnover rate.

**Keywords:** performance, occupational stress, turnover

## 1. Introduction

The word stress derives from the Latin word *stringere*, meaning to draw tight and was used to describe hardship or affliction. Contemporary practice of the term was owes much to the work of Hans Selye, often referred as the father of stress. Herrero et al. (2012) cited on Selye and Ogilvie's research that stress defined as the nonspecific response of the body to any demand, whether it is caused by, or results in, pleasant or unpleasant conditions. Since then, numerous definitions of stress have been created and refined by several independent sets of researchers. However, literature also indicates that there is no universally agreed definition of stress and due to its wide diffusion, the term stress is used to describe individual response to pressure when handled with challenging and sometimes hazardous positions. Defining a single theoretical formalization about the term is one of the difficulties, therefore Table 1 collects different definitions of stress as reported in literature. It is mostly emphasize on three categories: force acting upon individual, physiological and psychological reaction, and consequence of the interaction between environment and individual. All the views below indicate that although various researchers approach the issues of stress from different perspectives, there is still a wide spectrum of unanimity based on simplicity and clarity of the definition proposed by Selye.

In the studies on stress, some professions are distinct as extremely perilous and stressful jobs. These occupations frighten individual's life in terms of occupational safety and work accidents. For instance, IS profession (Bolhari et al., 2012), hospital nurses (Rickard et al., 2012), construction project consultants (Bowen et al., 2014), police agency and officers (Kim et al., 2016; Ma et al., 2015), bank employees and managers (Manea et al., 2013), military forces (Sharma, 2015), and teaching profession (Keshavarz and Mohammadi, 2011; Alexandrache, 2015), and so on are in the stressful professions group. In the dynamic and complex work settings, stress is considered as the potential source of all forms of aggression which impacted employee and organizations. For more than two decades, the results of large proportion of management studies regarding this instinctive indicator were profound and absolute. It proves to influence and to be linked to job performance and satisfaction, organizational behavior, health and safety issue, and personnel fluctuation which producing high costs for different types of organizations and socio-professional categories (Brate, 2014; Patterson et al., 2013). If, as stated by various authors, workplace assessment is often the first step in the overall management process being undertaken in order to improve the safety and health conditions in the workplace and ensure a culture which demonstrates the delineated values.

In a managerial point of view, stress is a critical issue because the perceived incongruity among individual and organizational values can stimulate uncertainty and extrication which may lead to job stress with doubt about the working environment as its primary element. Various authors revealed that subjective, emotional dissonance (Popli and Popli, 2014; Celik and Oz, 2011) and social competencies are more important predictor of stress especially in human service than quantitative job demands and job control (Bakker et al., 2010). HR practitioners and experts observed that contradictory view on trust and respect between employees and organization were one of the resilient cultural barriers in the implementation of workplace effectiveness and

efficiency. They also identified organizational commitment as a key risk conjecture for some positive and negative outcome variables. They believe that employees with strong affective commitment to the organization perform better than those with lower levels of commitment (Aghdasi et al., 2011).

Table 1. Different definitions of stress in a present literature

<i>Author(s)</i>	<i>Definition</i>
Rosenthal & Alter (2012)	Is considered as one of the models resulted from a combination of high demands with decision latitude in the workplace
Cicei (2012)	Can lead to low organizational commitment, which can contribute to voluntarily employee turnover and may lead to low overall firm's performance
Wang & Chang (2012)	Is the physical and psychological strain characterized by sociality of stressor, persistence of stress load, and collectivity of stress object
Babatunde (2013)	Is defined in different ways over the years as either a stimulus, or a response, or a stimulus-response combination or a transactional relationship between individuals and the environment
Manea et al. (2013)	Is appears to be one of the most important consequences of modern life and of the technological evolution of society, having its consequences wisely not ignored, but rather investigated and diminished as much as possible
Dumitrescu (2014)	Is defined as biological and psychological reaction of the body to an aggression
Rehman (2015)	Is a psychological, physical or emotional reaction, resulting from an individual's response to environmental anxiety, conflicts, pressures and similar other stimuli that intimidate a person's ability to manage

## 2. Objectives of the study

- To investigate the relevance of different factors of occupational stress to overall employee performance
- To examine the impact of stress to the job satisfaction and turnover levels of employee
- To identify appropriate tools to manage stressors

## 3. Methodology

This research is a descriptive study to find the most distinctive occupational stressors among the employees for any organization. The data has been collected and explored from various secondary data sources such as corporate reports, credible books and newspapers, and published high quality journals and dissertations. The practicality of utilizing existing data for research is becoming more predominant and it provides viable option for academic scholars who may have limited time and resources (Andrews et al., 2012). Also, secondary data sources offer methodological benefits and can contribute to scientific knowledge through offering an alternative perspective (Johnston, 2014).

## 4. Occupational stressors and its impact

Numerous studies in different parts of the world indicate that these factors are significant. This section looks at the six latent factors that contribute to occupational stress which includes workload, interpersonal relationships, role conflict and ambiguity, career development those treated as antecedent variables of occupational stress, whereas job satisfaction and turnover act as mediating variables for the organizations. This factors aiming to explain the impact of occupational stress on employees' outcome is expressed diagrammatized in Figure 1 below. Each of the categories demonstrates that employee is often found to struggle with job characteristics that cause a structural lack of fit between demands and their individual's capability to cope with such demands (Babatunde, 2013). In fact, when employee has insignificant control to the situation, the acceptable stimulating stress builds the opposite.

### 4.1 Workload

Workload refers to the work demands placed upon employees, and is described in both quantitative and qualitative terms (Lazuras et al., 2009; Rozman et al., 2014). Quantitative workload refers to the amount of work required for a given job task but taken as a set, employees are being asked to do more than can be accomplished comfortably. Qualitative workload reflects the perceived difficulty of the work because they do not have the ability, knowledge, or skills to complete each task (Stanyar, 2012; Fugate, 2010). On the literature, it indicates that the most stressful jobs are execution jobs in which role ambiguity and high workload is very significant. For instance, Nnuro (2012) investigated and evaluated occupational stress and its effects on job performance among 150 members of staff at Koforidua Polytechnic, Ghana. The outcome of the research revealed that workload was the major cause of occupational stress. Similar findings were reported in Sudan, a total of 150 male and female employees from different departments at the Sudanese University were conducted. Results showed that workload is one of the factors associated with occupational stress and their effects on

organizational performance. 75.3 percent of employees complained from workload which may affect organization negatively (El Shikieri and Musa, 2012).

Based on numerous stress management studies, workload is undoubtedly affect productivity and efficiency of employees. Dumitrescu (2014) affirmed that workload affects employee differently according to experience, the ability to handle a situation and coping strategies. Moreover, employee-employer related issues such as paying attention to workload conflict, employee recognition to outstanding results, and the advent of proper stress management training programs were perceived as significant factors to improve employee productivity and capacity decisions (Bruggen, 2015). When levels of workload become too high or too low, quantitative performance decreases and making more mistakes (Pikaar, 2015). Research indicates that lacking of responsibility and engaging in simple and repeated work could cause stress for workers because they cannot realize their ambition and value, and they would be tired of the work and finally lose their creativity (Wang and Chang, 2012). In today's competitive and dynamic business environment, managers are incessantly examining the impact of workload and looking for various techniques in order to escalate the quantitative performance and to mitigate quality difficulties low while cultivating their human capital. During this process, they should also ensure that their employees do not experience excessive workload in order to reduce the occurrence of deviant behavior namely bullying at the workplace (Stouten et al., 2011).

#### *4.2 Interpersonal relationships*

Stoetzer (2010) stated that the work environment is a multifactorial aspect of people's life that affects health both in a positive and negative way. Interpersonal relationship is one of the imperative mechanisms of the work environment which are associated to occupational stress. Within organizations, there are at least two potential concentrations for the interpersonal relationship: the superior-subordinate and the co-workers relationship. Interpersonal relationships at work constitute the regular interaction among individuals working together in the same organization. These relations are a natural part of the work environment (Patricia, 2015), and considered as a major source of support and stress (ACAS, 2014; Akande et al., 2014). There are certain researchers that indicate the negative influence of poor relationships with stress (Jarinto, 2011; Naqvi et al., 2013; Naidoo et al., 2013). For instance, destitute relationships with employees are interconnected with the feelings of threat, incredulous and unsupportiveness and the most dreadful action is when employee condemn job stress they experienced on their colleagues. All these elements of stressors would create qualitative difficulties within the organization to a great extent (Wong and Spence Laschinger, 2015), and in turn lower organizational commitment and higher turnover intention.

The study done by Hassan et al. (2012), however, revealed the opposite interpersonal relationships between managers and workers positively lead to high productivity, quality of working life and organizational commitment in all the organizations whether public or private. Undoubtedly, these findings are consistent with other studies such as Semerciöz et al. (2011) which investigated the influence of interpersonal and institutional relationship on innovativeness where innovation may not be possible without commitment to work. It has even been recommended that having sufficient social support from management, family and friends mitigates the negative effects of stress (Landy and Conte, 2010). In addition, those employees with extreme amount of group uniformity are best able to cope with stress on the job and complete assignments within the stipulated time frame. Author indicates that give and take balance is considered a comprehensive formula for long-term satisfaction but without expectations from others relationship is meaningless (Patricia, 2015). Consequently, this notion explains why relationships with employees and within a team are so noteworthy.

#### *4.3 Role conflict and ambiguity*

Workplace has become a source of extreme stress as a result of technological changes, mass retrenchment, information overload, and demand for greater productivity, ferocious competition and uncertain future. So as to keep pace with this competitive world, employees in the workplace spend most of their time striving to meet their job obligations hence ignoring the stressors that have adverse effects on their domestic, social and personal life (Jahanzeb, 2010). It was identified that another resilient predictor to contemplate occupational stress includes role conflict and role ambiguity. Role conflict occurs when employee are confronted with incompatible role expectations in the various social statuses they occupy. It can also be connected either a short period of time or a long period of time, and to situational experiences. While role ambiguity has been defined as the degree to which clear and specific information is lacking with role requirements (Yongkang et al., 2014). In order word, main employee perceived that he or she was in a difficult situation which the job obligation is unclear and not stated in straightforward manner. It has also been established to be an aspect in job dissatisfaction, influence employee creativity and tendency to quit in the organization.

A research by Karimi et al. (2014) verified that these stressors are significantly and positively related. Therefore, long hour working, incompatible request, ambivalence in responsibilities, and a sense of overburdenment will increase the level of stress. Indeed, that these researches have the same results with Idris

(2011) which tested the over time effects of stressors on psychological strain among Malaysian public university academics. However, in a study, Kemery (2006) found that, although role conflict and role ambiguity individually had negative relationships with job satisfaction, the combined effect of the two factors on appointment satisfaction was more complex. When role conflict and role ambiguity were both high, appointment satisfaction was low, but when role conflict was low, satisfaction was actually higher when role ambiguity was high. On the other hand, Karadal et al. (2008) analyzed the effect of role conflict and role ambiguity on job satisfaction and organizational commitment. Their studies showed that both stressors were negatively related to employee's job satisfaction and organizational commitment. It was concluded that to avoid role conflict and role ambiguity within a workplace, managers should provide specifically the duties required by an employee to avoid any different understanding and confusion, in turn foster creative decision-making and techniques.

#### 4.4 Career development

Career development is a self-initiated process with support and resources provided by managers and the organization. In this research, the last category of related stressors coined from issues that demoralize career development. Subtly in this category is the veracity that stress-related problems originating from status congruence, thwarted ambition, and lack of job security often have the potential of impeding careers progression and may negatively influence employees' sense of wellbeing and commitment to work. For instance, the constant changes in the nature of work due to technological advancement utilized by modern organizations to improve workplace performance and sustain competitive advantage has led to a growth in nonpermanent contracts and contingent work arrangements caused by downsizing, outsourcing, delaying, mergers and acquisitions, restructuring and re-organizing work schedules to cope with the pace of global competition and technological sophistication (Kosseck et al., 2012). Consequently, these changes in modern working life have generated stressful working environment that is resulting into low job autonomy, poor promotional prospects and even situations where the employee is stuck due to a position with no opportunity for advancement or promotions (Shukla and Sinha, 2013).

A study by Olusegun et al. (2014) carried out to appraise job stress and performance of employee in an organization. It was vehemently revealed that a high majority (95%) of the respondents were on the opinion that career development is considered to likely cause a disruptive effect on performance of employees. Subsequently, organizations need to understand that positive career development for their employees is an approach of helping to attract and retain the best employee: by responding and recognizing the needs of individual employees they will get the best out of them. They developing a wide spectrum of mechanisms of human resource development in order to motivate and improve the superior performance of their employees. As stated by Rahman et al.'s (2014) research, it is also interesting to consider other related variables such as appraisal systems, performance measurement, and promotion that can be the potential mediators of performance enhancement. Overall, by having efficiency and effectiveness of employees' performance, the organization will no doubt be able to achieve a better overall growth (Ahmad et al., 2015). But, it will only be effective and sustainable if the mutual benefit has a clear sense of direction and purpose to both parties. With this additional factor, government also benefited from facilitating career development at large in order to support the development of a knowledge economy.

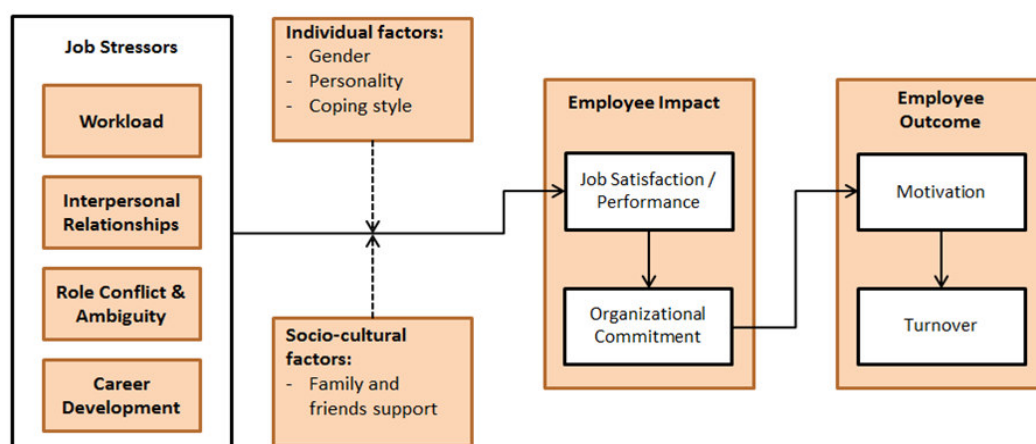


Fig 1: A schematic framework of factors associated with stress and outcomes  
 Source: Modified from Mosadeghrad's research, 2013



## 5. Occupational stress and employee differences

Ideal employee is obviously has certain characteristics to display when responding to stress. In a given situations, what is causes of stress response may not be stressful for someone else. Therefore, the impact of stress may show differently from person to person and will depend on the multifaceted interaction among their personality, values, skills and other significant preparations. In the contextual viewpoint, occupational stress in organization is subjective by diverse factors in relation to individual differences such as gender, personality characteristics, social support, sense of self-esteem, and self-efficacy. Empirical evidence indicates that gender difference has played a critical role for stress studies across a number of disciplines (Kim et al., 2016). They believed that both male and female employees have their own unique concepts of, and attitudinal responses to stress. For instance, Maran et al. (2014) carry out a quali-quantitative study to analyze unease and perceived stress in a population of 485 male and female police officers in a large city in northern Italy, and investigate the consequences of these and the coping strategies adopted. Results show that both men and women are self-critical and their evaluation of the professional and contextual circumstances in which they operate is filtered by pessimism and self-blame, with higher levels of somatization in women: female patrol police officers are at the highest risk of psychological distress.

Undoubtedly, female police officers were more receptive and understanding of citizens' expectations and dealt with calls for service, particularly domestic disturbances, better than their male counterparts (Mallicoat and Ireland, 2014). While Holcroft and Punnett (2009) demonstrated that male gender was one of the variables associated with injury severity or likelihood of traffic accidents. However, several studies reported that there are no differences between the genders in relation to workplace stress. Researchers believed that evidence for the adverse effects of multiple roles, lack of career progress and discrimination and stereotyping was inconsistent (Gyllensten and Palmer, 2005). Issues on personality characteristics also are reflected to stressful events. The background, previous experience, choice of coping strategies and social support processes at the time of changes may impact stress vulnerability levels. For stress vulnerability model, it was proposed that an individual has unique biological, psychological and social elements. These elements include strengths and vulnerabilities for dealing with stress (Tariq and Mujeeb, 2013). Furthermore, personality characteristics of employee have the potential to moderate the effects of stress in one's life (Pidgeon et al., 2014; Cann et al., 2010). These factors are due to influencing their exposure to emotional and wide array of stressful events, by indicating their response to some adverse situations or by affecting both these practices. Personality characteristics that can influence an individual's reaction to stressors include certain attitudes, anxiety, tolerance and perceptual styles (Schulze and Steyn, 2007).

Another factor that needs to discuss in relation to management settings is about social support. Social support refers to the assistance available from and provided by other individual including colleagues, family, friends and partners. It is frequently viewed as buffer against a stressful environment. They also proposed that social support may aid in preventing the stress response by functioning as a resource that provides alternate means to address the stressor (McTernan et al., 2016). Although social support is studied across a wide range of disciplines and linked to many benefits, empirical evidence reveals that social support is not always beneficial or associated with better outcomes, as expected. Nevertheless, lack of support can make individuals more prone from different symptoms, ranging from physical, psychological and behavioral problems including insecurity. One of the general symptoms of employee insecurity is presenteeism. Yang et al.' research (2016) examined the effects of co-worker and supervisor support on job stress and presenteeism. The findings suggest that presenteeism is reduced by increased respect and concern for employee stress at the workplace, by necessary support at work, and by presence of comfortable interpersonal relationships among colleagues and employers. For better result, similarities of personal and organizational values might be more encouraging for employee, and therefore can naturally fuel their work performance (Dylag et al., 2013).

## 6. Occupational stress and employee outcome

From the above-mentioned concerns of the four separate, but yet interconnected factors that causes occupational stress within the workplace. Job-related stress has become a growing concern because it is found to have significant economic implications for the organizations and bad publicity (Mirela and Madalina-Adriana, 2011). When stress factors are coupled with ineffective or uncaring management, stress can become a problem that impact both organizational and extra-organizational outcomes such as decline performance, dissatisfaction, lack of motivation and commitment, and an increase in turnover (Dwamena, 2012). Herewith, employees begin to look for new jobs or consider retirement. The loss of top-notch employees can damage operation and production. What's worse, it would bring about a large sum of costs related to employment and training new employees. For instance, every time an organization replaces a salaried employee, it costs 6 to 9 months' salary on average. For a manager making \$40,000 a year, that's \$20,000 to \$30,000 in recruiting and training expenses (Merhar, 2016). Another example, occupational stress is the cause of approximately 40% of turnover and 50% of workplace absences. The annual cost of occupational stress and its effects in the US is estimated to be over \$60 billion to

employers and \$250–300 billion to the economy (Roberts et al., 2012). Thus, recruiting and training the right person can be hefty because it requires staff time and money. Once the right person in place, their individual's intrinsic characteristics of hard work or even commitment to work demands is not reciprocated with adequate appreciation in form of financial entitlement, then it is likely to elicit negative emotions and sustained employee stress (Babatunde, 2013). Also, if prospective employees observed that the working environment of organization is stressful their application process has the possibility not to continue.

### **7. Stress management strategies or intervention**

Various organizations have been struggling for the right strategies to respond to the rapid challenges of business environment which are influencing the performance of individuals and organizations as well. The role of management is to maintain an appropriate level of stress by providing an optimal environment and; by doing a good job in areas such as performance planning, role analysis, job enrichment, continuing feedback, ecological considerations and interpersonal skills training (Olusegun et al., 2014). On the other hand, employees are the critical assets and prerequisites to sustain performance in this rapid changing world however more often they are experiencing stress in their workplace that increase negative consequences such as low motivation and turnover, thus requiring the use of coping skills to adapt. Coping strategies are remedial actions where survival and livelihood are involved and endangered. Additionally, it is usually allocated broad categories that draw distinctions between methods. For instance, instrumental coping (referred to as problem-solving) focuses on ways to tackle the issue and acts accordingly to change the reality, while emotion-focused coping gathers tools to nurture one's emotional health during the stressful period (Semel Institute, 2013).

The purpose of coping mechanism is not to thoroughly eliminate stressors but maximize it in a certain level to ensure that employees are in the best stress situation. So, it means there's no "one size fits all" solution to managing stress. When employee is previously experiencing pain and unpleasantness from the effects of stress, the main important procedure is to medicate the symptoms, this include both the identification of those suffering from extreme pressures of stress as well as providing medical care and engaging in a cognitive behavioral therapy programs (Sarid et al., 2010) or counselling services. The next method is to assist employees build stress management techniques to make them less vulnerable to its effects, and prevent stress from strengthening out of control again in the future. Examples would be teaching employees in a healthier way to use time management and practicing mindfulness techniques (Felton et al., 2015) such as yoga and meditation. Other techniques are laugh, sound sleep and even exercise too. The third method is to eliminate or reduce the environmental stressors that are generating the stress; this would involve environmental substances which has harmful or poisonous effects, or adjusting the operation and production schedules and workloads.

Unquestionably, these ideas has demonstrated a consistent pattern with other studies such as Cairns (2013) affirmed that the suppression of natural environmental stresses such as fires and floods can also be a source of stress to biological systems resulting from human actions. Moreover, in the area of health care, several experimental projects in today's technological advances are in progress to measure the influences of "computer-generated healing" using devices such as commercial video game for the enhancement of traditional stress management therapies (e.g. Kato, 2010). The study shed light on the wide spread silent problem by name "stress", which has become significantly because of the dynamic globalization and changing needs of life styles that results into cut-throat competition. Workplace is a volatile stress factory for most employees and it is rightly called as the age of anxiety (Uma, 2011). Therefore, in a recent empirical studies, researchers fervently indicate that flexible work schedule and leave days have been adopted as a potential relieving mechanism or strategies for employees (Howard et al., 2014; Sweet et al., 2016; Moen et al., 2016). Additionally, establishing a value clarification, being organized, setting personal priorities, creating positive attitude, use of flexible work schedule and leave days are resources to mitigate employee occupational stress.

### **8. Conclusion**

Around the globe, organization has posed several issues to practitioners and administrators in today's changing segment in the operation of organization. It is compulsory for them to reshape and reexamine the whole structure of its operations. Appropriate use of human resources is inevitable and important for the survival and sustaining of any organizations. This paper had been done on the crucial concern employee's occupational stress, performance and turnover. It is assumed with faithful certainty that employees working in any organization are after all human beings characterizing by their own nature, attitude, talent and unpredictable and uncontrollable behavior pattern. Each employee culminates in with stress resulting from any course of action from top management and colleagues or subordinates. It was revealed that change in attitude, setting personal priorities and use of flexible work schedule is essential and needed. Additional research would pave the way to developing an efficient work tool and interventions designed to target factors that have an impact on the performance, and ultimately generate benefits for employees and organizations alike. Therefore, one has to balance well between personal and professional life. The study suggested that appreciation from management

can improve greatly the contentment and morale. Also, participatory decision-making, skill building, social security and support are some of the other attentions that management must pay to its employees. In general, management has to recognize its responsibility for minimizing occupational stress at all time, thereby, reducing physical and psychological health among employees.

## References

- Aghdasi, S., Kiamanesh, A. R. & Ebrahim, A. N. (2011). Emotional intelligence and organizational commitment: Testing the mediatory role of occupational stress and job satisfaction. *Procedia – Social and Behavioral Sciences*, 20, 1965-1976. DOI: 10.1016/j.sbspro.2011.11.447.
- Ahmad, T., Farrukh, F., & Nazir, S. (2015). Capacity building boost employees performance. *Industrial and Commercial Training*, 47(2), 61-66. DOI: 10.1108/ICT-05-2014-0036
- Akande, J. A., Olowonirejuaro, A. O. & Okwara-Kalu, C. E. (2014). A Study of level and sources of stress among secondary school students. *Journal of Research & Method in Education*, 4(5), 32-36. Available from <http://www.iosrjournals.org>
- Alexandrache, C. (2015). Occupational stress as a factor of (non) orientation teaching profession. *Procedia – Social and Behavioral Sciences*, 180, 1038-1043. DOI: 10.1016/j.sbspro.2015.02.199
- Andrews, L., Higgins, A., Andrews, M. W., & Lalor, J. G. (2012). Classic grounded theory to analyse secondary data: Reality and reflections. *The Grounded Theory Review: An International Journal*, 11(1), 12-26.
- Babatunde, A. (2013). Occupational Stress: A Review on conceptualisations, causes and cure. *Economic Insights – Trends and Challenges*, 11(3), 73-80.
- Bakker, A. B., van Veldhoven, M. & Xanthopoulou, D. (2010). Beyond the Demand-Control Model: Thriving on High Job Demands and Resources. *Journal of Personnel Psychology*, 9(1), 3-16. DOI: 10.1027/1866-5888/a000006
- Bolhari, A., Rezaeian, A., Bolhari, J. & Bairamzadeh, S. (2012). Occupational Stress Level among Information Technology Professionals in Iran. *International Journal of Information and Electronics Engineering*, 2(5), 682-685. DOI: 10.7763/IJIEE.2012.V2.187
- Bowen, P., Edwards, P., Lingard, H. & Cattell, K. (2014). Occupational stress and job demand, control and support factors among construction project consultants. *International Journal of Project Management*, 32, 1273-1284. DOI: 10.1016/j.ijproman.2014.01.008
- Brate, A. T. (2014). Diagnosing occupational stress in Romanian organizations. *Procedia – Social and Behavioral Sciences*, 127, 559-564. DOI: doi:10.1016/j.sbspro.2014.03.310
- Bruggen, A. (2015). An empirical investigation of the relationship between workload and performance. *Management Decision*, 53(10), 2377-2389. DOI: 10.1108/MD-02-2015-0063
- Cairns, J. (2013). *Stress, Environmental*. In: Levin S.A. (2nd ed.) *Encyclopedia of Biodiversity*, 7, pp. 39-44. Waltham, MA: Academic Press Elsevier Inc. DOI: 10.1016/B978-0-12-384719-5.00137-4
- Cann, A., Stilwell, K. & Taku, K. (2010). Humor Styles, Positive Personality and Health. *Europe's Journal of Psychology*, 6(3), 213-235. DOI: 10.5964/ejop.v6i3.214
- Celik, D. A. & Oz, E. U. (2011). The Effects of Emotional Dissonance and Quality of Work Life Perceptions on Absenteeism and Turnover Intentions among Turkish Call Center Employees. *Procedia – Social and Behavioral Sciences*, 30, 2515-2519. DOI:10.1016/j.sbspro.2011.10.491
- Chronister, J. A., Johnson, E. J. & Berven, N. L. (2006). Measuring social support in rehabilitation. *Disability and Rehabilitation*, 28(2), 75-84. DOI: 10.1080/09638280500163695
- Dumitrescu, C. (2014). Influence of psychotherapeutic interventions on occupational stress. *Procedia – Social and Behavioral Sciences*, 127, 696-701. DOI: 10.1016/j.sbspro.2014.03.338
- Dylag, A., Jaworek, M., Karwowski, W., Kozusznik, M. & Marek, T. (2013). Discrepancy between individual and organizational values: Occupational burnout and work engagement among white-collar workers. *International Journal of Industrial Ergonomics*, 43, 225-231. DOI: 10.1016/j.ergon.2013.01.002
- Dwamena, M. A. (2012). *Stress and its effects on employees productivity – A case study of Ghana ports and harbours authority, Takoradi* (Master's thesis, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana). Available at <http://ir.knust.edu.gh/bitstream/>
- El Shikieri, A. B. & Musa, H. A. (2012). Factors associated with occupational stress and their effects on organizational performance in a Sudanese University. *Creative Education*, 3(1), 134-144. DOI: 10.4236/ce.2012.31022
- Felton, T. M., Coates, L. & Christopher, J. C. (2015). Impact of Mindfulness Training on Counseling Students' Perceptions of Stress. *Mindfulness*, 6(2), 159-169. DOI: 10.1007/s12671-013-0240-8
- Fugate, N. (2010). *The effect of quantitative and qualitative workload on strain outcomes and attributions: A test of the demand control model* (Master's thesis, Northern Kentucky University, Highland Heights, Kentucky, USA). Retrieved from <http://search.proquest.com/docview/250058321?accountid=136258>
- Gyllensten, K. & Palmer, S. (2005). The role of gender in workplace stress: A critical literature review. *Health*

- Education Journal*, 64(3), 271-288.
- Hassan, M., Toylan, N., V., Semerciöz, F., & Aksel, I. (2012). Interpersonal trust and its role in organizations. *International Business Research*, 5(8), 33-39. DOI:10.5539/ibr.v5n8p33
- Herrero, S. G., Saldaña, M. A., Rodriguez, J. G., & Ritzel, D. O. (2012). Influence of task demands on occupational stress: Gender differences. *Journal of Safety Research*, 43(5-6), 365-374. DOI: 10.1016/j.jsr.2012.10.005
- Holcroft, C. A. & Punnett, L. (2009). Work environment risk factors for injuries in wood processing. *Journal of Safety Research*, 40(4), 247-255. DOI: 10.1016/j.jsr.2009.05.001
- Howard, S., Hordacre, AL., Moretti, C. & Spoehr, J. (2014). *Investigating flexible work arrangements: For nurses and midwives in the acute hospital sector*. Adelaide: Australian Workplace Innovation and Social Research Centre, The University of Adelaide.
- Idris, M. K. (2011). Over time effects of role stress on psychological strain among Malaysian public university academics. *International Journal of Business and Social Science*, 2(9), 154-161.
- Jahanzeb, H. (2010). The Impact of job stress on job satisfaction among academic faculty of a mega distance learning institution in Pakistan. A case study of Allama Iqbal Open University. *Mustang Journal of Business & Ethics*, 1, 31-48.
- Jarinto, K. (2011). Understanding Stress: Comparing between US, Japanese and Thai Management Styles. Available at SSRN: <http://ssrn.com/abstract=2282280> or <http://dx.doi.org/10.2139/ssrn.2282280>
- Johnston, M. P. (2014). Secondary data analysis: A method of which the time has come. *Qualitative and Quantitative Methods in Libraries*, 3:619-626.
- Karadal, H., Ay, U. & Cuhadar, M. T. (2008). The effect of role conflict and role ambiguity on job satisfaction and organizational commitment: A study in the public and private sector. *The Journal of American Academy of Business*, 13(2), 176-181.
- Karimi R., Omar, Z. B., Alipour, F. & Karimi, Z. (2014). The influence of role overload, role conflict and role ambiguity on occupational stress among nurses in selected Iranian hospitals. *International Journal of Asian Social Science*, 4(1), 34-40.
- Kato, P. M. (2010). Video games in health care: Closing the gap. *Review of General Psychology*, 14(2), 113-121. DOI: 10.1037/a0019441
- Keshavarz, M. & Mohammadi, R. (2011). Occupational stress and organizational performance: A case study of Iran. *Procedia – Social and Behavioral Sciences*, 30, 390-394. DOI: 10.1016/j.sbspro.2011.10.077
- Kemery, E. R. (2006). Clergy role stress and satisfaction: Role ambiguity isn't always bad. *Pastoral Psychology*, 54(6), 561-570. DOI: 10.1007/s11089-006-0024-3
- Kossek, E. E., Kalliath, T. & Kalliath, P. (2012). Achieving employee wellbeing in a changing work environment: an expert commentary on current scholarship. *International Journal of Manpower*, 33(7), 738-753. DOI: 10.1108/01437721211268294
- Landy, F. J. & Conte, J. M. (2010). *Work in the 21st century: An introduction to industrial and organizational psychology*. Altamont Pass, California: Wiley & Sons.
- Lazuras, L., Rodafinos, A., Matsiggos, G. & Stamatoulakis, A. (2009). Perceived occupational stress, affective, and physical well-being among telecommunication employees in Greece. *Social Science & Medicine*, 68, 1075-1081. DOI: 10.1016/j.socscimed.2008.12.020
- Ma, C. C., Andrew, M. E., Fekedulegn, D., Gu, J. K., Hartley, T. A., Charles, L. E., Violanti, J. M. & Burchfiel, C. M. (2015). Shift work and occupational stress in police officers. *Safety and Health at Work*, 6, 25-29. DOI: 10.1016/j.shaw.2014.10.001
- Mallicoat, S. L. & Ireland, C. E. (2014). *Women and crime: The essentials*. Thousand Oaks, CA: Sage Publications.
- Manea, C-N., Salceanu, C., Chiper, C. & Chiper, I. (2013). Occupational stress and tolerance of bank employees. *Procedia – Social and Behavioral Sciences*, 92, 495-500. DOI: 10.1016/j.sbspro.2013.08.707
- Maran, D. A., Varetto, A., Zedda, M. & Franscini, M. (2014). Stress among Italian male and female patrol police officers: A quali-quantitative survey. *Policing: An International Journal of Police Strategies & Management*, 37(4), 875-890. DOI: 10.1108/PIJPSM-05-2014-0056
- McTernan, W. P., Dollard, M. F., Tuckey, M. R. & Vandenberg, R. J. (2016). Enhanced Co-Worker Social Support in Isolated Work Groups and Its Mitigating Role on the Work-Family Conflict-Depression Loss Spiral. *International Journal of Environmental Research and Public Health*, 13(4), 382. DOI: 10.3390/ijerph13040382
- Merhar, C. (2016). Employee retention: The real cost of losing an employee. Retrieved from <http://www.zanebenefits.com/blog/bid/312123/Employee-Retention-The-Real-Cost-of-Losing-an-Employee>
- Moen, P., Kelly, E. L., Fan, W., Lee, S. R., Almeida, D., Kossek, E. E. & Buxton, O. M. (2016). Does a flexibility/support organizational initiative improve high-tech employees' well-being? Evidence from



- the work, family, and health network. *American Sociological Review*, 81(1), 134-164. DOI: 10.1177/0003122415622391
- Naidoo, K., Botha, C. J. & Bisschoff, C. A. (2013). Causes of Stress in Public Schools and its Impact on Work Performance of Educators. *Journal of Social Science*, 34(2), 177-190.
- Naqvi, S. M. H., Khan, M. A., Kant, A. Q. & Khan, S. N. (2013). Job Stress and Employees' Productivity: Case of Azad Kashmir Public Health Sector. *Interdisciplinary Journal of Contemporary Research in Business*, 5(3), 525-542. Available at <http://journal-archives34.webs.com>
- Olusegun, A. J., Oluwasayo, A. J. & Olawoyim, O. (2014). An overview of the effects of job stress on employees performance in Nigeria tertiary hospitals. *Ekonomika*, 60(4), 139-153. Available at SSRN: <http://ssrn.com/abstract=2561076>
- Patricia, O. (2015). Improving interpersonal relationship in workplaces. *IOSR Journal of Research and Method in Education*, 5(6), 115-125. DOI: 10.9790/7388-0562115125
- Patterson, G. T., Chung, I. W. & Swan, P. G. (2013). *Effects of stress management training on physiological, psychological and behavioral outcomes among police officers and recruits*. No. 8 of Crime Prevention Research Review. Washington, D.C.: U.S. Department of Justice, Office of Community Oriented Policing Services.
- Pidgeon, A. M., Rowe, N. F., Stapleton, P., Magyar, H. B. & Lo, B. C. Y. (2014). Examining Characteristics of Resilience among University Students: An International Study. *Open Journal of Social Sciences*, 2, 14-22. DOI: 10.4236/jss.2014.211003
- Pikaar, E. (2015). *Finding alternative ways to measure mental workload while driving* (Master's thesis, Leiden University, Leiden, Netherlands). Retrieved from <https://openaccess.leidenuniv.nl/bitstream>
- Popli, R. & Popli, G. S. (2014). An Empirical Study on the Impact of Emotional Dissonance and Quality of Work Life on Organizational Development in the Service Sector of India. Available at SSRN: <http://ssrn.com/abstract=2487820> or DOI: 10.2139/ssrn.2487820.
- Rahman, R. R., Aman, O., Adnan, H., Ahmad, M. A. & Darus, N. M. (2014). Factors of relationship between occupational stress, developing training needs and performance enhancement of SMEs' employees in Melaka. *International Journal of Economics, Finance and Management*, 3(4), 183-196. Available at <http://www.ejournalofbusiness.org>
- Rickard, G., Lenthall, S., Dollard, M., Opie, T., Knight, S., Dunn, S., Wakerman, J., MacLeod, M., Seiler, J. & Brewster-Webb, D. (2012). Organizational intervention to reduce occupational stress and turnover in hospital nurses in the Northern Territory, Australia. *Collegian*, 19, 211-221. DOI: 10.1016/j.colegn.2012.07.001
- Roberts, R., Grubb, P. L. & Grosch, J. W. (2012). Alleviating job stress in Nurses. NIOSH: Workplace Safety and Health. Medscape and NIOSH. Retrieved from <http://www.medscape.com/viewarticle/765974>
- Rozman, L., Jost-Leser, V., Trunk-Sirca, N., Dermol, V. & Skrbinjek, V. (2014, 25-27 June). *Assessing student workload – tough nut to crack*. Paper presented at Human Capital without Borders: Knowledge and Learning for Quality of Life. Portoroz, Slovenia.
- Sarid, O., Berger, R. & Segal-EngelChin, D. (2010). The impact of cognitive behavioral interventions on SOC, perceived stress and mood states of nurses. *Procedia - Social and Behavioral Sciences*, 2(2), 2010, 928–932. DOI:10.1016/j.sbspro.2010.03.128
- Schulze, S. & Steyn, T. (2007). Stressors in the professional lives of South African secondary school educators. *South African Journal of Education*, 27, 691–707.
- Semerciöz, F., Hassan, M., & Aldemýr, Z. (2011). An empirical study on the role of interpersonal and institutional trust in organizational innovativeness. *International Business Research*, 4(2), 1-12. doi:10.5539/ibr.v4n2p125
- Semel Institute for Neuroscience and Human Behavior (2013). How do you cope? Available from [https://www.semel.ucla.edu/dual-diagnosis-program/News\\_and\\_Resources/How\\_Do\\_You\\_Cope](https://www.semel.ucla.edu/dual-diagnosis-program/News_and_Resources/How_Do_You_Cope)
- Sharma, S. (2015). Occupational stress in the armed forces: An Indian army perspective. *IIMB Management Review*, 27, 185-195. DOI: 10.1016/j.iimb.2015.06.002
- Shukla, S. & Sinha, A. (2013). Employee Turnover in banking sector: Empirical evidence. *IOSR Journal Of Humanities And Social Science*, 11(5), 57-61.
- Stanyar, K. R. (2012). *Quantitative workload, physical activity, and quality of sleep: An investigation of nurses working the night shift and 10 hour or longer shifts* (Master's thesis, Clemson University, Clemson, South Carolina, USA). Retrieved from [http://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=2310&context=all\\_theses](http://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=2310&context=all_theses)
- Stoetzer, U. (2010). *Interpersonal relationships at work: Organization, working conditions and health*. Unpublished Doctoral Thesis, Department of Public Health Science Karolinska Institutet, Sweden. Retrieved from <http://diss.kib.ki.se/2010/978-91-7409-793-1/thesis.pdf>
- Stouten, J., Baillien, E., Broeck, A. V., Camps, J., Witte, H. D., & Euwema, M. (2011).

- Discouraging bullying: The role of ethical leadership and its effect on the work environment. *Journal of Business Ethics*, 95(1), 17-27.
- Sweet, S., Pitt-Catsouphes, M. & James, J. B. (2016). Successes in Changing Flexible Work Arrangement Use: Managers and Work-Unit Variation in a Financial Services Organization. *Work and Occupations*, 43(1), 75-109. DOI: 10.1177/0730888415595094
- Tariq, Q. & Mujeeb, S. (2013). Impact of stress vulnerability on anxiety and depression. *Asian Journal of Social Sciences & Humanities*, 2(2), 501-508. Retrieved from [www.ajssh.leena-luna.co.jp](http://www.ajssh.leena-luna.co.jp)
- Uma, D. T. (2011). A Study on Stress Management and Coping Strategies With Reference to IT Companies. *Journal of Information Technology and Economic Development*, 2(2), 30-48. Retrieved from <http://www.gsmi-ijgb.com>
- Wang, S. & Chang, D. (2012). Occupational Stress and Coronary Artery Disease, *Coronary Artery Diseases*, Dr. Ilyia Chaikovsky (Ed.), ISBN: 978-953-51-0238-0, InTech, Available from: <http://www.intechopen.com/books/coronary-artery-diseases/occupational-stress-and-coronary-artery-disease>
- Wong, C. A. & Spence Laschinger, H. K. (2015). The influence of frontline manager job strain on burnout, commitment and turnover intention: A cross-sectional study. *International Journal of Nursing Studies*, 52(12), 1824-1833. DOI:10.1016/j.ijnurstu.2015.09.006
- Yang, T., Shen, T., Zhu, M., Liu, Y., Deng, J., Chen, Q. & See, L. (2016). Effects of Co-Worker and Supervisor Support on Job Stress and Presenteeism in an Aging Workforce: A Structural Equation Modelling Approach. *International Journal of Environmental Research and Public Health*, 13(1), 72. DOI: 10.3390/ijerph13010072
- Yongkang, Z., Weixi, Z., Yalin, H., Yipeng, X. & Liu, T. (2014). The relationship among role conflict, role ambiguity, role overload and job stress of Chinese middle-level cadres. *Chinese Studies*, 3(1), 8-11. DOI: 10.4236/chnstd.2014.31003