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Health And Stress Symptoms In University Professors And Their Relationship With The Process Of Obtaining A Permanent Position

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HEALTH AND STRESS SYMPTOMS IN UNIVERSITY
PROFESSORS AND THEIR RELATIONSHIP WITH THE PROCESS
OF OBTAINING A PERMANENT POSITION

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Dedication

This dissertation is dedicated to my loving and supportive daughter Arelis and my son Raul, and my grandchildren Gilberto, Diego y Gael Parra. It is also dedicated to my husband Carlos Velásquez, my aunt Adriana Saucedo, my friends Oscar Esparza, Carlos Castañón and Diana Chaparro for their encouragement and support. These individuals provided the inspiration necessary to successfully complete my doctoral journey.

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IRENE CONCEPCION CARRILLO-SAUCEDO, B.A.; MA. Psychology

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Abstract

This research study used a quantitative, correlational method to examine health and stress symptoms in university professors and their relationship with the process of obtaining a permanent position and participation in a merit pay program. The Stress Profile Inventory (PEN) was used to measure professors' health habits, social support network, Type A behavior, cognitive hardiness, coping styles and psychological well-being. An original measure with a Likert-type scale was used to measure health status. The questionnaires were distributed to 104 professors from the Universidad Autónoma de Ciudad Juárez (UACJ) who provided voluntary participation. Based on the results of the study, certain health problems and stress symptoms were associated with the process of obtaining a permanent position and participation in the economic stimulus program.

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Chapter 1: Introduction

The process to attain a permanent faculty position is one of the fundamental dimensions of the teaching profession in higher education. However, changes in the world of work produced by globalization have transformed the conditions of higher education and teaching in México. Between 1989 and 2007, higher education programs in Mexico designed a common strategy for increasing educational quality, consisting of constant evaluation according to certain established goals and objectives. The evaluation would be a systematic tool used to measure successes and the effects (positive and negative) of university activities (Lastra & Comas, 2011). In the late 1980s, the Federal Mexican Government assigned monetary incentives for full time professors (Cordero, Galaz & Sevilla, 2003). This would allow the Mexican government to provide economic incentives (stimuli and scholarships) to academics, in order to enable greater productivity in Mexican universities, and gradually build an educational structure based on the recognition and promotion of professors who make contributions to socio-economic dynamics (Comas, 2007). Stimuli was intended to resolve issues such as low wages, brain drain, and decreasing higher education support through reform of the higher education system, and restoration of the attractiveness of an academic career (Comas, 2007; Gil, 2001; Ornelas, 1995).

Neoliberal policies in Mexico were implemented in higher education institutions in the form of programs responsible for assessing the teaching, mentoring, research, and academic management activities of full time professors. These programs included: 1) The National Research System (SNI – Sistema Nacional de Investigadores), 2) scholarships and incentives through the Professional Development Program (PRODEP- Programa para el Desarrollo Profesional), and 3) state monetary resources competitions through the Performance Incentive

Program for Professors (ESPEDEP-Programa de Estímulos al Desempeño del Personal Docente) (Luna, Rueda & Arbesu, 2006), all of which have increased the workload for higher education faculty (Mora, Ponce de Leon & Rios, 2014). In 1984, an analysis by the International Labour Organization (OIT by acronym in Spanish), defined a worker's psychosocial risk factor as the interaction between the person and working environmental conditions, organizational culture, and work management (Juarez, 2007). Negative interactions may trigger psychosocial processes involved with declining health, resulting in a decrease in performance and impacting the objectives that need to be achieved as part of one's job functions (Lopez, 2009). In the current institutional context, time commitments go beyond official working hours in order to complete work activities. Thus, it is imperative to address how such working conditions relate to health concerns.

Some current research suggests that changes in the teaching profession and stress generated by the process of obtaining a permanent position are closely related to health. Studies in Mexico identify the presence of stress and various health problems due to professors' pursuit of college scholarship programs and incentives (Urquidi & Rodriguez, 2010). Urquidi and Rodriguez (2010) explored the stress levels that Mexican professors experience as a result of their daily work, and showed that the most stressful situations were related to academic incentive programs operating in Mexican educational institutions since 1990. Despite two decades of operating within the stimulus program, Mexican academics have not adapted to their demands, which inevitably leads to the experience of stress at different levels (Urquidi & Rodriguez, 2010). The alarming rise of psychosocial diseases is associated with the influence of work on health, stemming from hectic lifestyles, social and professional pressures, increased responsibilities, and

labor market and organizational changes faced in the workplace that also affect social welfare (Ortega, 2006).

Research suggests that professors are subject to a lot of stress due to the rigid requirements that the permanent position process demands, in spite of the economic benefits that it implies. One study analyzed academic work for associations between the qualitative content of work and work demands with various physical and mental health disorders among Mexican professors (Martinez, 2010). The study found that the greatest demands pertaining to work overload and stressful positions were statistically related to various disorders (Martinez, 2010). Martinez, Mendez and Murata (2011) analyzed the relationship between the content and demands of academic work to physical and mental health disorders among faculty in the stimulus grant program. They found that these working conditions and the consequences (stress, fatigue, depression, sleep disorders, cardiovascular, and digestive problems) for participating in the stimulus program were strongly related. Participation in these programs involves taking on multiple tasks that undermine leisure time, family life, and therefore health (Martinez et al., 2011). The number of work hours, the pace of work, deadlines, demands, and various activities influence teachers' performance and health (Cladellas & Badia, 2011). Interestingly, when university professors deal with the long work hours that their activities demand, it seems to influence their perception of health and stress symptoms especially in the early hours of classes, as well as the late afternoon hours of classes (Cladellas & Castello, 2011).

Among faculty at the Universidad Autónoma de Ciudad Juárez in Chihuahua, Mexico, there is a contradiction between professors' perceptions and positions about adopting the National Educational Policy (PRODEP), and acceptance of the general academic improvement objectives, namely, providing scholarships and monetary stimuli (Castro, 2011). The quality of

professors' educational focus is lacking because of the neoliberal policies that drive seeking new administrative positions, as their evaluation is centered on productivity (Martinez & Preciado, 2009), in addition to ongoing training and dissemination or research. The move toward increasing productivity has led to academic quality deterioration, simulation (Roman, 2010), selection of activities that increase base salary (Arbesu, Gutierrez & Piña, 2008), and in some cases, health problems among those who have increased their productivity in order to improve their income (Martinez & Vasquez, 2001). Boada, De Diego, and Agullo (2004) found that excessive work activity and physical and mental health problems have had a negative impact on the institution itself in terms of absenteeism, decreased quality of production, and stagnant productivity. In this increasingly complex and competitive world, universities have been affected by multiple and sometimes contradictory demands that are manifested in the health of their workers (Tamez & Perez, 2009). For example, university professors who are participating in the "Sistema Nacional de Investigadores" (SNI) are focusing all their attention on research, putting in second place teaching activities and participation in the collegiate life of the institution (Galaz, Padilla & Sevilla, 2008).

In prior research on the work of university professors, there is a tendency to focus on attrition or burnout as the central response to work demands (Moreno, Garrosa, Rodriguez, Martinez & Ferrer, 2009). Other studies focus on working conditions and their impact on workers' welfare and health (Leitner & Resch, 2005; Parra, 2003; Sparks, Faragheher & Cooper, 2001). More research is needed on variables that affect researchers' productivity such as work stress, fatigue, frustration, lack of job satisfaction and lack of sensitivity toward other people, among many other factors that inhibit creative development of research and teaching activities (Magana & Sanchez, 2008). Faculty are a population that has not been studied much in terms of

their health as workers (Kinman, 2001), and only in recent years, several studies have dealt with burnout and chronic job stress (Martinez & Preciado, 2009). Across studies there are few findings regarding health problems and stress symptoms, and their relationship with the process of obtaining a permanent position among university professors in Mexico. The university professors who are constantly working through this process are likely negatively impacted by working conditions, institutional quality and personal demands.

Problem Statement and Study Purpose

Changes induced by the globalization process have transformed the educational process, work dynamics, and lifestyles among faculty at the Universidad Autónoma de Ciudad Juárez (UACJ). Standards for professors' competence and adequacy levels have increased due to the demands to increase productivity (Reséndiz, 2008). Based on the research discussed above, it appears that educational policy in Mexican higher education is affecting professors' health and impacting the academic development of full-time professors at UACJ. The purpose of this study is to examine the relationship between the requirements of the permanency process and professors' stress symptoms and health status. The current study focused on full-time professors from the Universidad Autónoma de Ciudad Juárez, Chihuahua. Research regarding health status and stress symptoms in professors who are actively involved in scholarship and grant programs in UACJ are not well documented. Due to the geographic location and accessibility of this university researcher, as well as the viability of faculty to commitment to the study, the present study was conducted at the UACJ. For the purpose of the present study, the permanent position process is operationally defined as the set of activities that faculty must conduct in a balanced and simultaneous way during a period of three years from initial recruitment, and the requirements to prove compliance with such activities. This quantitative correlational study

utilized a survey designed to examine the relationship between professors' health and stress symptoms and the process of obtaining a permanent position. Participants were also given an opportunity to provide responses regarding factors that influenced their working conditions, increased workload, and their personal demands. The knowledge gained from the study may be used to inform the current body of research regarding professors' health and stress and the permanency process, as well as lay a foundation for additional research in Mexican higher education.

Research Questions

The process of obtaining a permanent position and participation in the economic stimulus program may be affecting professors' health and suffering of stress symptoms. This research investigated the following questions:

1. What are the relationships between physical health and the process of obtaining a permanent position among university professors?
2. What are the relationships between mental health (specifically, stress levels) and the process of obtaining a permanent position, among university professors?
3. To what extent is professors' mental health (stress levels) and physical health related?
4. What is the relationship between socio-demographic variables with physical health and mental health among university professors?
5. To what extent do relationships between the process of obtaining a permanent position and physical and mental health differ for men and women?

Hypotheses

1. There are positive relationships between the process of obtaining a permanent position and physical health problems among university professors.

2. There are positive relationships between the process of obtaining a permanent position and mental health (stress levels) among university professors.
3. Socio-demographic variables such as age and gender are related to physical and mental health among university professors.
4. The relationship between the process of obtaining a permanent position and physical and mental health differ for men and women.

Researcher's Background

I work as a full-time professor at the Universidad Autónoma de Ciudad Juárez, Chihuahua, where the current study took place. Since I started working in UACJ, as a full-time professor with a PRODEP profile, and having participated in the economic stimulus program, I observed that participating in this process was an exhausting task for professors. One of the requirements is to have an updated PRODEP profile in order to participate in the economic incentive program each year, during a period of three years, until the PRODEP profile must be updated again. During a period of six years, I closely observed how some professors were having physical and mental health problems, and with a lot of stress symptoms. Thus, I was intrigued by such problems. In order to better understand the reasons why this was happening and most importantly in order to understand if the process of obtaining a permanent position and participation in the economic stimulus program were related to health problems, I decided to conduct the current study. Because of my position at the UACJ as a professor, I know quite a few of the participants in the current study. My role as a professor and the level of trust I had already gained through my role as a colleague made the participants feel comfortable and allowed them to be as honest as possible in conveying their health and stress problem with me.

Summary

This chapter included an overview of the research problem of how the process of obtaining a permanent position and the participation in the economic stimulus program are impacting professors' health and the stress symptoms. It provided a brief description of how the educational process in UACJ has been transformed by the neoliberal policies (described further in Chapter 2). The chapter pointed out that the current study was focused on full-time professors of UACJ with a PRODEP profile, in order to gain insight on how they have experienced the pursuit of obtaining a permanent position and their participation in the economic incentives program, as well as the positive or negative effects as professors. Furthermore, the chapter outlined the research questions of the current study and briefly referred to the quantitative design, which is fully explained in the methods chapter. The next chapter, the literature review, provides an overview of the strategies that Mexican universities have undertaken to address the issue of the implementation of the neoliberal policies in higher education, and an examination of literature regarding professors' health and stress symptoms.

Chapter 2: Literature Review

Introduction

The following chapter describes how full-time professors are facing the requirements of the PRODEP profile at the Autonomous University of Juarez, Chihuahua (UACJ). The literature discusses the process of faculty recruitment and the strategies aimed at participation in the economic incentives. Research is also reviewed on the factors related to professors' health and stress symptoms.

Neoliberal policies

The adoption of neoliberal policies in Latin America in the early 1990's was a product of a complex combination between power relationships, public politics and institutional changes (Acosta, 2000). Government agencies, university leaders, and public and university authorities introduced agenda transformations (Acosta, 2002). The Mexican universities are now faced with daily changes in educational settings; recently, Institutions of Higher Education (IES- Instituciones de Educación Superior) initiated adjustments to increase the quality of service that they are offering. These actions are focused almost entirely in the evolution of educational paradigms (Méndez and González, 2011; 2013), certifications and re-certifications in ISO (International Organization for Standardization) as well as the various processes of accreditation according to the discipline to which they belong. The university professor is the main actor in the process, and this may have detrimental effects on the quality and development of professors' work, as well as on their health (Cárdenas, Méndez & Gonzales, 2014). This leads university professors to be in charge of functions not only directly related to the work in the classroom, but also with administrative and planning issues. It is perceived that university professors,

particularly academics, are subject to constant demands, such as making important decisions, introducing effective changes, innovating and staying current on technological advances in their specific area of knowledge. Therefore, stress is inherent in their professional performance; it is present to a greater or lesser degree in the development of the occupational tasks (Sanchez & Maldonado, 2003). These neoliberal policies promoted by international organizations, national governments and business beneficiary groups have had different impacts on Institutions of Higher Education in Mexico, highlighting the widespread reduction in resources available for universities and scientific research, including falling academic salaries, with public education institutions and professors being the most affected (Altbach, 2004). It is worth noting that to improve the level of quality among Mexican faculty, and make them more competitive for a higher income, the professors must meet the requirements that stimulus programs are demanding (Garza, 2006). Requirements could be associated with professors' physical and mental health. Additional research that examines the relationship between health and stress symptoms and their relation with the process of obtaining a permanent position and participating in the stimulus program may enhance the development of strategies in order to have healthy and highly qualified professors.

Background on the Higher Education Programs

The National Research System (SNI- Sistema Nacional de Investigadores)

The National Research System was created by Mexican Presidential Agreement and published in the Official Federation Journal on July 26, 1984, in order to recognize researchers dedicated to producing scientific knowledge and technology. The acknowledgment is given through peer review evaluation and it is to grant the recognition of "National Researcher". This distinction symbolizes the quality and prestige of scientific contributions with an economic

incentive whose amount varies with the assigned level (Conacyt, 2015) according to the following criteria. Applicants or nominees must have a Ph.D. having published a minimum of an article in a scientific or academic journal, or a chapter as the sole author or first author in a book by a prestigious publisher, within the three years preceding the application; or, the works as a co-author within the same lines of research. Level I participants must have a defined line of research, and published an original book or a minimum of five articles in scientific or scholarly journals, book chapters, and research maps. Also counted are coordinated books, anthologies, and compilations that include personal participation in the original research, and proven participation in educational work and training of human resources. For Level II, in addition to what is mentioned in Level I, the participant also must have a consolidated research career, demonstrated by original published work including books, articles, book chapters, reviews, criticism, coordinated books, anthologies or compilations and relevant editions or significant translations, as well as directed undergraduate or postgraduate finalized dissertations. For Level III, in addition to what is mentioned in Level II, the participant must have scientific work that represents a recognized contribution to knowledge, and published relevant work in their research lines (Conacyt, 2015).

Professional Development Program (PRODEP-Programa Para el Desarrollo Profesional).

In 1996, Mexico's Secretary of Public Education designed and developed a special program named "Programa para el Mejoramiento del Profesorado" (PROMEP), which now has the name "Programa para el Desarrollo Profesional" (PRODEP). The objective of the program was to strengthen the state universities, professionalize the instructors, and thus, improve the quality of higher education under an incentive plan for training and knowledge generation.

Specific features of the program included: a) high quality postgraduate scholarship; b) basic academic work tools for PTC (Profesor de Tiempo Completo) and professors recognized with the desired academic profile; c) support for strengthening academic groups (CA-Cuerpos Académicos); and, d) support for the incorporation of new full-time faculty (SEP, 2014). The purpose of the program was to foster the improvement of postgraduate studies by the professoriate, in order to better develop research activities, team work, student mentoring, and to gain a better international level ranking (Garza, 2006). In order to achieve these goals, PRODEP imposed individual requirements for collective objectives. The central idea of this program has been to change professors' academic profiles, making them more competitive and comparable with professors from the best universities worldwide (SEP, 2006). In order to obtain the desired PRODEP profile, professors must hold the highest degree in their field (preferably, a doctorate), and provide evidence of balanced teaching, research, mentoring, and academic management duties. The professors must be devoted full-time to several academic activities and should handle them evenly: 1) teach at least the equivalent of one classroom course each of the three school years immediately preceding the date that the application to PRODEP is submitted, 2) be actively involved in a project to generate knowledge, i.e., one book or article on average per year, 3) tutor at least 5 students per semester, and 4) participate in an official collective or collegial academic management activity, or have an official responsibility as program coordinator in some educational institutional program (SEP, 2014). University professors must update their electronic file that tracks faculty activity requirements at the end of every year over three years. These requirements were established by the Higher Education Programs in Mexico, in the pursuit of educational quality, subject to constant evaluation of goals and objectives (Lastra & Comas, 2001). Professors at postgraduate universities evaluated as having a desirable

PRODEP profile are recognized at a given point in time and financially supported with a computer, office equipment, or books.

Performance Incentive Program for Professors (ESPEDEP- Programa de Estímulos al Desempeño del Personal Docente)

The objective of the ESPEDEP program is to recognize the effort and quality of professors' academic performance in order to contribute to raising academic quality, as well as encourage professors' improvement in their teaching practice, and to promote greater involvement in research, mentoring, outreach, and participation in collegiate groups. Another premise of the ESPEDEP program is to foster professors' retention and exclusivity in the institution, and promote academic development and motivation to obtain an updated PRODEP profile (SEP, 2014). The economic stimulus of this program consists of nine levels. In order to obtain the levels I to IV, the requirements are the following: have an overall average of at least 2.8 in teaching assessment evaluation; sign an agreement letter of exclusivity with the institution; and have an updated PRODEP profile. For levels V and VI, the required average for the teaching assessment evaluations is at least 3.0, and the same requirements for exclusivity and an updated profile. Regarding levels VII, VIII and IX, the average for teaching assessment evaluations is at least 3.3, the same requirements for exclusivity and an updated profile, and at least seventy-five hours of student tutoring per semester (UACJ, 2015).

Responses to the Higher Education Program

In response to these program requirements, an interesting analysis about the PRODEP profile by Perez and Mariscal (2010) discusses how the rules of operation for PRODEP lacks clarity for each of the activities to be performed by the academic. According to the authors, this clarity could be useful to academics in order to better understand the applications of the policy,

and therefore, identify the reasons behind the actions, perceptions and standards of PRODEP. Perez & Mariscal (2010) analyzed data from a qualitative survey and semi-structured interviews carried out in a public Mexican university, regarding how the informants value the various programs, and if they have improved the quality of their work as professors. The results of the study showed that 26% of academics had PRODEP profiles, 29.7% participated in the economic stimulus program, 15.5% belonged to an academic group, and 34.0% were members of the National System of Researchers. These faculty members have improved their quality as professors, in comparison with academics without a PRODEP profile (14%), not participating in the economic stimulus program (23.9%), and not belonging to an academic group (12.6%). According to the results, the authors suggest that although these programs allow academics to improve their quality as professors, the academic activities are increasingly complex and difficult. These findings on the multiplicity of demanding activities indicate that it is worthwhile to investigate how these variables are affecting professors' health when the academics are under a lot of stress.

In México, many research articles and books have critically analyzed higher education and their policies. For instance, Castro (2011) used a qualitative approach to analyze institutional statements by the Universidad Autónoma de Ciudad Juárez (UACJ) based on official documents that contrasted full-time faculty with and without the desirable PRODEP profile. Castro conducted semi-structured interviews, formed four focus groups with a total of twelve full-time faculty members with PRODEP profiles, and conducted observations using an interpretive approach. Findings showed contradictory perceptions and positions among professors about adopting the National Educational PRODEP policy in terms of acceptance of the general academic improvement objectives through scholarships and recognition on one hand, and on the

other hand, disapproval of the mandatory institutional requirements. It should be noted that in line with these contradictory perceptions, professors are subject to a lot of stress due to the various rigid requirements that PRODEP demands, in spite of the economic benefits that it implies.

In an effort to understand the neoliberal policies of higher education programs in México, and to show the impact of stimulus programs on professors in a public university, Martínez, Méndez and Murata (2011) conducted a study analyzing the association between activities which university academic staff must carry out to meet the requirements of grants and incentive programs, and the consequences of this participation on their academic work, as well as on their physical and mental health. An epidemiological survey was administered to assess variables including: conditions and valuation of work; risks and labor requirements; various consequences of participation in the stimulus program; damage to physical and mental health, such as digestive, psychosomatic, cardio-circulatory, musculoskeletal, and sleep disorders, headaches, migraines, dysphonia, lower back pain, and neuro-visual fatigue. It was an observational, cross-sectional, descriptive and analytical study, involving 199 faculty members, 58% male (115) and 42% female (84), with an average of 54.4 years old. The results show that 95% of the faculty enjoyed their working conditions and felt satisfied as university professors. Regarding the level of labor demands, the academics indicated increased workload (87%), longer workdays (52%), and uncomfortable positions (84%). In relation to health problems, the most common findings were stress (41%), musculoskeletal disorders (38%), and fatigue (38%). Statistically significant relationships were found between participating in the grant and stimulus programs--especially fulfilling the requirements that must be covered to achieve those benefits--and health problems. It was concluded that collective proposals for improvement in labor demands must be made,

while reducing stress and taking measures to improve health could be carried out on an individual basis. The study suggests that it is necessary to conduct further research on this issue, as the results clearly indicate that these problems are widespread among faculty.

An interesting finding is that when university professors deal with the long working hours that their activities demand, it somehow influences their perceptions of health and their stress symptoms. Cladellas and Castelló (2011) conducted a study to analyze time management in terms of the distribution of time spent working, for its influence on psychosocial factors associated with health perceptions and stress symptoms. The study dealt with the concepts of perceived state of health and stress from a psychosocial perspective. The sample for the study was 172 full-time university professors of Catalonia (65% men and 35% women) with a mean age of 44.45 (ranging from 28 to 63 years). The psychosocial factors were measured with the ISTAS21 questionnaire (Spanish version of the Copenhagen Psychosocial Questionnaire). The results of the study showed that professors have a poorer perception of their health and a greater number of stress symptoms if they give classes during the last hours of the working day, and this has a greater impact on females. This study suggests that managing work time must allow professors to balance their work and personal life, and thereby prevent diseases associated with health and stress.

The authors (Cladellas & Antoni Castelló, 2011) stated that education is one profession where working conditions and their repercussions have been historically under-examined. Despite the abundance of studies on the professors' health and work-related stress, results are still quite difficult to integrate, perhaps because many of the studies have focused on concepts such as burnout (Aris, 2009; Marrau, 2004; Vera, Sanóva & Martín, 20010). Other studies have shown that professors' personal resources and emotional variables play an important role in

his/her work-related stress, while connections with age or amount of teaching experience were not found (Extremera, Fernández-Berrocal & Durán, 2003; Friedman, 2003).

Another study (Urquidi & Rodríguez, 2010) illustrates the relationship between health and stress in university professors and their daily work hours. The study involved professors from three public higher education institutions located in the Northwest region of México with the purpose of exploring the stress levels that Mexican professors experience as an outcome of their academic labor. The sample included 70% men and 29.9% women, with a mean age of 46.9, and nearly half of the faculty had experience from 1 to 12 years. The workload average was 12.9 hours per week, and more than 35% of the faculty conducted research, 26.9% with financial aid, and 8.1% belonging to the National System of Researchers. Data were retrieved through a questionnaire that was constructed from a content analysis of semi-structured interviews.

According to the results, the most stressful situations are related to the merit pay programs operated in México since 1990, specifically workload and time constraints to meet the academic tasks (30%) and the multiplicity of tasks (24%). Although stimulus programs have contributed significantly to increase wages, they have promoted several negative consequences that professors describe themselves as hassles, stress, bureaucratization and simulation, in order to achieve scores required for the stimuli competitions (see Arbesú, Gutiérrez and Piña, 2008). Despite two decades of operating stimulus programs, it appears that Mexican academics have not adapted to their demands, which inevitably leads to the experience of stress at different levels.

Considering that work-related well-being has been shown to be influenced by job characteristics and differences in coping styles, Mark and Smith (2012) investigated the relationship between job demands, control, social support, effort rewards, coping styles and attribution styles for the prediction of anxiety, depression, and job satisfaction. The sample was

composed of 307 university employees from the United Kingdom compared with a sample of 120 members of the general population. According to the authors, in the last 10 years, interest in research on academics and university employees has been growing with significant contributions made by Kinman (2001, 2008), Winefield (2003) and others. Abouserie (1996, as cited in Mark & Smith, 2012) states that academics have a large number of competing roles, such as teaching, research, seeking funding, writing papers, and meeting seminar and tutorial commitments, and found that 74% of staff were moderately stressed and nearly 15% were seriously stressed with lecturers the most negatively affected, followed by research assistants and professors. Also, Fisher (1994, as cited in Mark & Smith, 2012) claimed that academic salaries are falling and workload increasing, while Gilliespie et al. (2001, as cited in Mark & Smith, 2012) identified characteristics of academic work, such as work overload, time pressure, lack of prospects, poor levels of reward and recognition, poor management, poor resources and funding, among others.

Mark & Smith (2012), found that workplace demands, intrinsic and extrinsic effort, and negative coping and attributional behavior were associated with levels of depression and anxiety and low job satisfaction. Regarding rewards, social support, job control, and positive coping and attributional behaviors were associated with lower levels of depression and anxiety, and high job satisfaction. The authors suggest that according to the results given, a transactional approach should be adopted, and that instead of changing job characteristics, individuals' risk should be identified to help them adopt positive coping styles.

Background on the Concept of Stress

Stress

Stress is a concept with a variety of potential definitions. Selye (1936) introduced the concept as a specific syndrome consisting of nonspecific changes in the body induced by the demands made upon it, thereby generating a range of emotions. Lazarus and Folkman (1984) defined stress as a particular relationship between the individual and his environment. From the relation between internal and external conditions, stress emerges as an individual characteristic. Hence, each individual responds differently to the same stimulus. Taboada, Ezpeleta and De la Osa (1998) explained that according to individual history, experiences, and characteristics, individuals tend to interpret and use different coping styles for each situation.

The majority of research on this topic began in the 1900s. At the beginning of the 20th century, physiologist Walter Canon conducted research that explored the relationship between emotions and individual physiological responses (Richmond, 2007). Cannon expanded on the 19th century work of Claude Bernard and coined the term *homeostasis* in reference to the efforts of one's body to maintain a steady state of physiological equilibrium (Selye, 1956). Furthermore, Canon's research produced the well-known concept, *fight or flight response* (Richmond, 2007). The fight or flight response stems from the sympathetic nervous system's reaction to perceived threats on the body. The sympathetic nervous system may undergo physiological changes that prepare an individual to either battle a perceived threat or remove oneself from apparent danger. Specific body responses may include the discharge of adrenaline, release of glucose, utilization of body fat, accelerated heart rate, elevated blood pressure, increased perspiration, and enhanced blood flow to large muscles that leads to a feeling of coldness in the extremities. Cannon's response-based approach to stress laid the foundation for future research, including the

work of Hans Selye, a renowned endocrinologist and the father of stress (Jex, 1998). Selye proposed that stress may be either positive or negative. Eustress is positive stress, which may improve health and performance; the distinction between positive and negative stress is valuable, as it opened up theoretical possibilities for how stress may be perceived. In the 1950s, Selye's study of negative stress expanded the response-based approach, with the development of the concept of General Adaptation Syndrome (GAS) (Richmond, 2007). In regard to GAS, stress was viewed as a universal physical response of the body to any demand placed on it (Selye, 1956). If one experienced distress, it was expected the body would go through a prescribed series of adaptations to mitigate the stress.

Specifically, GAS includes three stages: alarm reaction, resistance, and exhaustion (Selye, 1956). The alarm reaction stage includes the psychophysical reaction of the body known as Cannon's previously identified fight or flight response. When a perceived threat is identified, there is a point in time when the affected individual must decide whether to confront the threat or flee from danger. In any threatening situation the fight or flight response may be activated. For example, the professor who fails to meet the rigid requirements of the PRODEP profile may make a choice between continuing with a lot of stress or fleeing from participation.

The resistance stage is evident through activation of the adrenal cortex and pituitary gland, as well as simultaneous release of adrenaline (Selye, 1956). Tobon, Nuñez and Estefano (2004) stated that stress implies a perturbation, alteration or interference in habitual individual functioning. As stated by Sandin (1999, as cited in Tobon, et al., 2004), this alteration is generated by some type of stimulation (internal or external) called *stressors*. Thus, stress is a physiological and emotional activation framed by the relationship between person-environment. In this regard, the university professor with an increasing workload who spends more time on

research, publishing and professional development is more likely to perceive the situation as threatening. His or her heart rate may increase, blood pressure may rise, and the individual may experience discomfort as result of the confrontation with the situation; or, if the professor attempts to resolve the issue by discussing it with other colleagues, he or she may feel adrenaline pumping and begin to experience a heightened sense of awareness. Heart rate, blood pressure, and perspiration may also increase, as a result of stimulation of the sympathetic nervous system. During the exhaustion phase, the perceived threat may dissipate and bodily functions may return to a homeostatic state (Selye, 1956). In the case of the university professor, if he/she is able to effectively resolve the previously identified situation about why he/she couldn't meet the rigid requirements, bodily functions are likely to return to the same level as before the confrontation; or, if the perceived threats do not dissipate, the professor may experience a suppressed immune system that leads to illness or exhaustion.

As opposed to Selye's response-based approach, Lazarus (1996) developed a stimulus-based approach. According to Lazarus' transactional theory, stress is identified as an interaction between an individual and the environment, and the perception of the involved individual determines whether a situation is deemed stressful. Stress is the consequence of an individual's appraisal of the situation and includes primary appraisal and secondary appraisal. The first one requires initial judgment of whether or not a situation is stressful for a particular individual (Lazarus, 1966). Lazarus argues that no single measure may be used to determine whether a situation is stressful. The subject engaged in the experience is the only one that may evaluate whether or not a situation is stressful, and this involves cognitive processes that consider the on-going interaction between the individual and the environment. For example, the transactional theory takes into account how emotion and motivation may impact stress, and the response-based

approach just refers to specific body responses. When a situation has been identified as stressful, the individual engages in secondary appraisal, and determines the extent to which the situation is stressful. The secondary appraisal may be affected by personality factors and the availability of coping resources. If an individual has sufficient capacities and resources to address the situation effectively, the perceived threat may be deemed significant.

The conceptualization of stress ranges from highly specific to extremely general. The difficulty in conducting stress research is that it can be operationalized in many ways. For instance, the concept of stress has variously been defined as both an independent and dependent variable, and as a process. Consequently there are numerous models and theories on stress; however, these theories are composed of the same general elements. Theories on occupational stress focus on a range of different stressors, and in an effort to address the ambiguity of occupational stress research, several theoretical models have been developed, and are explained next.

Theoretical stress models

Karasek Job Demand-Control Model

As previously stated, there are a range of potential definitions of stress, making it difficult to generate a universally accepted definition. As a result, the following models of occupational stress were examined. One of the most well-known occupational stress models is the Karasek Job Demand Control Model (Karasek, 1979; Johnson, Hall & Theorell, 1988). The model states that three job characteristics (stressors) are crucial in explaining adverse health: high demands, low control, and low social support. A situation in which work pressures are high, and control and support are low is hypothesized to be most detrimental for the employee. The author explains that the most stressful workplace experiences are those in which the employee has

limited job decision latitude. This is determined by the interaction between job demands and job control, which means that situations with high job demand and limited control foster the most stressful workplace experiences, resulting in strain that may negatively affect work performance. For instance, the professor who is charged with more than three classes, conducting research, and tutoring, would be considered to have a high job demand, and the professor may perceive this amount of activities as exceeding his/her working hours. The professor may feel little control over his/her ability to exert the necessary physical and mental health resources to address the amount of activities. As a result, the professor may experience anxiety and hopelessness that negatively impacts work performance and health.

Person-Environment (P-E) Fit Model

A category of other occupational stress models are the Person-Environment (PE). This model is rooted in the work of social psychologist Kurt Lewin (Jex, 1998). In this model, the source of stress is defined as a misfit between a person and his environment, such misfit of the individual's needs with the organization's or job's provision of rewards and supplies, or a misfit of the individual's skills and abilities with the job's demands and requirements (Harrison, 1985). The model reflects the extent to which the person fits the situation, and defines a stressor as a combined effect of personal and environmental variables, which consists of an objective fit, element, and a subjective fit element. The objective fit element contains objective person elements which are attributes of the person as they exist irrespective of his or her self-identity or self-concept, and analogously objective environment elements (Harrison, 1978). These elements can be categorized on the "stressor" side of Beehr's core relationship of occupational stress (Beehr, 1995). An imbalance may occur when the employee's skills, abilities, or values do

not match the environmental demands or resources. Where there is not a good fit between the person and the environment, unmet needs may lead to strain that affect work performance. For example, a professor who has been working for more than 15 years under the traditional model, and is obliged to take the certification courses in order to get the PRODEP profile, and given the fact that the professor has no experience with new technologies, or time to take the required courses, there would be a misfit between the professor and the situation. If the professor perceives the demands to be excessive and unmet, and needs regarding training and knowledge are unmet, stress may affect the professor's performance. The discrepancy between the excessive institutional requirements and the professor's training and knowledge may lead to on-going stress that impacts the professor's work performance.

ISR Model

The Institute for Social Research (ISR) Model is one of the earliest occupational models. It came out of the program of research at the University of Michigan's Institute for Social Research (French & Kahn, 1962; Katz & Kahn, 1978). The ISR model includes six components: the objective environment, the psychological environment, mental and physical health and disease, enduring properties of the person, and interpersonal relations. The objective environment includes anything in an employee's work environment: the number of worked hours, the amount of responsibility, the extent to which interaction with others is required, and so on. The psychological environment signifies that method by which the professor appraises the objective environment. For example, the professor may appraise the objective environment through the paradigm of how it impacts their ability to fulfill their job responsibilities. If the professor works best with few distractions, and needs close-knit relationships, those could be an integral part of his/her job responsibilities essential for organizational stability. Once the

environment is appraised, the model proposes that the result may be immediate physiological, behavioral, and emotional responses on the part of the professor. The physiological responses are changes evoked by stressful stimuli that include increases in heart rate, elevated blood pressure, and increased respiration rate (Fried et al., 1984). Immediate behavior responses may include decreased effort, or inability to concentrate (Jex, 1988), and emotional reactions to their appraisal of the objective environment. Emotional responses may include increases in both anxiety and depressive symptoms, and a decrease in job satisfaction (Heinisch & Jex, 1977; Spector et al., 1988). The enduring properties of the person (genetic, demographic, personality) and interpersonal relations are the final two components of the ISR model. This is because employees may have different genetics, personalities, demographics and interpersonal relations that could affect how they perceive situations in their work environment and response to stress. Although the ISR model includes interaction of the six components that affect how employees deal with occupational stress, the model does not explain the efforts that employees can produce to cope with stressors.

Cybernetic model

The cybernetic model was developed by Cummings and Cooper (1998). This model is the on-going influence of available feedback on behavior. It is based on the idea that systems, in this case professors, seek to maintain an equilibrium state, and will act to re-establish equilibrium when some external force disturbs it. As it relates to occupational stress, the cybernetic model includes an employee's use of information and feedback to adjust responses to stressful situations. For example, a professor may perceive a wide gap between desired and current reality about work, which would induce stress, while another professor may perceive a narrow or even no gap. In the second example, this may represent eustress, but for the first, distress. The interaction between the person and the environment, as similarly noted in the P-E Fit model, is

essential to the cybernetic model. The premises are that an employee adjusts behavior to cope with factors that disrupt physical or psychological equilibrium within the work environment. The cybernetic model has four stages: detection of stress, selection of adjustment processes, implementation of adjustment processes, and the effects of adjustment processes on stress over time. For example, in UACJ at the beginning of each year, professors who want to participate in the economic stimulus program must fill out an electronic index in order to be evaluated on his/her performance. Because of this, they may be concerned with the loss of a planning period in their classes due to this stressful situation. Through the selection and implementation of adjustment processes, the professor may choose to do class planning after the work day, but this class planning may take away from the professor's personal and family time.

Procedural Stress Model

The final model to be explored is the Procedural Stress Model (PSM) proposed by Lazarus and Folkman (1984) and formulated by Sandin (1995, 1999). The model assumes that stress is an imbalance between the environmental demands and the individual's coping style. Lazarus and Folkman (1984), and Sandin (1999, as cited in Tobon, Nunez & Vinnacia, 2004) stated that coping is understood as all cognitive and behavioral strengths that individuals use to face their emotional or stressful discomforts. The axis of this model is the coping concept, and it is understood as the set of cognitive or behavioral efforts leading people to cope with emotional distress or stressful demands (Lazarus and Folkman, 1985; Sandin, 2003). Therefore, depending on the way an individual drives a situation or responds to stress, there may or may not be a probability of illness, at both the mental and physical level. Coping is adaptive when given the characteristics of a situation and taking into account personal resources, the individual is able to significantly avoid or reduce the degree of threat, negative emotional distress and physical stress.

Coping varies among people and according to their personal dispositions, situations and available resources. Resources are elements which potentially include people and not the action in itself (Sandin, 2003). Some of the most commonly described coping styles in research related to health are: social support, optimism, perceived control, and positive affect. Social support has been considered a basic resource for coping with stress and is a protective factor for health (Cockerman, 2001). The mechanism that links social support to health is damping, which means that support helps manage stress, resist it and decrease it. The factors involved in the model are: psychosocial demands, cognitive evaluation, stress response and health status (see Figure 1).

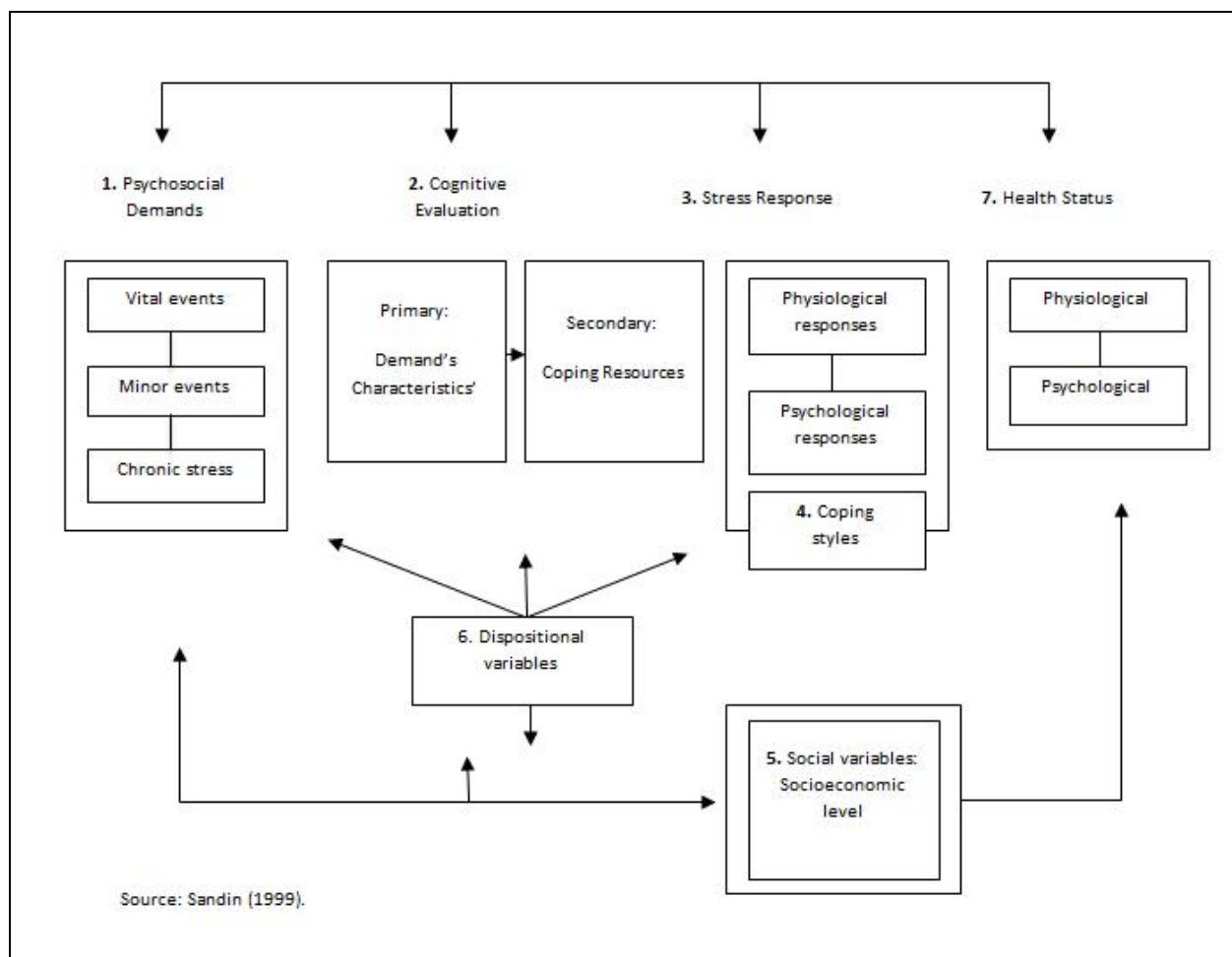


Figure 1: Characteristics of the Procedural Stress Model

Guided by the Procedural Stress Model, the present study considers the psychosocial events, including both vital and minor events, as part of the daily lives of professors. For example, a professor may identify the requirements of PRODEP and the stimulus program (demand characteristics) as external stressors (i.e., hours teaching class, hours tutoring, updated PRODEP profile, levels of stimuli, SNI level, research with/without external funding, level of academic group, articles published per year). Depending on how the professor values the situation (cognitive evaluation), the stress response may occur. Sometimes psychosocial situations may greatly impact individuals, and may have direct effects in triggering the stress response with little mediation of cognitive assessment. Stress responses are physiological and psychological and the professor must be prepared to cope with the stressful demands (via cognitive strength, positive and negative assessment, minimizing the threat and problem concentration) with physiological arousal or emotional distress. For a professor, the income level and social support are of great value to address the situation, as well as personality traits, heredity factors and gender (Tobón, Núñez, & Vinnacia, 2004). Once the professor identifies whether or not current resources are adequate to address the demand, the situation may be reappraised in light of the job demands and the professor's ability to minimize the stress response, and then the body can operate properly.

In sum, it is unlikely that a single model of occupational stress will be universally accepted. Nonetheless, several models have been presented that provide paradigms for studying occupational stress, and therefore research that explores the effects of occupational stress may help university professors. In the present study, stress is defined as an interference with the normal functioning of the individual, which may be understood in biological terms (homeostasis) or psychological terms (routine well-being, perceived emotional state). Such interference is generated by some kind of stimulation (external or internal) called a *stressor* (stimulus, event,

thought, idea, etc.) (Sandín, 1999). The definition is reflected, to some extent, in all the five models of occupational stress previously identified. The definition of stress selected for this study appears most consistent with the PSM model and an alternative paradigm of Selye's GAS model, which were previously explained.

Summary

This chapter included an examination of literature regarding the requirements and strategies of PRODEP, the stimulus program, as well as health and stress concepts and models. This background drives the design of the current study, which is discussed in Chapter 3.

Chapter 3: Methodology

The purpose of this study was to examine the relationship between professors' health and stress symptoms and their relationship with the process of obtaining a permanent position, and the participation in the merit pay program. As stated previously in the research questions and hypothesis of the study are:

1. What is the relationship between physical health and the process of obtaining a permanent position among university professors?
2. What is the relationship between mental health (specifically, stress levels) with the process of obtaining a permanent position among university professors?
3. To what extent professors' mental health (stress levels) and physical health related?
4. What is the relationship between socio-demographic variables with physical health and mental health among university professors?
5. To what extent do relationships between the process of obtaining a permanent position, and physical and mental health differ for men and women?

Hypotheses:

1. There are positive relationship between the process of obtaining a permanent position and physical health problems among university professors.
2. There are positive relationships between the process of obtaining a permanent position and mental health (stress levels among university professors.
3. Socio-demographic variables such age and gender are related to physical and mental health among university professors.
4. The relationship between the process of obtaining a permanent position and physical and mental health differ for men and women.

Research Design

A quantitative, correlational method was chosen because it provided an opportunity to quantify and effectively determine the relationship between professors' health and stress symptoms, and their relationship with the process of obtaining a permanent position. The dependent variables are the professors' health and stress symptoms. The independent variables are the process of obtaining a permanent position and the participation in the merit pay program. Questionnaires were distributed to UACJ professors. More information on the measurement of the variables and the administration of the instruments follow in the sections below.

Population

The population for this study was limited to full-time professors of the Universidad Autónoma de Ciudad Juárez, Chihuahua who have been participating in the merit pay program, have a PRODEP profile (either updated or non-updated), and have two years or more since applying to a permanent position, as of the fall 2014 semester. Participants were identified from a list of UACJ professors obtained by the researcher from the Professional Development Program (PRODEP) director's office. Participants were included from the various colleges of the UACJ: Instituto de Ciencias Sociales y Administración (ICSA), Instituto de Ciencias Biomédicas (ICB), Instituto de Arquitectura Diseño y Arte (IADA), Instituto de Ingeniería y Tecnología (IIT) and Ciudad Universitaria (CU). The study included both female and male full-time professors, in order to compare responses to prominent factors by gender. Out of the 200 faculty who met the study's criteria and were invited to participate, 104 professors submitted properly completed questionnaires accompanied by signed consent forms, yielding a 52% response rate. Each participant was assigned a number to replace their names after their questionnaires were

returned. The assigned numbers were kept confidential, with only the researcher having access to the master list, which was separated from the data.

Procedure and Confidentiality

Three weeks after the start of the fall semester classes, faculty were visited personally by the researcher and invited to participate in the study. Participants were assured that individual responses would remain confidential, and that data would be analyzed and reported at the group level, without identification of any individual. Participants were provided with an informed consent form (see Appendix D). Permission to conduct the study was requested and granted from the “Coordinación General de Investigación y Posgrado” (General Program of Researcher and Graduate Studies; (see Appendix C for letter of request and Appendix D for permission granted). The study was also submitted to the Institutional Review Board (IRB) of the University of Texas at El Paso and received approval (see Appendix B).

Upon providing their informed consent, professors were provided with the questionnaire packet, which included a cover letter explaining the procedures, study purpose, potential risks, and a copy of the informed consent form. The data was stored in a password-protected computer in the researcher’s office that was locked when the researcher was not present. The researcher ensured that confidentiality was maintained throughout the study. In order to minimize researcher bias, the surveys were handed in an envelope, and asked professors to seal the envelope when they filled up the surveys. Also, the surveys were collected by the research assistant.

Instrumentation

The questionnaire packet began with directions for completing items regarding physical health, mental health, and stress symptoms (the dependent measures). Questions regarding health symptoms asked about the discomforts and ill effects of different categories of health conditions such as: visual, musculoskeletal, dermatological, gastrointestinal, cardiovascular, respiratory, mandibular, and sleep disorders, as well as medication and alcohol use. Responses were indicated using a Likert-type scale, with 5 representing *almost always*, 4 representing *very often*, 3 representing *moderately*, 2 representing *a little*, and 1 *not at all*.

Stress levels were measured using the PEN (Nowack, 1999). The instrument was developed by Nowack (1999) to identify those areas that help an individual to tolerate the harmful effects of every day stress, which can make one vulnerable to related diseases. The PEN provides a comprehensive assessment of key factors shown to regulate the relationship between stress and disease (Nowack, 1999). The measure pertains to health and stress factors experienced in the field of education, and is therefore more appropriate for use in this study than other tools focusing on general occupational stress. The psychometric reliability of the instrument has been reported as 0.89 to 0.91 (split-half reliability) across different cultures and populations with different educational levels (Nowack, 1999). The homogeneity of the scales has been indicated with test-retest reliability (Cronbach's alpha ranging from 0.51 to 0.92) and with factor analysis (showing low to moderate relationships, Eigen values from 0.41 to 0.75; Nowack, 1999), which confirms that constructs represented by these dimensions are independent enough to justify their interpretation separately. The PEN Spanish version (2002) was obtained through purchase, including the manual, application booklet, response form, and scoring form. The permission letter that supports the use of the PEN is included (see Appendix E). The questionnaire is a six

page inventory that consists of 118 items. The items are clustered into seven dimensions: stressful situations (health, work, finances, family, social and natural environment), health habits (exercise, rest-sleep, alimentation- nutrition and prevention of risk), network of social supports, Type A behavior, cognitive strength, coping styles (positive evaluation, minimization of threat and focusing on problem) and psychological well-being. Each item has five responses options: 1 representing *never*, 2 representing *rarely*, 3 representing *sometimes*, 4 representing *often*, and 5 representing *always*. The time for completion fluctuates between 20 and 25 five minutes (Nowack, 1999).

The final part of the survey pertained to the independent variables and several demographic variables. These included: age, gender, number of children, marital status, number of years teaching, number of hours teaching, number of classes teaching, number of students teaching, number of students tutoring, type of initial contract in UACJ, degree level, member of SNI (yes/no) and level, PRODEP profile status (updated or non-updated), research with or without external funding, additional performance activities, membership in an academic group and position, and family and personal health history.

Summary

This chapter included a discussion of the methodology, population, instrumentation, and procedures.

Chapter: 4 Results of the Study

The purpose of the study was to survey UACJ professors, and explore the relationship between their health and stress symptoms and the relationship with the process of obtaining a permanent position and participation in the merit pay program. Professors rated their health status and stress symptoms, and provided demographic information and information pertinent to their academic position. Stress level was measured using the PEN, where professors were asked to rate themselves on fifteen stress-related items from 1 (*never; rarely*) to 5 (*sometimes; often; always*). Professors' health status were measured using a Likert-type scale where professors were asked to rate their health status from 5 (*almost always*) to 1 (*not at all*). Professors' rated their health status and stress symptoms during the fall semester classes August-November, 2014. Thus, the chapter provides the participants' demographic information of the current study and the identified factors that were considered as significant variables in the study.

Participants

The sample was composed of 104 professors (out of 200) from the UACJ. The convenience sample was carried out by non-random method due the researcher looked for participants who were willing and available to participate in the study. The mean age was 48.16 ($SD = 10.01$) years, 51.9% reported being male, 48.1% female, 61.2% married, 25.2% single, 11.7% divorced, 1.9% widowed, and 74% reported having sons and/or daughters. With respect to the university, 51.9% had an updated PROMEP profile, 74% did not have any SNI level, 7.7% had a candidate SNI level, 14.4% had a SNI level 1 and 3.8% had an SNI level 2. In the sample, 22.1% were doing research with external funding, 59.6% were doing research without external funding, 37.5% did not belong to an academic group, 42.3% belonged to an academic group in formation, 25% belonged to an academic group in consolidation, and 32.7% belonged to a consolidated academic group. With respect to academic level, 51% had a master's degree, 42.3% had a doctoral degree, and 6.7% had post-doctoral experience. The mean years working at the university was 14.08 ($SD = 9.39$); the mean number of classes taught was 3.35 ($SD = 0.81$); the mean number of students tutored was 24.26 ($SD = 21.25$); the mean hours taught per week was 14.25 ($SD = 6.53$); the mean hours tutoring per semester was 56.55 ($SD = 28.40$); the mean of level of incentives was 3.51 ($SD = 4.43$); the mean of published articles per year was 1.41 ($SD = 1.16$).

Results

The variables were analyzed with Pearson Correlations and then, for the main analysis, multiple linear regressions (Tabachnick & Fidell, 2013) were performed for each of the following outcome variables: stress, general health, gastrointestinal health, cardiovascular health, respiratory health, skin health, musculoskeletal health, visual health, mandibular health, sleep disorders, medicine use, and physical activity. A general health index was computed by adding the scores of each of the following indexes: gastrointestinal health, cardiovascular health, respiratory health, skin health, musculoskeletal health, visual health, mandibular health, and sleep disorders. The medicine use and physical activity indexes were not taken into account for the general health index since they do not indicate specific health problems as the included indexes.

The individual health indexes were computed by combining two responses: 1) whether the person reports a specific problem; for example: having hypertension, and 2) how much the problem affects the person, from *not at all* to *almost always*. The score for the person who did not report a problem was 0. If the person reported having a problem, then he/she would get a score from 1 (*not affected at all*) to 5 (*affected almost always*) depending on how much the person reported being affected by specific health problem. The scores for each of the problems were added to create a total for the corresponding health index. In each of the health indexes, higher scores mean poorer health; for the stress index, higher scores mean more stress; in the medicine use index, higher scores mean that people report being more affected by medicine use; and in the physical activity index, higher scores mean more physical activity reported by people.

The following permanent position variables were the primary predictors in the linear regression analyses: having an updated PRODEP profile, levels of incentive, SNI level, doing

research with/without external funding, level of academic group and published articles per year. The following socio-demographic variables were included as predictors: age, gender, numbers of sons and daughters, class hours taught per week, and tutoring hours per semester. According to Tabachnick and Fidell (2013), discrete dichotomous variables can be dummy coded with 1s and 0s. For the dichotomous variables, participants were assigned a value of 1 if they had an updated PRODEP profile, and a value of 0 if they did not have an updated PRODEP profile. Participants who were doing research with external funding were coded as 1, and those doing research without external funding were coded as 0. A value of 0 was assigned to participants that reported being female, and a value of 1 was assigned if participants reported being male. For the levels of incentive stimuli, a value of 0 was assigned if they did not participate in the merit pay program, and for those that participated, they were assigned the number of the level they reached, from 1 to 14, where the level of 14 is the highest achieved by participants. For the SNI level variable, a value of 0 was assigned if they did not participate in it, but if participants had an SNI level, then they got a score from 1 to 3, where 3 indicates the highest SNI level reported. For the academic group variable, a value of 0 was assigned if they did not belong to an academic group, but for those who participated in an academic group, they received a score from 1 to 3, where 1 indicates an academic group in formation, 2 indicates an academic group in consolidation, and 3 indicates an academic group consolidated, the highest level of an academic group.

Pearson correlations

Stress and health variables were correlated with the permanent position process and with demographic variables (see Table 1). According to Cohen (1992), in the behavioral sciences a correlation of 0.10 is small, a correlation of 0.30 is medium, and a correlation of 0.50 is large. Stress only had a significant correlation with having research with external funding ($r = 0.32$) thus having this type of research was associated with higher level of stress. The general health index had significant correlations with stress ($r = 0.46$), class hours taught per week ($r = -0.21$), and levels of incentive ($r = 0.23$), such that having higher levels of stress, teaching more hours per week, and having higher levels of stimuli was associated with having poorer health.

It is worth noting that the correlation between general health and having an updated profile had a correlation of 0.19 and an alpha level of 0.06. The analyses were significant at an alpha level of 0.05, but in this correlation the result had an alpha level of 0.06, which was almost significant. If it would have reached the alpha value of 0.05, it could have been interpreted as having an updated profile was associated with having poorer health. The variable of stress had significant correlations with all of the health indexes except for cardiovascular health. The range of these correlations were from $r = 0.23$ to $r = 0.46$.

Correlations were analyzed separately for each of the health indexes. There were indexes that did not have any significant correlations with other variables: respiratory health, skin health, and mandibular health. Two of the health indexes had the most significant correlations. Sleep disorders and physical activity, had the most correlations with other variables, (3 significant correlations each). The strongest correlation that was not related to stress was between physical activity and having research without funding ($r = 0.37$), thus participants who reported having research without funding were associated with doing more physical activity. From the 155 correlations in Table 1, only 26 were statically significant.

Person correlations by gender

Correlations were also analyzed separately for women and men. In the group of women, of the 155 correlations, only 14 were statistically significant (see, Table 2). Most of the significant correlations were between stress and the health indexes. Stress correlated with all of the health indexes except for cardiovascular health, respiratory health, and medicine use. These significant correlations ranged from $r = 0.28$ to $r = 0.39$. Stress also had statistically significant correlations with SNI level ($r = 0.28$), having research with external funding ($r = 0.46$), and published articles per year ($r = 0.29$), such that having a higher SNI level, having research with external funding and having more articles published per year was associated with having higher levels of stress. Nine of the health indexes did not correlate with any of the permanent position process and socio-demographic variables. The variable of cardiovascular health was the health index that had the most significant correlations with other variables, which were level of academic group ($r = -0.31$) and published articles per year ($r = -0.30$); in other words, those with a higher academic level and with more published articles per year were associated with better

health. The correlation between general health and having an updated profile was not significant ($r = 0.21, p = 0.16$).

In the group of men, of the 155 correlations, 21 were statistically significant (see Table 3). Stress has statistically significant correlations with all of the health indexes except for the variable of cardiovascular health. Significant correlations ranged from $r = 0.33$ to $r = 0.53$. The variable of stress did not correlate with any of the permanent position process and socio-demographic variables. Three of the health indexes (gastrointestinal health, respiratory health, and mandibular health) did not correlate with any of the permanent position process and socio-demographic variables. The variables of cardiovascular health, skin health, and visual health were the health indexes with the most correlations with other variables (2 significant correlations each). The correlation between general health and having an updated profile was not significant ($r = 0.19, p = 0.18$).

Multiple linear regressions

Separate multiple linear regressions were performed for each of the twelve outcome variables: stress, general health, gastrointestinal health, cardiovascular health, respiratory health, skin health, musculoskeletal health, visual health, mandibular health, sleep disorders, medicine use, and physical activity. The predictors in each analysis were the permanent position and socio-demographic variables: having an updated PRODEP profile, levels of stimuli, SNI level, doing research with/without external funding, level of academic group, published articles per year, age, gender, numbers of sons and daughters, class hours taught per week, and tutoring hours per semester. From the 12 multiple linear regressions, five outcomes were statistically significant

(see Table 4): stress ($R^2 = 0.23$), general health ($R^2 = 0.21$), gastrointestinal health ($R^2 = 0.27$), medicine use ($R^2 = 0.24$), and physical activity ($R^2 = 0.27$). The R^2 value indicates the proportion of variability in the dependent variable that is explained by the predictors. For example, $R^2 = 0.27$, means that the predictors in the model explain 27% of the variability of gastrointestinal health.

In the multiple linear regressions with stress as the outcome, only the variable of having research with external funding was a significant predictor of stress ($\beta = 0.34$), such that higher levels of stress was associated with having research with external funding. In the multiple linear regression with general health as the outcome, there was only one significant predictor: class hours taught per week ($\beta = -0.22$); in other words, having more class hours taught per week was associated with better general health. The multiple linear regressions with gastrointestinal health as the outcome had five significant predictors: gender ($\beta = -0.23$, where men had better gastrointestinal health), class hours taught per week ($\beta = -0.20$, having more class hours taught per week was associated with better levels of gastrointestinal health), levels of stimuli ($\beta = 0.32$, having higher levels of stimuli was associated with poorer gastrointestinal health), level of academic group ($\beta = -0.27$, having a higher level of academic group level was associated with better gastrointestinal health), and published articles per year ($\beta = -0.24$, having more articles published per year was associated with better gastrointestinal health). In the linear regression with medicine use as the outcome, there were two significant predictors: tutoring hours per semester ($\beta = 0.20$, having more tutoring hours per semester was associated with feeling more affected with medicine use), and doing research without funding ($\beta = -0.35$, doing research without funding was associated with feeling less affected by medicine use). In the multiple linear regressions with physical activity, the significant predictors were gender ($\beta = 0.27$, men

report more physical activity than women), and doing research without funding ($\beta = 0.35$, doing research without funding was associated with more physical activity).

Multiple linear regressions by gender

Additional multiple linear regressions were also conducted separately for women and men. For women, none of the multiple linear regressions was significant (see Table 5). For men, there were three statistically significant multiple linear regressions (see Table 6): gastrointestinal health ($R^2 = 0.42$), skin health ($R^2 = 0.40$), and physical activity ($R^2 = 0.49$). In this group was found the strongest R^2 values with the highest being 0.49. In the multiple linear regressions on gastrointestinal health, the significant predictors were levels of stimuli ($\beta = 0.55$, having higher levels of stimuli was associated with poorer gastrointestinal health) and published articles per year ($\beta = -0.51$, having more articles published per year was associated with better gastrointestinal health). In the multiple linear regressions on skin health the significant predictors were age ($\beta = 0.44$, having more age was associated with poorer skin health) and tutoring hours per semester ($\beta = -0.35$, having more tutoring hours per semester was associated with better skin health). The multiple linear regression on physical activity had two significant predictors: having an updated PRODEP file ($\beta = 0.44$, having an updated PRODEP profile was associated with more physical activity), and doing research without funding ($\beta = 0.63$, doing research without funding was associated with more physical activity). The next chapter will provide summary of the study as well as conclusions and recommendations.

Chapter 5: Summary, Conclusions and Recommendations

The purpose of the current study was to investigate whether professors' health and stress symptoms are related to the process of obtaining a permanent position including participation in the merit pay program. The research questions that drove this quantitative and correlational study were: What is the relationship between physical health and the process of obtaining a permanent position among university professors? What is the relationship between mental health (specifically, stress levels) and the process of obtaining a permanent position among university professors? To what extent is professors' mental health (stress levels) and physical health related? What is the relationship between socio-demographic variables with physical health and mental health among university professors? To what extent do relationships between the process of obtaining a permanent position and physical and mental health differ for men and women?

The study explored a number of demographic variables and asked participants to indicate their employment history, PRODEP profile, stimulus participation, and individual and family health status. The current study took place in the various institutes of the University of Ciudad Juárez, Chihuahua, México. A quantitative and correlation methodology was used in the present study. The questionnaires were administered by the researcher personally and a total of 104 questionnaires were submitted. The results provided information that determined if health problems and stress symptoms were associated with the process of obtaining a permanent position including the participation in the economic stimulus program. The next section addresses the conclusions and the recommendations of the study.

The Problem Restated

The Mexican Institutions of Higher Education have been adapting to the new requirements that globalized societies pose, and one of the main requirements is to increase productivity (Martinez, 2010). This focus on productivity has reduced the quality of academic work to reproduction (Roman, 2010), and focused the selection of university activities on those that are best rated (Arbesu, Gutierrez & Pina, 2008). In some cases, it has been linked to the presence of health problems among professors who are involved in this process and want to increase their salary (Martinez & Vasquez, 2001). Because Mexican higher education policy offers supplemental payments for productivity, those professors who are participating in the academic stimulus programs have been expanding their workload, and suffering higher rates of health problems than those who are not participating (Martinez & Vasquez, 2001). Therefore, professors' health should be a top priority for the Mexican Institutions of Higher Education. According to Martinez & Vasquez (2001), the professors who are participating in the stimulus programs recognize that those programs have some positive and negative consequences. Concerns regarding the stimulus programs deal with the fast-paced race to achieve the incentives, accompanied by repetitive work, and a significant amount of stress and anxiety that had not been documented previously (Ibarra, 1994). Research that explores the reasons for professors' physical and mental health status, as well as stress symptoms, may help institutional leaders to develop targeted strategies to reduce excessive requirements or negative health conditions derived from the participation in grants and stimulus programs. In an effort to identify factors that may influence professors' negative health consequences, the present study explored the relationship between health and stress symptoms and their relation with the process of obtaining a permanent position including, participation in the economic stimulus programs.

Research Study Summary

While some research has analyzed the association between some activities university professors must carry out to meet the stimulus requirements and the consequences of this participation on their academic work and their physical and mental health (Martinez, Mendez & Murata, 2011), this study differed in its systematic examination of the relationships among health status, stress symptoms, PRODEP requirements and participation in the merit pay program for faculty in the current sample. The data showed that from 155 correlations analyzed between stress/health indexes and demographic/permanent position process variables, only 26 were statically significant. Table 1 (see Appendix G) shows these correlations with *p*-values indicating significant relationships between variables. Even though significant correlations among the variables were expected and found to a certain extent, the results showed small to medium sized correlations. Correlations indicate significant relationships among variables and quantify the degree of the relationships. The stress index was only significantly correlated with having external funding for research, such that doing that type of research was associated with higher levels of stress. The general health index was significantly associated with stress, class hours taught per week, and incentive levels, such that having higher levels of stress, teaching more hours per week and having higher levels of incentives were associated with having poorer health. The highest correlation not related to stress was between physical activity and research without external funding; in other words, participants who reported doing research without funding also reported doing more physical activity.

Regarding the correlations between stress/health variables and permanent position process variables for women, the data showed that of 155 correlations, 14 were statistically significant (see Table 2, Appendix H). Stress was significantly correlated with gastrointestinal,

skin, musculoskeletal, visual and mandibular health, and sleep disorders. Stress also had statistically significant correlations with SNI level, external funding research, and published articles per year, such that these activities were associated with higher levels of stress. Better cardiovascular health was significantly correlated with academic group level and published articles per year. A closer examination of the correlations suggests that for women, stress is associated with specific domains of health. Yet, having a higher level of academic group and publishing an article per year is related to better heart health.

With regard to men, the data suggested that for 155 correlations between stress/health variables and permanent position process variables, 21 were statistically significant (see Table 3, Appendix D). Stress was associated with general health, gastrointestinal, respiratory, skin, musculoskeletal, visual, and mandibular health, and sleep disorders. The results for men indicate that many of the same health domains are associated with stress as they are for women, with some differences.

Multiple linear regressions were conducted to test the influence of socio-demographic/permanent position variables on stress and health outcome variables (see Table 4A, Appendix J). From the 12 multiple linear regressions, five of the outcomes were statistically significant. The predictors in the model explained a significant amount of the variability in the following outcomes: stress, general health, gastrointestinal health, medicine use, and physical activity. Having external funding for research was a significant predictor of stress. Teaching more class hours per week was a significant predictor of general health. Better gastrointestinal health was associated with teaching more classes per week, publishing more articles per year, and having a higher level academic group. On the other hand, having higher levels of incentives was associated with poorer gastrointestinal health. Results indicated that tutoring more hours per

semester was associated with feeling more affected by medicine, and doing research without funding was associated with feeling less affected by medicine and with more physical activity (see Table 4B, Appendix K).

Multiple linear regressions were also conducted separately for each gender group. The data showed that for women, none of the socio-demographic/permanent position variables were significant predictors of stress/health outcome variables (see Table 5A, Appendix L). For men, several significant findings emerged (see Table 5B, Appendix M). Results indicated that having higher levels of stimuli was associated with poorer gastrointestinal health, and having more articles published per year was associated with better gastrointestinal health. Older age was associated with poorer skin health, and tutoring more hours per semester was associated with better skin health. Having an updated PRODEP profile and doing research without funding were associated with more physical activity.

Limitations

The study was limited to full-time professors at UACJ with a PRODEP profile (updated or not updated), who have participated in the economic stimulus program for more than two years, and who participated voluntarily. Due to the geographic location of UACJ, the limitations of the survey instruments, and the level of professors included in the study, the results may not be used to make generalizations to other populations of professors in other educational structures, because it is unknown if professors from other Higher Educational Institutions are affected in their health and stress the same way as UACJ participants are. Although some potential participants did not return the questionnaire, the sample of 104 participants and their responses indicated that health/stress symptoms and permanent position variables are associated to a certain extent. A factor that may have influenced the response rate was that the instruments

were distributed during the month of August within the first few weeks of the semester when professors were starting their academic activities.

Conclusions

This quantitative and correlational study was intended to investigate the relationship between health and stress symptoms among university professors with the process of obtaining a permanent position, including participation in the economic stimulus program. The results of the study suggested that professors are experiencing health problems and stress symptoms in relation to the permanent position process.

According to the results, significant correlations were found between physical health, mental health (stress), socio-demographic variables, as well differences in men and women. Stress was associated with external funding for research, and published articles per year, specifically for women. Moreover, for women, stress was associated with multiple health variables. For men, lower levels of stress may be due to some medicine use or physical activity. The study also showed the association between research with/without funding and cardiovascular, and visual health and sleep disorders. It is possible that this association of economic factors and physical health could be a consequence of the economic stimulus program.

The association between general health and the hours teaching class per week--the core of a faculty position--could be a risk factor, as it is also associated with sleep disorders among women and musculoskeletal health among men. This could be a result of planning classes, which involves a lot of thoughts and concerns, creating physical stress and illnesses. Therefore, mental health in relation to the workload for professors is important to take into account. Regarding economic factors, sleep disorders were associated with the level of economic stimulus for the

entire sample and particularly among women which may suggest that variables affecting mental health in professors could subsequently have an impact on their physical health. If professors are under a lot of stress due to economic incentives, their physical health can be affected collaterally. This association was found in previous research (Cladellas & Castelló, 2011).

Recommendations for future research

There are several recommendations for further research:

1. Further investigation could expand the scope of this study including more professors to describe and analyze the relationship with the process of permanence, health, and stress problems.
2. It is suggested that future research survey other higher educational institutions and compare the findings with the results of this study.
3. A study could be conducted using a random sample of professors throughout the Mexico, so the results may be generalized to professors throughout the country.
4. Conduct a follow-up study to determine if professors continue to be affected in their physical and mental health due to the requirements of the permanent position process and merit pay program.
5. Researchers may also perform a qualitative study to determine how professors perceive the requirements of the permanency process and how this affects their physical and mental health.
6. Educational leaders should develop health prevention programs for professors, as well as strategies on how to cope with stress, designed specifically for women or men.
7. Given the results of this initial study, university administrators should take into account the feasibility of providing conditions to improve professors' well-being, observing the

extent to which health and mental status or stressful situations are consequences of the requirements for their professional practice.

Summary

The purpose of this study was to examine the relationship between health and stress symptoms in university professors at the Universidad Autónoma de Ciudad Juárez and their relation to the process of obtaining a permanent position, including participation in the economic stimulus program. The data revealed statistically significant relationships between stress/health indexes and demographic/permanent position process variables. The results are consistent with some previous research on stress and health outcomes among Mexican faculty and their participation in stimulus programs (i.e., Urquidi & Rodríguez, 2010; Martínez, & Vásquez, 2001). Data from the present study may provide the Institutions of Higher Education with knowledge on how to select appropriate strategies for addressing professors' health and stress problems, relative to the requirements of the permanent position process and participation in the merit pay program.

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Appendix A

Voucher Letter to Use an Existing Questionnaire

LIBRERÍA HOLLMAR

PRIVADA DELA RAZA No.3 * COL. MASCAREÑAS * TEL. 613 1953 * CEL. 656-301-2401 * CD. JUAREZ CHIH.

FECHA 21 - Junio - 14

NOMBRE Irene A. Canillo Saucedo RFC _____

DOMICILIO FISCAL _____

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TEL. OFNA _____ CASA _____ CEL. 656-264-1250

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CANT	DESCRIPCION DE LIBROS	PRECIO
12	<u>Hojas perfil Nowack pag. 15</u> HOLLMAR LIBRERIA Especialistas en Libros de Ciencias de la Salud Priv. de la Raza #3 Col. Mascareñas C.P.32640 Tel.613-1953 • Cel (656)301-2401 Cd. Juárez, Chih.	\$ <u>3840.00</u>
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FECHA	IMPORTE	ABONOS	SALDO	NOTAS

DESPUES DE RECIBIDA LA MERCANCIA NO SE ACEPTAN DEVOLUCIONES

NOMBRE Y FIRMA Irene A. Canillo Saucedo

Appendix B



THE UNIVERSITY OF TEXAS AT EL PASO
Office of the Vice President for Research and Sponsored Projects
Institutional Review Board

El Paso, Texas 79968-0587
phone: 915 747-8841 fax: 915 747-5931

FWA No: 00001224

DATE: August 18, 2014

TO: Irene Carrillo, MA

FROM: University of Texas at El Paso IRB

STUDY TITLE: [575841-1] Health and Stress Symptoms in University Professors and their Relationship with the Process of Obtaining a Permanent Position

IRB REFERENCE #: 575841-1

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: August 18, 2014

Thank you for your submission of New Project materials for this research study. University of Texas at El Paso IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulation **[45 CFR 46.101(b)(2)]**:

- Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior

Exempt protocols do not need to be renewed. Please note that it is the Principal Investigator's responsibility to resubmit the proposal for review if there are any modifications made to the originally submitted proposal. This review is required in order to determine if "Exemption" status remains.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact Christina Ramirez at (915) 747-7693 or cramirez22@utep.edu. Please include your study title and reference number in all correspondence with this office.

Appendix C

General Coordination of Research and Postgraduate Approval

Coordinación General de Investigación y Posgrado



UACJ
UNIVERSIDAD
AUTÓNOMA DE
CIUDAD JUÁREZ

Cd. Juárez, Chih. February 25th, 2014.
181/14/CGIP

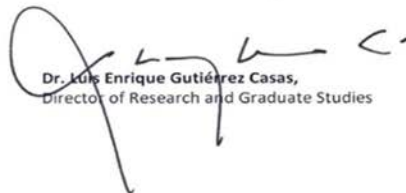
UTEP'S INSTITUTIONAL REVIEW BOARD (IRB)
ORSP ADMIN-209
EL PASO, TX 78868

Dear UTEP IRB:

On behalf of the Universidad Autónoma de Ciudad Juárez (UACJ) I would like to confirm the total support to **Irene C. Carrillo Saucedo**, professor of this institution who is student of Ed. D. Leadership in Administration and Education at The University of Texas at El Paso. The project, *Health and Stress Symptoms in University Professors and their Relation with the Process of Obtaining a Permanent Position* has the institutional support to be done as an extramural research.

Please, do not hesitate to contact me for further references about the institutional interest and commitment to support Irene C. Carrillo.

Sincerely



Dr. Luis Enrique Gutiérrez Casas,
Director of Research and Graduate Studies



Appendix D

Informed Consent

Irene C. Carrillo-Saucedo
376 Vineyard
El Paso TX. 79927
(915) 731-0017
icarrillo@uacj.mx.

Agosto 14, 2014

Estimado Profesor:

Me dirijo a usted atentamente para solicitarle su apoyo en un estudio de investigación en relación con la salud y síntomas de estrés en profesores universitarios. Soy estudiante de la Universidad de Texas en el Paso y actualmente estoy cursando un doctorado en Liderazgo en Administración y Educación. Estoy realizando un estudio de investigación titulado: *Salud y Síntomas de Estrés en Profesores Universitarios y su Relación con el Proceso para la Obtención de una Posición Permanente*. El propósito de la investigación es analizar el estado de salud y los síntomas de estrés en relación con el proceso que implica obtener una posición permanente.

Su participación en el llenado de la encuesta le llevara aproximadamente 35 minutos. La información que usted brinde, será anónima y no existe riesgo alguno porque todas sus respuestas serán confidenciales. El cuestionario pregunta alguna información sensible (Ejem: enfermedades crónicas, uso de estimulantes y alcohol) pero usted es libre de abstenerse a responder cualquier pregunta que le cause malestar. Los datos se codificaran y se protegerán adecuadamente para garantizar su control. La información que usted proporcione se guardara en un archivo seguro, con acceso limitado a la tutora de tesis, y será destruida después de dos años posterior a la finalización del estudio.

Consentimiento

Antes de firmar este documento de consentimiento, reconozco que se me ha explicado lo del estudio. He leído todo el contenido y he hablado con el investigador y mis preguntas han sido contestadas satisfactoriamente. Entiendo que mi participación en el estudio no representa ningún riesgo a mi persona.

Firma del participante

Fecha

PERFIL DE ESTRÉS

Cuadernillo de aplicación



Instrucciones

Este Cuadernillo contiene una serie de preguntas que evalúan diferentes factores que pueden contribuir a su salud física y a su bienestar psicológico. Se le harán preguntas específicas sobre su estilo de vida, hábitos de salud, nivel de estrés, perspectiva de la vida, entorno social y estilo de afrontamiento de los problemas. Esta información se utilizará para desarrollar su perfil confidencial de valoración del estrés.

- **Siga la instrucciones.** Lea de manera cuidadosa cada reactivo y su escala de respuestas correspondiente.
- **Complete.** Por favor conteste todas las preguntas. No deje enunciados en blanco o éstos no se calificarán.
- **Tómese su tiempo.** No existe límite de tiempo para contestar este instrumento. Trabaje de la manera más rápida y cómoda para usted.
- **Seleccione sólo una respuesta.** Escoja y marque con un círculo EN LA FORMA DE RESPUESTA Y CALIFICACIÓN aquella respuesta que le parezca mejor para cada pregunta. Si desea cambiar una respuesta que ya ha marcado, dibuje una X sobre ésta y un círculo sobre su nueva opción.
- **No marque este Cuadernillo.**



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PARTE I

A continuación se le presenta una lista de seis categorías principales de estresores o "problemas" que la gente experimenta en su trabajo y en su vida personal. Los problemas son experiencias y condiciones de la vida cotidiana que se perciben como importantes e irritantes, molestas, hirientes o amenazantes para el bienestar de alguien. Utilice la escala de respuestas para indicar la frecuencia con la que ha experimentado estos problemas durante los últimos 3 meses.



- 1. PROBLEMAS DE SALUD** (p. ej., preocupaciones acerca de su salud, tratamiento médico, apariencia física, consumo de alcohol o tabaco en exceso, limitaciones físicas, síntomas físicos, cambio en la condición médica existente, efectos colaterales de la medicación, etc.).
- 2. PROBLEMAS EN EL TRABAJO** (p. ej., insatisfacción laboral, problemas con el jefe, falta de reconocimiento, preocupación por sobresalir, aburrimiento en el trabajo, explotación, preocupación por la seguridad en el trabajo, relaciones laborales, carga de trabajo, presión de tiempo, sueldo, horario, viajes de trabajo, etc.).
- 3. PROBLEMAS FINANCIEROS** (p. ej., impuestos, inversiones, pago de hipoteca, deudas, inseguridad financiera, préstamos, falta de dinero para viajar, cuentas pendientes, financiamiento para la educación de los hijos, problemas legales, reparaciones de casa y automóvil, planes de jubilación, etc.).
- 4. PROBLEMAS FAMILIARES** (p. ej., problemas de salud de los miembros de la familia, preocupación por parientes, problemas con padres ancianos, líos en las relaciones familiares, dificultades con los hijos, equilibrio entre el trabajo y la familia, cuidado de mascotas, etc.).
- 5. PROBLEMAS SOCIALES** (p. ej., problemas con los vecinos, obligaciones y expectativas sociales, dificultades con amigos, conocer a otras personas, soledad, incapacidad para expresarse, chismes, celos, demasiadas responsabilidades sociales, poco tiempo para descansar, compañía inesperada, tiempo insuficiente para realizar actividades sociales, conflictos interpersonales, etc.).
- 6. PROBLEMAS AMBIENTALES** (p. ej., clima, ruido, contaminación, noticias sobre eventos actuales, delincuencia, prejuicios, política, seguridad ambiental, etc.).

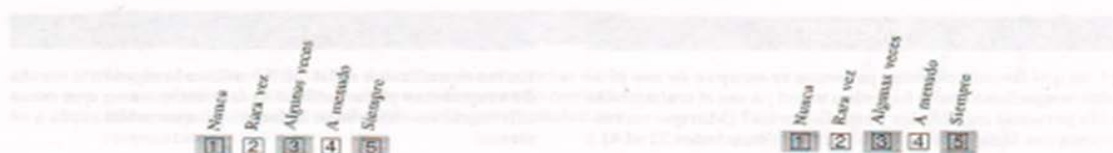
PARTE II

¿Con qué frecuencia estas afirmaciones lo describen en los últimos 3 meses?



7. Invertió algo de su tiempo libre en deportes o actividades físicas, como jardinería, reparaciones en la casa, baile, tenis, golf, softbol, básquetbol, boliche, caminata, raquetbol, etc.
8. Hizo ejercicio durante al menos de 20 a 30 minutos, tres veces a la semana para mejorar su tono muscular, fuerza o flexibilidad (p. ej., estiramiento, fisicoconstructivismo, calistenia, ejercicios isométricos, etc.).
9. Invertió al menos de 20 a 30 minutos para realizar algún tipo de ejercicio físico intenso al menos tres veces por semana (p. ej., aeróbicos, trotar, nadar, caminar a paso vivo, etc.).
10. Se motivó a sí mismo(a) mientras trabajaba o jugaba, aun cuando se sintiera cansado(a), fatigado(a) o exhausto(a).
11. Perdió una noche completa de sueño o gran parte de ésta debido al trabajo o a actividades recreativas.
12. Durmió menos de lo que necesitaba porque se desveló o tuvo que levantarse demasiado temprano.
13. Durmió menos de lo que necesitaba porque tuvo problemas para conciliar el sueño o durmió menos tiempo del usual.
14. Dejó de hacer actividades frecuentes que le resultaban relajadoras y tranquilizantes (p. ej., pasatiempos, leer, ver televisión, escuchar radio, etc.).
15. Mantuvo contacto físico cercano o íntimo con alguien que tenía un padecimiento, infección o enfermedad (p. ej., besos, compartió comida, ocuparon el mismo auto u oficina, usó los mismos cubiertos o el mismo vaso, etc.).

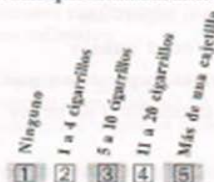
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16. Continuó con su trabajo u otras actividades, aun cuando experimentó el síntoma de alguna enfermedad (p. ej., fiebre, nariz congestionada, estornudos, calosfríos, etc.).
17. No tuvo tiempo para orinar o evacuar de manera regular diariamente.
18. Practicó sexo seguro (p. ej., tomó las precauciones necesarias como limitar el número de sus compañeros sexuales o utilizar condones para minimizar el riesgo de contraer o esparcir enfermedades de transmisión sexual).
19. No pudo tomar las medicinas que le recetó el doctor o los complementos que no necesitan receta (p. ej., vitaminas o minerales), los cuales suele consumir.
20. No pudo mantener sus hábitos de salud preventiva (p. ej., evitó revisiones médicas, descuidó la higiene bucal, no se hizo su autoexamen mensual de mama, ignoró los niveles elevados de colesterol y presión arterial).
21. Ingerió una o dos tabletas de aspirina, no sustitutos como el acetaminofen (p. ej., Tylenol) o ibuprofeno (p. ej., Advil, Nuprin, Mediprin), tres o cuatro veces a la semana.
22. No tomó un desayuno adecuado o nutritivo al principio de cada día.
23. A diario comió una variedad balanceada de alimentos nutritivos de los principales grupos en cada una de sus comidas principales (p. ej., frutas, vegetales, pescado, carnes, pollo, productos lácteos y granos como arroz, pan, cereales).
24. Estuvo al tanto o restringió su consumo diario de grasas saturadas, colesterol, sodio, azúcar y calorías totales.
25. Comió comida rápida o chatarra (p. ej., pastelillos, dulces, papas fritas) en lugar de una comida completa.

26. No tomó una comida importante que usted acostumbra tener durante el día.
27. Tomó medicinas o alimentos a los que es muy sensible o alérgico, lo que le produjo malestar estomacal u otros efectos colaterales negativos (p. ej., mareo, náuseas, jaqueca).
28. Tomó dos o más tazas de bebidas cafeinizadas en 24 horas (p. ej., café, té, cocoa, bebidas sin alcohol) o comió a diario comida con mucha cafeína (p. ej., chocolate).
29. Consumió más de dos copas de alcohol en 24 horas (p. ej., vino, cerveza, whisky, cóctel).
30. Consumió drogas con motivos sociales, recreativos o no médicos.

Utilice la siguiente escala de respuestas para indicar el número de cigarrillos que fuma durante un día.



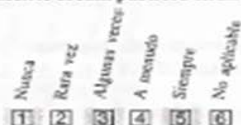
31. Consumo de cigarrillos

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PARTE III

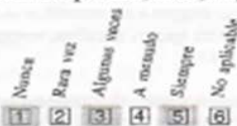
¿Con qué frecuencia estas personas se escapan de sus propias ocupaciones para hacerle a usted ya sea el trabajo o la vida personal más fáciles y satisfactorios? (Marque su respuesta con la siguiente escala para los enunciados 32 al 41.)

A



32. Jefe inmediato o supervisor
 33. Otras personas en el trabajo
 34. Cónyuge, novio(a) o persona significativa
 35. Miembros de la familia o parientes
 36. Amigos

¿Con qué frecuencia se refiere a estas personas para mantener su rutina diaria y laboral de manera eficiente (p. ej., les expresa sus sentimientos, busca su consejo, ellos apoyan sus esfuerzos, le brindan aceptación, amor, empatía, etc.)?



37. Jefe inmediato o supervisor
 38. Otras personas en el trabajo
 39. Cónyuge, novio(a) o persona significativa
 40. Miembros de la familia o parientes
 41. Amigos

Utilice la siguiente escala de respuestas para indicar qué tan satisfecho se siente con el apoyo social que le han proporcionado las personas listadas en los enunciados 42 a 46 cuando usted lo necesita.

B



42. Jefe inmediato o supervisor
 43. Otras personas en el trabajo
 44. Cónyuge, novio(a) o persona significativa
 45. Miembros de la familia o parientes
 46. Amigos

PARTE IV

En los enunciados del 47 al 56 utilice la siguiente escala de respuestas para indicar la frecuencia con que estas afirmaciones describen la forma en que usted actúa o se siente.



47. Me siento apurado(a) y presionado(a) por el tiempo (p. ej., sin el tiempo suficiente para hacer todo en el trabajo o las cosas de la casa).
 48. Mis actividades y mi horario me hacen estar tan activo(a) y ocupado(a) como es posible llevándome al límite de mi energía y capacidad.
 49. Cuando me siento molesto(a), incómodo(a) o enojado(a) ante el trabajo y el estrés, tiendo a expresar lo que siento y lo que pienso a los demás.
 50. Tiendo a ser brusco(a) y competitivo(a) tanto en el trabajo como en el juego.
 51. Cuando estoy formado(a) en una fila, suelo preguntarme por qué los demás son tan incompetentes (p. ej., empleados, cajeros, aquellos que están al principio en la fila, etc.).
 52. Tengo una gran necesidad de superarme y ser el(la) mejor en cualquier cosa en la que participo.
 53. Tiendo a sentirme molesto(a) e impaciente cuando tengo que esperar por cualquier cosa (p. ej., el tráfico, las filas al hacer las compras, el servicio lento, los retrasos en las citas, etc.).
 54. Tiendo a comer, caminar, hablar y hacer la mayoría de las cosas de manera rápida.
 55. Me parece fácil decirle a los demás en el trabajo o en la casa cuando me siento frustrado(a), molesto(a) o enojado(a) con ellos.
 56. Tanto en el trabajo como en la casa tiendo a verificar lo que mis compañeros o familiares hacen para asegurarme de que todo esté bien hecho.

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PARTE V

Los enunciados del 57 al 86 describen las creencias de la gente. ¿Qué tanto está de acuerdo o en desacuerdo con cada afirmación? Utilice la siguiente escala para señalar sus respuestas.

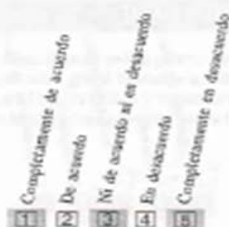
Completamente de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Completamente en desacuerdo
1	2	3	4	5

57. Mi participación en actividades fuera del trabajo y en pasatiempos me hace sentir que tengo un significado y un propósito.
58. Mediante la participación en asuntos políticos y sociales, la gente puede influir sobre la política y eventos mundiales.
59. Siempre puedo apoyarme y auxiliarme de mi familia y amigos cuando todo lo demás se ve sombrío.
60. Prefiero hacer cosas arriesgadas, excitantes y audaces más que apegarme a la misma rutina y estilo de vida cómodos.
61. Ser exitoso es producto del trabajo arduo; la suerte tiene poco o nada que ver.
62. Hay relativamente pocas áreas de mí mismo(a) en las que me siento inseguro(a), demasiado tímido(a) o falto(a) de confianza.
63. En general tiendo a ser un tanto crítico(a), pesimista y cínico(a) acerca de la mayor parte de las cosas en mi trabajo y en mi vida.
64. En mis circunstancias actuales, se necesitaría muy poco para hacerme dejar la institución o empresa en la que trabajo.
65. No me siento satisfecho(a) con mi actual participación en las actividades cotidianas y el bienestar de mi familia y amigos.
66. En general, preferiría tener las cosas bien planeadas por anticipado más que enfrentarme a lo desconocido.
67. La mayor parte de la vida se desperdicia en actividades sin sentido.

Completamente de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Completamente en desacuerdo
1	2	3	4	5

68. Suelo sentirme inquieto(a), incómodo(a) o inseguro(a) cuando interactúo socialmente con otros.
69. Rara vez digo o pienso que no soy lo bastante bueno(a) o capaz para lograr algo.
70. Me siento comprometido(a) con mi empleo y las actividades laborales que estoy realizando en la actualidad.
71. Tiendo a ver la mayoría de los cambios, desilusiones y retrasos en la vida y el trabajo como amenazantes, dañinos o estresantes, más que como un reto.
72. Suelo explorar rutas nuevas y diferentes a los lugares a los que me traslado con frecuencia sólo por variar (p. ej., al trabajo o a la casa).
73. Los demás actuarán de acuerdo con sus propios intereses sin importar lo que yo intente decir o hacer para influirlos.
74. Sé que puedo tener éxito en casi cualquier cosa si tengo la oportunidad de ver cómo otros hacen las cosas o me enseñan cómo hacerlo.
75. Supongo que algunas cosas pueden salir mal de vez en cuando, pero no tengo ninguna duda de que soy capaz de afrontar de manera eficaz casi cualquier cosa que se me presente.
76. La mayoría de las cosas en las que participo (p. ej., trabajo, comunidad, relaciones) no constituyen un reto ni son muy estimulantes ni recompensantes.
77. Es probable que me sienta frustrado(a) y molesto(a) si mis planes no resultan exactamente como yo esperaba o si las cosas no se pueden hacer de la forma que yo deseaba.
78. Existe una relación directa entre cuánto trabajo y el éxito y el respeto que tendré.

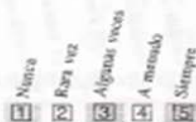
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79. No siento que en los últimos tiempos haya logrado mucho que en realidad sea importante o significativo con respecto a mis objetivos de vida y al futuro.
80. Suelo pensar que soy inadecuado(a), incompetente o menos importante que otros que conozco y con quienes trabajo.
81. Muchas veces siento que tengo poco control e influencia sobre las cosas que me pasan.
82. Si algo cambiara o saliera mal en mi vida en este momento, siento que no sería capaz de afrontarlo con eficiencia.
83. Cuando hay algún cambio en el trabajo o en la casa, suelo pensar que va a suceder lo peor.
84. Las cosas en el trabajo y en la casa son bastante predecibles hasta el momento y cualquier cambio sería demasiado difícil de manejar.
85. En realidad no puedes confiar en demasiadas personas porque la mayoría de ellas está buscando cómo mejorar su bienestar y su felicidad a costa tuya.
86. La mayoría de las cosas significativas proviene de definiciones internas, más que externas, de éxito, logro y satisfacción.

PARTE VI

Aunque cada problema o estresor que experimentamos puede manejarse de manera diferente, la mayoría de nosotros emplea formas características para afrontarlos cada día. Los enunciados del 87 al 106 describen maneras comunes de afrontar los estresores, las incomodidades, las molestias y los retos que se nos presentan. Utilice la siguiente escala de respuestas para indicar la frecuencia con la que usted tiende a recurrir a cada una de estas técnicas y aproximaciones para manejar su vida personal y laboral.



87. Concentro mis pensamientos en los aspectos más positivos del evento o situación (p. ej., lo que puedo aprender del evento o situación o las consecuencias positivas que puede tener).
88. Pienso en momentos, eventos y experiencias felices cuando enfrento problemas y frustraciones.
89. Imagino que las cosas mejoran y me siento confiado(a) de que puedo manejarlas.
90. Me concentro en lo que me molesta hasta que me siento más seguro(a) y cómodo(a) acerca del problema.
91. Digo y pienso en cosas positivas para mí que me hacen sentir mejor en cuanto a la situación o evento estresante (p. ej., "todo va a salir bien").
92. Me culpo, me critico y "me pongo por los suelos" por crearme o causarme de alguna manera mi problema.
93. Me dedico a pensar sobre lo que debí o no haber hecho en una situación particular.
94. Pienso y me concentro en lo peor que pudo suceder en una situación determinada.
95. Saco el tema y lo hablo con otros de manera excesiva ("machacando sobre lo mismo").
96. Pienso en el problema constantemente, de día y de noche (no soy capaz de "abandonarlo" y dejar de ahondar en lo que me molesta).

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Nunca
1
Rara vez
2
Algunas veces
3
A menudo
4
Siempre
5

97. Minimizo la importancia de lo que me molesta burlándome o bromeando sobre ello (es decir, uso el humor para poner el evento o la situación en perspectiva).
98. Evito pensar en ello cuando me viene a la mente (es decir, soy capaz de olvidarme y dejar de ahondar en lo que me molesta).
99. Me impulso a seguir adelante con mi vida y a canalizar mi energía en cosas más productivas para minimizar mi frustración e insatisfacción.
100. Me digo cosas como "deja de pensar en eso" o "no es momento para pensar en eso", cuando me siento frustrado(a), irritado(a) o molesto(a).
101. Lo veo como algo que ya sucedió y que se terminó (o sea, "lo que pasó, pasó").
102. Hablo con otros y les pido su opinión, un consejo, recomendaciones, ideas o sugerencias.
103. Les pido a otros que cambien o modifiquen su conducta de modo que las cosas mejoren para mí.
104. Desarrollo un plan de acción y lo llevo a cabo para afrontar de manera más eficaz la situación en el futuro.
105. Cambio la situación o modifico mi conducta para minimizar o aliviar mi frustración o insatisfacción.
106. Recuerdo mis experiencias pasadas y me imagino la manera más conveniente de resolver el problema o mejorar la situación de forma productiva y eficaz.

PARTE VII

A continuación se presenta una lista de sentimientos y actitudes comunes que la gente experimenta. Utilice la escala de respuestas para indicar la frecuencia con la que ha experimentado o sentido cada una de ellas durante los últimos 3 meses.

Nunca
1
Rara vez
2
Algunas veces
3
A menudo
4
Siempre
5

107. Sentirse feliz y satisfecho(a) con su vida social.
108. Sentirse estimulado(a) y motivado(a) por su trabajo y su vida.
109. Sentirse capaz de relajarse y experimentar bienestar fácilmente.
110. Sentirse mental y físicamente calmado(a), relajado(a) y libre de tensión.
111. Despertarse anticipando un día interesante y emocionante.
112. Sentirse amado(a), querido(a) y apoyado(a) sinceramente por las personas cercanas a usted.
113. Disfrutar de manera genuina las cosas en las que participa.
114. Sentir que su futuro es esperanzador y promisorio.
115. Sentirse confiado(a), optimista y seguro(a) de sí mismo(a).
116. Sentirse a gusto con su vida.
117. Sentirse comprometido(a) con sus actividades cotidianas y sus relaciones actuales.
118. Sentirse satisfecho(a) con sus logros personales y profesionales.

PARTE VIII

En los enunciados 119 a 123 marque con una V para "Verdadero" o una F para "Falso".

Verdadero
Falso
[V] [F]

119. Nunca en mi vida he estado enfermo(a) ni un día.
120. He estado deprimido(a) al menos una vez en mi vida.
121. Nunca he dicho algo malo acerca de otra persona.
122. Nunca en mi vida he mentado.
123. Siempre he tenido malos pensamientos sobre otras personas.

1. The first part of the document is a list of the names of the persons who have been named in the document.

2. The second part of the document is a list of the names of the persons who have been named in the document.

3. The third part of the document is a list of the names of the persons who have been named in the document.

4. The fourth part of the document is a list of the names of the persons who have been named in the document.

5. The fifth part of the document is a list of the names of the persons who have been named in the document.

6. The sixth part of the document is a list of the names of the persons who have been named in the document.

7. The seventh part of the document is a list of the names of the persons who have been named in the document.

8. The eighth part of the document is a list of the names of the persons who have been named in the document.

9. The ninth part of the document is a list of the names of the persons who have been named in the document.

10. The tenth part of the document is a list of the names of the persons who have been named in the document.

11. The eleventh part of the document is a list of the names of the persons who have been named in the document.

12. The twelfth part of the document is a list of the names of the persons who have been named in the document.

13. The thirteenth part of the document is a list of the names of the persons who have been named in the document.

14. The fourteenth part of the document is a list of the names of the persons who have been named in the document.

15. The fifteenth part of the document is a list of the names of the persons who have been named in the document.

16. The sixteenth part of the document is a list of the names of the persons who have been named in the document.

17. The seventeenth part of the document is a list of the names of the persons who have been named in the document.

18. The eighteenth part of the document is a list of the names of the persons who have been named in the document.

19. The nineteenth part of the document is a list of the names of the persons who have been named in the document.

20. The twentieth part of the document is a list of the names of the persons who have been named in the document.

21. The twenty-first part of the document is a list of the names of the persons who have been named in the document.

22. The twenty-second part of the document is a list of the names of the persons who have been named in the document.

23. The twenty-third part of the document is a list of the names of the persons who have been named in the document.

24. The twenty-fourth part of the document is a list of the names of the persons who have been named in the document.

25. The twenty-fifth part of the document is a list of the names of the persons who have been named in the document.

26. The twenty-sixth part of the document is a list of the names of the persons who have been named in the document.

27. The twenty-seventh part of the document is a list of the names of the persons who have been named in the document.

28. The twenty-eighth part of the document is a list of the names of the persons who have been named in the document.

29. The twenty-ninth part of the document is a list of the names of the persons who have been named in the document.

30. The thirtieth part of the document is a list of the names of the persons who have been named in the document.



Appendix F

Copy of Health Questionnaire

Si usted tiene alguna pregunta relacionada con este estudio y su participación en el mismo, por favor comuníquese conmigo al (915) 731-0017, o por correo electrónico a icarrillo@uacj.mx. y/o mi supervisora de tesis, Dr. Penelope Espinoza. Profesora asistente de Liderazgo y Fundaciones en Educación (915) 747-8784.

Sinceramente, Irene Carrillo Saucedo, Universidad de Texas en el Paso, Candidato al Doctorado.

Cuestionario de Salud

Parte 1: La siguiente es una lista de algunos factores relacionados con la salud física y mental en respuesta a las demandas del trabajo y vida personal. Marque un *Sí* o un *No*, de acuerdo al problema de salud y luego encierre un número entre el 5-1 al lado de cada elemento que mejor aplique a usted. (5) *Casi siempre*, (4) *Muy a menudo*, (3) *Moderadamente*, (2) *Muy poco*, (1) *No, en absoluto*.

1. Problemas Gastrointestinales			¿Qué tanto le ha afectado?				
Colitis	Si	No	5	4	3	2	1
Gastritis	Si	No	5	4	3	2	1
Reflujo	Si	No	5	4	3	2	1
Acidez Est.	Si	No	5	4	3	2	1
Úlceras	Si	No	5	4	3	2	1
Constipación y diarrea	Si	No	5	4	3	2	1
Otro: Especifique	Si	No	5	4	3	2	1

2. Problemas Cardiovasculares			¿Qué tanto le ha afectado?				
Hipertensión	Si	No	5	4	3	2	1
Hipotensión	Si	No	5	4	3	2	1
Taquicardia	Si	No	5	4	3	2	1
Hiper-ventilación	Si	No	5	4	3	2	1
Otro: Especifique	Si	No	5	4	3	2	1

3. Problemas Respiratorios			¿Qué tanto le ha afectado?				
Asma	Si	No	5	4	3	2	1
Bronquitis	Si	No	5	4	3	2	1
Alergias	Si	No	5	4	3	2	1
Otro: Especifique	Si	No	5	4	3	2	1

4. Problemas de la Piel

Dermatitis	Si	No
Urticaria	Si	No
Otro: Especifique	Si	No

¿Qué tanto le ha afectado?

5	4	3	2	1
5	4	3	2	1
5	4	3	2	1

**5. Problemas musculo-esqueléticos
Contracturas musculares**

Dolor cuello y hombros	Si	No
Inflamación tendones articulaciones rodillas y hombros	Si	No
Inflamación muscular	Si	No
Dolor espalda baja	Si	No
Otro: Especifique	Si	No

¿Qué tanto le ha afectado?

5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1

6. Problemas Visuales

Fatiga visual	Si	No
Visión borrosa	Si	No
Otro: Especifique	Si	No

¿Qué tanto le ha afectado?

5	4	3	2	1
5	4	3	2	1
5	4	3	2	1

7. Problemas Mandibulares

Bruxismo	Si	No
Parálisis facial	Si	No
Otro: Especifique	Si	No

¿Qué tanto le ha afectado?

5	4	3	2	1
5	4	3	2	1
5	4	3	2	1

8. Desórdenes del sueño

Apnea	Si	No
Insomnio	Si	No

¿Qué tanto le ha afectado?

5	4	3	2	1
5	4	3	2	1

Narcolepsia	Si	No	5	4	3	2	1
Somnolencia	Si	No	5	4	3	2	1
Otro: Especifique	Si	No	5	4	3	2	1

9. Uso de medicamentos u otros

Ansiolíticos	Si	No
Anti-depresivos	Si	No
Sedantes	Si	No
Alcohol	Si	No
Tabaco	Si	No
Otro: Especifique	Si	No

¿Qué tanto le ha afectado?

5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1

Parte II. Lea las siguientes categorías acerca de la conducta alimentaria y actividad física. Encierre en un círculo un *Sí* o un *No*, de acuerdo al alimento de consumo y actividad física realizada. Enseguida encierre un número entre el 5-1 al lado de cada elemento que mejor aplique a usted. (5) *Casi siempre*, (4) *Muy a menudo*, (3) *Moderadamente*, (2) *Muy poco*, (1) *No, en absoluto*.

10. Conducta alimentaria

	Si	No
Jugo- frutas naturales	Si	No
Frutas	Si	No
Verduras	Si	No
Carne roja	Si	No
Carne blanca	Si	No
Refresco	Si	No
Comida chatarra (papitas, hamburguesas, hotdogs, dulces, pizza).	Si	No
Pan-tortillas	Si	No

¿Qué tan seguido lo consume?

5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1

11. Actividad física

Correr	Si	No
Nadar	Si	No
Trotar	Si	No
Caminar	Si	No

¿Qué tan seguido lo hace?

5	4	3	2	1
5	4	3	2	1
5	4	3	2	1
5	4	3	2	1

Aerobicos	Si	No	5	4	3	2	1
Bicicleta	Si	No	5	4	3	2	1
Otro: Especifique	Si	No	5	4	3	2	1

1. DEMOGRAFICOS

1. Edad <input type="text"/> <input type="text"/> 2. Género M <input type="checkbox"/> F <input type="checkbox"/> 3. Estado civil: Soltero <input type="checkbox"/> Casado <input type="checkbox"/> Divorciado <input type="checkbox"/> Viudo <input type="checkbox"/>	4. Tiene hijos (as)? Sí <input type="checkbox"/> No <input type="checkbox"/> 5. Cuántos hijos (as) tiene? <input type="text"/> <input type="text"/> 6. Cuántos viven con usted? <input type="text"/> <input type="text"/>
---	---

2. ANTECEDENTES LABORALES

7. Departamento de adscripción:	
8. Programa de asignación:	
9. Institutos en los que labora:	
10. Cuánto tiempo lleva trabajando en UACJ?	
11. Tipo de contrato inicial en UACJ:	Horas sueltas..... <input type="checkbox"/> Medio tiempo..... <input type="checkbox"/> Por contrato..... <input type="checkbox"/> Tiempo completo <input type="checkbox"/> Perfil PROMEP..... <input type="checkbox"/>
12. Estudios profesionales:	Maestría..... <input type="checkbox"/> Doctorado..... <input type="checkbox"/> Post-Doctorado..... <input type="checkbox"/>
13. Actualmente se encuentra estudiando un Doctorado?	Sí..... <input type="checkbox"/> No..... <input type="checkbox"/>
14. Número de Materias que imparte por semestre:	
15. Total de horas impartidas por semana:	
16. Número de estudiantes a los que imparte tutoría por semestre:	
17. Número de horas que imparte en la tutoría por semestre:	

3. PROMEP/ESTIMULOS

18. Cuenta con Perfil PROMEP actualizado?	Sí..... <input type="checkbox"/> No..... <input type="checkbox"/>
19. Que tan seguido actualiza el perfil PROMEP?	Al final del semestre..... <input type="checkbox"/>

	Al inicio del año..... <input type="checkbox"/> Cuando las autoridades lo requieren..... <input type="checkbox"/>
20. Participó en el programa de estímulos este año?	Si..... <input type="checkbox"/> No..... <input type="checkbox"/>
21. Qué nivel obtuvo en el estímulo de habilidad académica?	
22. Qué nivel obtuvo en el estímulo al desempeño académico?	
23. Con respecto al año pasado sus estímulos económicos son:	Altos..... Bajos..... Iguales..... No apliqué..... Es primera vez.....
24. Es usted miembro del SNI?	Si..... <input type="checkbox"/> No..... <input type="checkbox"/>
25. Si contestó sí, que nivel tiene:	Candidato <input type="checkbox"/> I..... <input type="checkbox"/> II..... <input type="checkbox"/> III..... <input type="checkbox"/> IV..... <input type="checkbox"/>
26. Si no es miembro del SNI, participó en la pasada convocatoria?	Si..... <input type="checkbox"/> No..... <input type="checkbox"/>
27. Actualmente se encuentra realizando investigación con financiamiento externo?	Si..... <input type="checkbox"/> No..... <input type="checkbox"/>
28. Si contestó sí, especifique la institución que le provee los fondos:	Conacyt-Promep..... <input type="checkbox"/> Otro..... <input type="checkbox"/>
29. Actualmente se encuentra realizando investigación sin financiamiento institucional?	Si..... <input type="checkbox"/> No..... <input type="checkbox"/>
30. Número de artículos que publica al año:	
31. Considera que actualizar el perfil PROMEP y participar en los estímulos le ha afectado su salud?	Si..... <input type="checkbox"/> No..... <input type="checkbox"/>
32. Si contestó sí, en qué áreas se ha visto afectado(a)?	Físicamente..... <input type="checkbox"/> Psicológicamente..... <input type="checkbox"/> Emocionalmente..... <input type="checkbox"/> En lo familiar..... <input type="checkbox"/> En lo social..... <input type="checkbox"/>
33. Si contestó NO , explique la o las razones por las que no actualiza el perfil PROMEP y/o participa en los estímulos:	Sobrecarga académica..... <input type="checkbox"/> Problemas de Salud..... <input type="checkbox"/>

	<p>Muchos requerimientos ...<input type="checkbox"/>..</p> <p>Bajos incentivos económicos.....<input type="checkbox"/></p> <p>Mucha tensión (estrés y ansiedad).....<input type="checkbox"/></p> <p>Otro.....<input type="checkbox"/></p> <p>Especifique_____</p> <p>_____</p>
34. Qué otras actividades desempeña?	<p>Coordinador de Programa.....<input type="checkbox"/></p> <p>Líder de cuerpo académico.....<input type="checkbox"/></p> <p>Coordinador de academia.....<input type="checkbox"/></p> <p>Consejero técnico universitario.....<input type="checkbox"/></p> <p>Consejero universitario.....<input type="checkbox"/>..</p> <p>Otro.....<input type="checkbox"/></p> <p>Especifique_____</p> <p>_____</p>
35. Es miembro de algún cuerpo académico?	<p>Si.....<input type="checkbox"/></p> <p>No.....<input type="checkbox"/>..</p>
36. Si contestó sí, cual es el estado del cuerpo académico:	<p>Formación.....<input type="checkbox"/></p> <p>Consolidación.....<input type="checkbox"/></p> <p>Consolidado.....<input type="checkbox"/></p>
37. Qué función tiene en el cuerpo académico:	<p>Líder.....<input type="checkbox"/></p> <p>Participante.....<input type="checkbox"/>..</p> <p>Asociado.....<input type="checkbox"/></p>
38. Considera que las funciones y actividades dentro del cuerpo académico han dado como resultado:	<p>Más comunicación <input type="checkbox"/></p> <p>Más competitividad <input type="checkbox"/></p> <p>Más conocimiento <input type="checkbox"/></p>

	Más trabajo <input type="checkbox"/> Desigualdad <input type="checkbox"/> Conflicto <input type="checkbox"/>
39. Si no es miembro de algún cuerpo académico indique por qué no:	Dificultades de gestión académica..... <input type="checkbox"/> Dificultades para el trabajo en equipo..... <input type="checkbox"/> Desinterés personal..... <input type="checkbox"/> Otro..... <input type="checkbox"/> Especifique_____ _____ _____

40. ANTECEDENTES FAMILIARES

						Enfermedades Crónicas		
	Edad	Vivo	Finado	Causa del deceso	Diabetes	Hipertensión	Tuberculosis	Cáncer
Padre								
Madre								

41. ANTECEDENTES PERSONALES

Ha sido diagnosticado bajo alguno de los siguientes problemas de salud?

			Fué diagnosticado antes o después de obtener la posición de permanencia?	
	Si	No	Antes	Después
Diabetes				
Hipertensión				
Cáncer				
Problemas cardíacos				
Altos niveles de lípidos (grasas)				
Otro:				

Appendix G

Table 1

Correlation with p-values between stress/health variables and permanent position process variables (Total)

	Stress	Age	Gender	Number of Sons and Daughters	Class hours per week	Tutoring hours per semester	Updated PROMEP profile	Levels of Stimuli	SNI level	Research with external funding	Research without funding	Level of Academic Body	Published articles per year
Stress	1	0.08 (0.42)	-0.10 (0.32)	0.06 (0.93)	-0.16 (0.11)	0.11 (0.26)	-0.05 (0.62)	0.07 (0.48)	0.18 (0.08)	0.32** (<0.01)	-0.10 (0.33)	0.19 (0.06)	0.05 (0.60)
Health General	0.46** (p<0.01)	0.18 (0.08)	-0.17 (0.08)	0.01 (0.93)	-0.21* (0.04)	0.03 (0.80)	0.19 (0.06)	0.23* (0.02)	0.06 (0.53)	0.14 (0.16)	-0.11 (0.29)	0.06 (0.53)	-0.05 (0.61)
Health Gastrointestinal	0.32** (p<0.01)	0.11 (0.27)	-0.21* (0.03)	0.05 (0.61)	-0.14 (0.17)	0.15 (0.13)	0.15 (0.12)	0.25* (0.01)	<0.01 (0.98)	0.01 (0.89)	-0.10 (0.30)	-0.07 (0.50)	-0.10 (0.34)
Health Cardiovascular	0.13 (0.18)	0.24* (0.02)	-0.02 (0.86)	0.16 (0.10)	-0.09 (0.39)	-0.04 (0.67)	0.05 (0.63)	-0.05 (0.59)	0.03 (0.76)	0.08 (0.40)	-.13 (0.17)	-0.16 (0.11)	-0.16 (0.11)
Health Respiratory	0.25* (0.01)	0.09 (0.35)	0.01 (0.95)	0.13 (0.18)	-0.12 (0.23)	-0.10 (0.33)	-0.07 (0.48)	0.03 (0.78)	-0.01 (0.93)	0.02 (0.86)	-0.02 (0.86)	0.03 (0.75)	0.08 (0.41)
Health Skin	0.33** (p<0.01)	0.13 (0.18)	-0.09 (0.36)	0.01 (0.96)	-.11 (0.26)	-0.14 (0.17)	-0.03 (0.75)	0.02 (0.84)	-0.03 (0.77)	0.02 (0.86)	0.01 (0.96)	0.07 (0.46)	-0.10 (0.34)
Health musculoskeletal	0.33** (p<0.01)	0.12 (0.23)	-.16 (0.10)	-0.06 (0.57)	-0.22* (0.03)	0.06 (0.54)	0.16 (0.10)	0.20* (0.04)	<0.01 (0.99)	0.10 (0.33)	-0.05 (0.64)	0.07 (0.47)	-0.04 (0.71)
Health Visual	0.34** (p<0.01)	0.12 (0.21)	-0.11 (0.27)	0.04 (0.72)	-0.08 (0.42)	0.06 (0.57)	0.16 (0.11)	0.17 (0.08)	0.04 (0.70)	0.20* (0.04)	-0.06 (0.55)	0.08 (0.42)	0.04 (0.66)
Health Mandibular	0.36** (p<0.01)	0.11 (0.25)	-0.14 (0.15)	-0.03 (0.79)	-0.10 (0.33)	-0.04 (0.72)	-0.02 (0.82)	0.05 (0.60)	0.04 (0.67)	<0.01 (0.99)	-0.05 (0.62)	0.02 (0.83)	-0.14 (0.17)
Health Sleep Disorders	0.29** (p<0.01)	0.03 (0.76)	-0.03 (0.74)	-0.15 (0.13)	-0.13 (0.21)	-0.08 (0.41)	0.25* (0.01)	0.20* (0.04)	0.18 (0.07)	0.21* (0.03)	-0.07 (0.46)	0.13 (0.18)	0.08 (0.40)
Health Medicine Use	0.23* (0.02)	0.03 (0.75)	0.16 (0.10)	0.09 (0.37)	-0.14 (0.17)	0.10 (0.31)	0.17 (0.08)	0.05 (0.64)	0.15 (0.13)	0.16 (0.10)	-0.24* (0.01)	0.13 (0.21)	0.02 (0.82)
Health Physical Activity	-0.36** (p<0.01)	-0.19 (0.06)	0.30** (<0.01)	0.10 (0.33)	0.02 (0.88)	0.01 (0.91)	0.17 (0.09)	0.08 (0.43)	<0.01 (0.97)	-0.05 (0.63)	0.37** (<0.01)	0.08 (0.41)	0.20* (0.05)

Appendix H

Table 2

Correlation with p-values between stress/health variables and permanent position process variables (Women)

	Stress	Age	Number of Sons and Daughters	Class hours per week	Tutoring hours per semester	Updated PROMEP profile	Levels of Stimuli	SNI level	Research with external funding	Research without funding	Level of Academic Body	Published articles per year
Stress	1	-0.14 (0.33)	-0.03 (0.83)	-0.13 (0.39)	0.17 (0.26)	-0.04 (0.80)	0.10 (0.48)	0.28* (0.05)	0.46** (<0.01)	0.01 (0.96)	0.17 (0.23)	0.29* (0.04)
Health General	0.39** (<0.01)	0.01 (0.93)	-0.04 (0.76)	-0.25 (0.09)	0.15 (0.30)	0.21 (0.15)	0.20 (0.16)	0.01 (0.95)	0.19 (0.20)	<0.01 (0.99)	-0.12 (0.39)	-0.04 (0.78)
Health Gastrointestinal	0.28* (0.05)	<0.01 (0.99)	-0.03 (0.86)	-0.15 (0.32)	0.32 (0.03)	0.25 (0.08)	0.25 (0.08)	-0.02 (0.91)	0.22 (0.12)	0.04 (0.81)	-0.16 (0.28)	0.07 (0.61)
Health Cardiovascular	0.12 (0.41)	0.09 (0.53)	0.08 (0.60)	-0.14 (0.35)	-0.05 (0.75)	0.01 (0.96)	-0.07 (0.65)	-0.12 (0.40)	0.04 (0.76)	.06 (0.70)	-0.31* (0.03)	-0.30* (0.03)
Health Respiratory	0.17 (0.23)	<0.01 (0.99)	0.05 (0.74)	-0.15 (0.31)	-0.15 (0.30)	-0.18 (0.22)	-0.11 (0.47)	-0.11 (0.46)	0.04 (0.76)	0.01 (0.97)	-0.02 (0.88)	<0.01 (0.99)
Health Skin	0.31* (0.03)	-0.13 (0.36)	-0.15 (0.30)	-.18 (0.21)	-0.02 (0.90)	0.08 (0.57)	0.03 (0.84)	0.07 (0.66)	0.15 (0.31)	-0.01 (0.95)	0.07 (0.61)	-0.09 (0.53)
Health Musculoskeletal	0.29* (0.04)	0.05 (0.73)	-0.12 (0.40)	-0.19 (0.18)	0.12 (0.43)	0.19 (0.18)	0.27 (0.06)	0.06 (0.70)	0.10 (0.47)	0.05 (0.72)	-0.09 (0.54)	-0.02 (0.88)
Health Visual	0.32* (0.03)	<0.01 (0.99)	0.08 (0.58)	-0.14 (0.33)	0.16 (0.27)	0.10 (0.47)	0.12 (0.42)	-0.04 (0.77)	0.18 (0.22)	-0.06 (0.70)	-0.11 (0.45)	0.01 (0.94)
Health Mandibular	0.36* (0.01)	0.07 (0.64)	-0.03 (0.85)	-0.10 (0.51)	0.05 (0.74)	0.12 (0.40)	0.13 (0.36)	0.13 (0.36)	0.12 (0.40)	-0.15 (0.31)	0.02 (0.91)	-0.11 (0.46)
Health Sleep Disorders	0.29* (0.04)	-0.02 (0.88)	-0.06 (0.67)	-0.30* (0.04)	-0.02 (0.91)	0.27 (0.06)	0.14 (0.33)	0.11 (0.44)	0.04 (0.80)	-0.08 (0.57)	0.06 (0.66)	-0.02 (0.91)
Health Medicine Use	0.11 (0.43)	-0.11 (0.44)	-0.01 (0.96)	-0.16 (0.26)	0.13 (0.36)	0.19 (0.19)	0.01 (0.93)	-0.10 (0.48)	0.03 (0.81)	-0.22 (0.12)	0.11 (0.45)	-0.04 (0.78)
Health Physical Activity	-0.36** (<0.01)	-0.10 (0.51)	0.02 (0.88)	0.20 (0.17)	-0.08 (0.61)	0.03 (0.82)	-0.07 (0.63)	-0.01 (0.93)	-0.03 (0.83)	0.11 (0.44)	0.07 (0.64)	0.02 (0.92)

Appendix I

Table 3

Correlation with p-values between stress/health variables and permanent position process variables (Men)

	Stress	Age	Number of Sons and Daughters	Class hours per week	Tutoring hours per semester	Updated PROMEP profile	Levels of Stimuli	SNI level	Research with external funding	Research without funding	Level of Academic Body	Published articles per year
Stress	1	0.24 (0.08)	0.07 (0.60)	-0.24 (0.08)	0.01 (0.95)	-0.05 (0.70)	0.03 (0.84)	0.20 (0.15)	0.27 (0.06)	-0.21 (0.14)	0.21 (0.14)	-0.15 (0.30)
Health General	0.53** (<0.01)	0.24 (0.08)	0.13 (0.37)	-0.21 (0.13)	-0.19 (0.18)	0.19 (0.18)	0.27* (0.05)	0.19 (0.18)	0.18 (0.19)	-0.20 (0.15)	0.21 (0.13)	-0.01 (0.96)
Health Gastrointestin al	0.35* (0.01)	0.09 (0.51)	0.21 (0.12)	-0.18 (0.19)	-0.13 (0.36)	0.07 (0.62)	0.26 (0.07)	0.12 (0.40)	-0.09 (0.54)	-0.24 (0.09)	0.03 (0.85)	-0.20 (0.15)
Health Cardiovascula r	0.15 (0.28)	0.35* (0.01)	0.23 (0.09)	-0.04 (0.77)	-0.04 (0.76)	0.08 (0.56)	-0.05 (0.75)	0.11 (0.45)	0.12 (0.40)	-.29* (0.03)	-0.05 (0.73)	-0.06 (0.68)
Health Respiratory	0.35* (0.01)	0.19 (0.17)	0.21 (0.13)	-0.09 (0.53)	-0.03 (0.83)	0.03 (0.83)	0.17 (0.24)	0.04 (0.79)	~<0.01 (0.99)	-0.04 (0.77)	0.08 (0.55)	0.15 (0.27)
Health Skin	0.33* (0.01)	0.36** (<0.01)	0.21 (0.13)	-.05 (0.74)	-0.35* (0.01)	-0.16 (0.25)	0.01 (0.97)	0.06 (0.68)	-0.06 (0.65)	0.04 (0.80)	0.08 (0.58)	-0.07 (0.59)
Health Musculoskelet al	0.35* (0.01)	0.09 (0.53)	0.05 (0.70)	-0.30* (0.03)	-0.04 (0.78)	0.15 (0.29)	0.14 (0.33)	0.04 (0.77)	0.15 (0.27)	-0.13 (0.37)	0.23 (0.10)	~<0.01 (0.99)
Health Visual	0.36** (<0.01)	0.18 (0.20)	0.03 (0.81)	-0.03 (0.82)	-0.12 (0.41)	0.23 (0.10)	0.25 (0.07)	0.15 (0.30)	0.28* (0.04)	-0.05 (0.73)	0.29* (0.04)	0.12 (0.40)
Health Mandibular	0.34* (0.01)	0.09 (0.54)	0.03 (0.83)	-0.15 (0.29)	-0.23 (0.10)	-0.21 (0.13)	-0.07 (0.63)	0.07 (0.62)	0.07 (0.64)	0.11 (0.43)	0.03 (0.83)	-0.14 (0.33)
Health Sleep Disorders	0.33* (0.02)	0.05 (0.74)	-0.19 (0.17)	-0.05 (0.74)	-0.14 (0.32)	0.25 (0.07)	0.25 (0.07)	0.22 (0.11)	0.29* (0.03)	-0.07 (0.61)	0.17 (0.21)	0.14 (0.32)
Health Medicine Use	0.41** (<0.01)	0.24 (0.08)	0.12 (0.38)	-0.08 (0.59)	0.11 (0.43)	0.15 (0.28)	0.09 (0.52)	0.22 (0.11)	0.21 (0.13)	-0.29* (0.03)	0.14 (0.32)	0.03 (0.85)
Health Physical Activity	-0.37** (p<0.01)	-0.12 (0.40)	0.06 (0.64)	-0.06 (0.66)	0.15 (0.28)	0.25 (0.07)	0.20 (0.14)	-0.11 (0.45)	-0.15 (0.27)	0.56** (<0.01)	0.10 (0.49)	0.24 (0.08)

Appendix J

Table 4 (A)

Multiple linear regressions with stress/health variables as predictive variables and socio-demographic/permanent position variables as predictors in the Total

	Stress				Health General				Health Gastrointestinal				Health Cardiovascular				Health Respiratory				Health Skin							
	B	SE B	B	<i>p</i>	B	SE B	B	<i>p</i>	B	SE B	B	<i>P</i>	B	SE B	β	<i>p</i>	B	SE B	β	<i>p</i>	B	SE B	β	<i>P</i>				
Constant	14.29	2.74		<0.01	21.24	12.03		0.08	7.42	3.92		0.06	-	0.41	1.90		0.83	1.25		0.41	0.63	1.50		0.67				
Age	0.04	0.05	0.09	0.41	0.26	0.20	0.14	0.21	0.01	0.07	0.02	0.84	0.05	0.03	0.19	0.09	0.02	0.03	0.11	0.35	0.04	0.03	0.17	0.16				
Gender	-1.84	0.95	-	0.06	-5.46	4.12	-	0.19	-	2.66	1.34	0.23	0.05	-	0.65	-	0.89	0.15	0.51	0.04	0.77	-	0.51	-0.07	0.61			
Number of Sons and Daughters																												
Class	0.40	0.37	0.12	0.29	1.27	1.62	0.09	0.43	0.64	0.53	0.13	0.23	0.58	0.26	0.25	0.03	0.23	0.20	0.13	0.27	-	0.02	0.20	-0.01	0.91			
hours per week	-0.10	0.06	-	0.13	-0.58	0.27	-	0.04	-	0.09	-	0.20	0.05	-	0.04	-	0.33	-0.04	0.03	-0.13	0.26	-	0.04	0.03	-0.11	0.30		
Tutoring hours per semester	0.02	0.01	0.13	0.23	0.04	0.06	0.06	0.59	0.04	0.02	0.19	0.06	0.01	0.01	0.06	0.61	-0.01	0.01	-0.09	0.40	-	0.01	0.01	-0.12	0.30			
Updated PROMEP profile	-2.13	1.11	-	0.27	1.80	4.87	0.05	0.71	0.94	1.59	0.08	0.55	0.79	0.77	0.15	0.31	-0.95	0.61	-0.24	0.12	-	0.45	0.61	-0.11	0.46			
Level of stimuli	0.06	0.13	0.07	0.63	0.95	0.56	0.24	0.10	0.42	0.18	0.32	0.02	-	0.04	0.09	-	0.06	0.70	0.08	0.07	0.17	0.28	0.04	0.07	0.09	0.55		
SNI level	0.64	0.57	0.14	0.27	-0.29	2.49	-	0.02	0.32	0.81	0.05	0.69	0.23	0.39	0.08	0.55	-0.27	0.31	-0.12	0.39	0.04	0.31	0.02	0.91				
Research with external funding																												
Research without funding	3.20	1.12	0.34	0.01	7.18	4.92	0.17	0.15	0.93	1.61	0.07	0.57	1.32	0.78	0.20	0.09	0.28	0.61	0.06	0.65	-	0.01	0.61	<0.01	0.98			
Level of Academic Body	-0.41	0.87	-	0.05	-2.17	3.84	-	0.57	-	1.25	-	0.69	-	0.11	0.61	-	0.02	0.86	-0.21	0.48	-0.05	0.66	0.27	0.48	0.07	0.57		
Published articles per year	-0.06	0.40	-	0.02	-1.32	1.72	-	0.10	0.45	1.22	0.56	0.27	0.03	-	0.48	0.27	-	0.23	0.08	<0.01	0.21	<0.01	0.99	0.16	0.21	0.10	0.46	
	0.22	0.42	0.07	0.60	-2.77	1.85	-	0.19	0.14	1.21	0.60	0.24	0.05	-	0.44	0.29	-	0.19	0.14	0.30	0.23	0.17	0.19	-	0.27	0.23	-0.16	0.24
R ² (p)	0.23 (0.02)				0.21 (0.04)				0.27 (0.01)				0.18 (0.09)				0.09 (0.72)				0.09 (0.71)							

Appendix K

Table 4 (B)

Multiple linear regressions with stress/health variables as predictive variables and socio-demographic/permanent position variables as predictors in the Total

	Health Musculoskeletal				Health Visual				Health Mandibular				Health Sleep Disorders				Health Medicine Use				Health Physical Activity			
	B	SE B	B	P	B	SE B	β	p	B	SE B	B	p	B	SE B	B	p	B	SE B	β	p	B	SE B	β	P
Constant	5.48	3.84		0.16	1.94	2.28		0.40	0.20	0.86		0.81	4.74	3.14		0.14	1.03	2.25		0.65	3.36	3.18		0.29
Age	0.08	0.06	0.14	0.24	0.03	0.04	0.09	0.46	0.02	0.01	0.15	0.21	0.01	0.05	0.01	0.91	0.04	0.04	0.11	0.34	-0.05	0.05	-0.10	0.36
Gender	-0.98	1.32	-0.09	0.46	-1.20	0.78	-0.19	0.13	-0.15	0.30	-0.07	0.60	-0.27	1.08	-0.03	0.80	1.49	0.77	0.23	0.06	2.52	1.09	0.27	0.02
Number of Sons and Daughters	-0.05	0.52	-0.01	0.92	0.36	0.31	0.14	0.24	-0.02	0.12	-0.02	0.85	-0.44	0.42	-0.12	0.30	0.01	0.30	0.01	0.96	0.31	0.43	0.08	0.47
Class hours per week	-0.18	0.09	-0.22	0.04	-0.03	0.05	-0.06	0.60	-0.02	0.02	-0.12	0.28	-0.05	0.07	-0.08	0.47	-0.08	0.05	-0.16	0.11	0.07	0.07	0.10	0.32
Tutoring hours per semester	0.01	0.02	0.07	0.52	<0.01	0.01	0.02	0.85	<0.01	0.01	0.01	0.91	-0.01	0.02	-0.07	0.52	0.02	0.01	0.20	0.05	-0.01	0.02	-0.07	0.48
Updated PROMEP profile	0.14	1.55	0.01	0.93	0.08	0.92	0.01	0.93	-0.23	0.35	-0.10	0.52	1.47	1.27	0.17	0.25	1.38	0.91	0.21	0.13	2.26	1.29	0.24	0.08
Level of stimuli	0.28	0.18	0.23	0.13	0.12	0.11	0.17	0.27	0.03	0.04	0.13	0.41	0.02	0.15	0.02	0.90	-0.11	0.11	-0.15	0.30	-0.05	0.15	-0.04	0.75
SNI level	-0.82	0.79	-0.14	0.30	-0.24	0.47	-0.07	0.61	0.08	0.18	0.06	0.66	0.37	0.65	0.08	0.57	0.26	0.47	0.07	0.58	-0.94	0.66	-0.18	0.16
Research with external funding	1.35	1.57	0.11	0.39	2.34	0.93	0.31	0.01	-0.08	0.35	-0.03	0.82	1.07	1.28	0.10	0.41	0.12	0.92	0.02	0.90	-0.20	1.30	-0.02	0.88
Research without funding	-0.49	1.22	-0.05	0.69	0.24	0.73	0.04	0.75	-0.08	0.28	-0.03	0.79	-1.29	1.00	-0.15	0.20	2.40	0.72	0.35	<0.01	3.43	1.01	0.35	<0.01
Level of Academic Body	0.24	0.55	0.06	0.66	-0.23	0.33	-0.10	0.48	0.07	0.12	0.07	0.59	0.15	0.45	0.04	0.74	0.34	0.32	0.13	0.29	0.06	0.45	0.02	0.90
Published articles per year	-0.79	0.59	-0.17	0.18	-0.09	0.35	-0.04	0.79	-0.22	0.13	-0.22	0.10	-0.04	0.48	-0.01	0.93	-0.29	0.35	-0.10	0.41	0.01	0.49	<0.01	0.99
R ² (p)	0.17(0.16)				0.14(0.35)				0.09(0.73)				0.14 (0.34)				0.24 (0.01)				0.27 (<0.01)			

Note. Significant values are shown in bold.

Appendix L

Table 5 (A)

Multiple linear regressions with stress/health variables as predictive variables and socio-demographic/permanent position variables as predictors in Women

	Stress				Health General				Health Gastrointestinal				Health Cardiovascular				Health Respiratory				Health Skin			
	B	SE B	B	P	B	SE B	B	p	B	SE B	B	P	B	SE B	β	p	B	SE B	β	p	B	SE B	B	P
Constant	10.35	5.48		0.07	42.43	24.91		0.10	7.58	8.05		0.35	4.08	3.25		0.22	3.50	2.92		0.24	5.78	3.20		0.08
Age	0.06	0.09	0.11	0.47	-0.12	0.39	0.05	0.76	0.05	0.13	0.07	0.68	0.02	0.05	0.07	0.69	<0.01	0.05	0.01	0.94	-0.05	0.05	0.19	0.30
Number of Sons and Daughters	0.43	0.63	0.11	0.50	1.22	2.86	0.07	0.67	0.48	0.92	0.08	0.61	0.55	0.37	0.25	0.15	0.14	0.34	0.08	0.68	-0.31	0.37	0.16	0.40
Class hours per week	-0.01	0.10	0.01	0.93	-0.74	0.44	0.28	0.10	0.11	0.14	0.11	0.47	0.08	0.06	0.22	0.19	-0.05	0.05	0.19	0.31	-0.07	0.06	0.20	0.26
Tutoring hours per semester	0.01	0.02	0.10	0.52	0.12	0.10	0.20	0.24	0.06	0.03	0.32	0.05	0.01	0.01	0.09	0.59	-0.01	0.01	0.17	0.34	<0.01	0.01	0.01	0.97
Updated PROMEP profile	-1.15	1.85	0.13	0.54	6.39	8.40	0.17	0.45	3.41	2.71	0.27	0.22	0.79	1.10	0.16	0.48	-1.42	0.99	0.35	0.16	0.77	1.08	0.17	0.48
Level of stimuli	-0.17	0.23	0.17	0.47	0.77	1.04	0.19	0.46	0.22	0.34	0.16	0.52	0.02	0.14	0.04	0.88	0.07	0.12	0.16	0.57	-0.02	0.13	0.04	0.90
SNI level	2.19	1.29	0.28	0.10	-1.94	5.88	0.06	0.74	1.42	1.90	0.12	0.46	0.36	0.77	0.08	0.64	-0.49	0.69	0.14	0.48	0.15	0.76	0.04	0.84
Research with external funding	6.13	1.96	0.49	0.00	7.97	8.88	0.15	0.38	4.35	2.87	0.24	0.14	0.90	1.16	0.13	0.44	0.40	1.04	0.07	0.70	-0.11	1.14	0.02	0.92
Research without funding	-0.61	1.36	0.07	0.65	-2.70	6.20	0.07	0.67	0.11	2.00	0.01	0.96	0.68	0.81	0.14	0.41	0.09	0.73	0.02	0.91	-0.49	0.80	0.11	0.54
Level of Academic Body	-0.24	0.61	0.07	0.70	-4.24	2.76	0.29	0.13	2.07	0.89	0.41	0.03	0.65	0.36	0.33	0.08	-0.07	0.32	0.04	0.82	0.28	0.35	0.16	0.43
Published articles per year	1.40	0.75	0.34	0.07	-3.47	3.43	0.20	0.32	0.21	1.11	0.04	0.85	0.79	0.45	0.35	0.08	0.26	0.40	0.14	0.52	-0.63	0.44	0.30	0.16
R ² (p)	0.36 (0.08)				0.24 (0.43)				0.34 (0.12)				0.26 (0.35)				0.13 (0.90)				0.14 (0.86)			

Note. Significant values are shown in bold.

Appendix M

Table 5 (B)

Multiple linear regressions with stress/health variables as predictive variables and socio-demographic/permanent position variables as predictors in Women

	Health Musculoskeletal				Health Visual				Health Mandibular				Health Sleep Disorders				Health Medicine Use				Health Physical Activity				
	B	SE B	B	p	B	SE B	β	p	B	SE B	B	p	B	SE B	B	p	B	SE B	β	p	B	SE B	β	P	
Constant	9.84	7.43		0.19	3.14	4.88		0.52	0.44	1.92		0.82	8.06	3.76		0.04	8.84	4.17		0.04	1.89	5.35		0.73	
Age	0.01	0.12	0.02	0.92	0.02	0.08	0.04	0.80	0.01	0.03	0.08	0.66	0.04	0.06	0.10	0.55	0.09	0.07	0.23	0.18	0.02	0.08	-0.04	0.84	
Number of Sons and Daughters	-																-								
Class hours per week	0.52	0.85	-0.11	0.55	0.71	0.56	0.23	0.21	0.04	0.22	0.03	0.86	0.12	0.43	0.05	0.77	0.10	0.48	0.04	0.83	0.14	0.61	0.04	0.82	
Tutoring hours per semester	-												-				-								
Updated PROMEP profile	0.16	0.13	-0.21	0.24	0.10	0.09	0.20	0.26	-0.03	0.03	-0.16	0.38	0.15	0.07	0.38	0.03	0.13	0.07	0.28	0.09	0.16	0.10	0.30	0.11	
Level of stimuli	0.02	0.03	0.11	0.50	0.02	0.02	0.21	0.23	0.01	0.01	0.13	0.46	0.01	0.01	0.07	0.68	0.02	0.02	0.20	0.21	-	0.01	0.02	-0.11	0.54
SNI level	-												-				-				-				
Research with external funding	0.05	2.51	<0.01	0.98	0.82	1.64	0.12	0.62	0.29	0.65	0.11	0.65	1.79	1.27	0.32	0.17	3.02	1.41	0.47	0.04	1.65	1.80	0.22	0.37	
Research without funding	0.49	0.31	0.42	0.12	0.04	0.20	0.05	0.86	0.02	0.08	0.06	0.84	0.06	0.16	0.10	0.70	0.19	0.17	0.28	0.27	0.20	0.22	-0.25	0.37	
Level of Academic Body	-												-				-				-				
Published articles per year	0.97	1.75	-0.10	0.58	0.31	1.15	0.05	0.79	0.45	0.45	0.19	0.33	1.01	0.89	0.20	0.26	0.12	0.98	0.02	0.90	0.03	1.26	<0.01	0.98	
R ² (p)	0.25	2.65	0.02	0.93	2.34	1.74	0.24	0.19	0.33	0.68	0.09	0.64	0.48	1.34	0.06	0.72	0.98	1.49	0.11	0.51	0.29	1.91	0.03	0.88	
	0.10	1.85	-0.01	0.96	0.49	1.21	0.07	0.69	-0.63	0.48	-0.23	0.19	1.86	0.93	0.33	0.05	2.37	1.04	0.37	0.03	1.46	1.33	0.20	0.28	
	-				-								-				-				-				
	0.73	0.82	-0.17	0.38	0.88	0.54	0.32	0.11	<0.01	0.21	<0.01	0.99	0.12	0.42	0.05	0.77	0.32	0.46	0.13	0.49	0.36	0.59	0.12	0.55	
	-				-								-				-				-				
	1.10	1.02	-0.22	0.29	0.13	0.67	0.04	0.85	-0.35	0.26	-0.28	0.20	0.51	0.52	0.20	0.33	0.77	0.57	0.26	0.19	0.09	0.74	0.03	0.91	
	0.20 (0.61)				0.18 (0.72)				0.15 (0.83)				0.24 (0.44)				0.29 (0.23)				0.12 (0.93)				

Note. Significant values are shown in bold.

Appendix N

Table 6 (A)

Multiple linear regressions with stress/health variables as predictive variables and socio-demographic/permanent position variables as predictors in Men

	Stress				Health General				Health Gastrointestinal				Health Cardiovascular				Health Respiratory				Health Skin			
	B	SE B	B	p	B	SE B	B	p	B	SE B	B	P	B	SE B	B	p	B	SE B	β	p	B	SE B	β	P
Constant	11.48	2.71		<0.01	7.34	12.04		0.55	3.25	3.53		0.36	-2.20	2.30		0.34	-0.07	1.67		0.97	1.67	1.27		0.20
Age	0.10	0.06	0.29	0.09	0.46	0.25	0.30	0.07	0.09	0.07	0.18	0.23	0.09	0.05	0.32	0.06	0.04	0.03	0.21	0.23	0.08	0.03	0.44	0.01
Number of Sons and Daughters	0.34	0.48	0.12	0.47	1.64	2.11	0.13	0.44																
Class hours per week	-0.12	0.09	-	0.19	-	0.39	-	0.54	0.81	0.62	0.20	0.20	0.50	0.40	0.21	0.23	0.29	0.29	0.18	0.32	0.18	0.22	0.12	0.44
Tutoring hours per semester	0.02	0.02	0.21	0.42	0.24	0.09	0.09	0.40	-0.10	0.11	0.12	0.39	0.01	0.07	0.03	0.87	-0.03	0.05	0.09	0.57	0.02	0.04	0.07	0.62
Updated PROMEP profile	-1.78	1.42	-	0.22	-	4.12	-	0.13	<0.01	0.03	0.01	0.96	<0.01	0.02	0.03	0.82	<0.01	0.01	0.05	0.76	0.02	0.01	-0.35	0.02
Level of stimuli	0.13	0.16	0.17	0.42	1.49	0.72	0.41	0.05	-0.67	1.83	0.07	0.72	0.03	1.19	0.01	0.98	-0.88	0.87	0.22	0.32	1.13	0.66	-0.32	0.09
SNI level	0.50	0.67	0.16	0.46	-	2.91	-	0.34	0.62	0.21	0.55	0.01	0.03	0.14	0.04	0.83	0.18	0.10	0.40	0.08	0.11	0.08	0.27	0.16
Research with external funding	1.48	1.37	0.20	0.29	4.41	6.07	0.13	0.47	0.54	0.86	0.12	0.53	-0.11	0.56	0.04	0.84	-0.50	0.40	0.27	0.22	0.01	0.31	<0.01	0.98
Research without funding	-0.25	1.28	-	0.85	-	5.71	-	0.24	-1.86	1.78	0.17	0.30	0.69	1.16	0.11	0.55	-0.41	0.84	0.09	0.63	0.01	0.64	<0.01	0.99
Level of Academic Body	0.12	0.58	0.04	0.84	3.49	2.44	0.29	0.16	-1.40	1.68	0.13	0.41	-1.89	1.09	0.31	0.09	-1.08	0.79	0.26	0.18	0.85	0.60	0.23	0.17
Published articles per year	-0.67	0.52	-	0.20	-	2.32	-	0.23	-0.07	0.72	0.02	0.92	0.17	0.47	0.08	0.71	0.28	0.34	0.18	0.41	0.15	0.26	0.11	0.57
R ² (p)	0.30 (0.19)				0.32 (0.12)				-2.08	0.68	0.51	<0.01	-0.26	0.44	0.11	0.56	0.30	0.32	0.18	0.36	0.39	0.24	-0.27	0.11
									0.42 (0.02)				0.29 (0.20)				0.20 (0.55)				0.40 (0.03)			

Note. Significant values are shown in bold.

Appendix O

Table 6 (B)

Multiple linear regressions with stress/health variables as predictive variables and socio-demographic/permanent position variables as predictors in Men

	Health Musculoskeletal				Health Visual				Health Mandibular				Health Sleep Disorders				Health Medicine Use				Health Physical Activity						
	B	SE B	B	p	B	SE B	β	p	B	SE B	B	p	B	SE B	B	p	B	SE B	β	p	B	SE B	β	P			
Constant	5.48	3.84		0.16	1.94	2.28		0.40	0.20	0.86		0.81	4.74	3.14		0.14	1.03	2.25		0.65	3.36	3.18		0.29			
Age	0.08	0.06	0.14	0.24	0.03	0.04	0.09	0.46	0.02	0.01	0.15	0.21	0.01	0.05	0.01	0.91	0.04	0.04	0.11	0.34	-0.05	0.05	-0.10	0.36			
Number of Sons and Daughters	-	0.52	-	0.92	0.36	0.31	0.14	0.24	-0.02	0.12	-	0.85	-	0.42	-	0.12	0.30	0.01	0.30	0.01	0.96	0.31	0.43	0.08	0.47		
Class hours per week	-	0.09	-	0.04	-0.03	0.05	-	0.60	-0.02	0.02	-	0.28	-	0.07	-	0.08	-	0.05	-	0.11	0.07	0.07	0.10	0.32			
Tutoring hours per semester	0.01	0.02	0.07	0.52	<0.01	0.01	0.02	0.85	<0.01	0.01	0.01	0.91	-	0.01	-	0.07	0.52	0.02	0.01	0.20	0.05	-	0.01	0.02	-0.07	0.48	
Updated PROMEP profile	0.14	1.55	0.01	0.93	0.08	0.92	0.01	0.93	-0.23	0.35	-	0.10	0.52	1.47	1.27	0.17	0.25	1.38	0.91	0.21	0.13	2.26	1.29	0.24	0.08		
Level of stimuli	0.28	0.18	0.23	0.13	0.12	0.11	0.17	0.27	0.03	0.04	0.13	0.41	0.02	0.15	0.02	0.90	-	0.11	-	0.30	-	0.05	0.15	-0.04	0.75		
SNI level	-	0.79	-	0.30	-0.24	0.47	-	0.61	0.08	0.18	0.06	0.66	0.37	0.65	0.08	0.57	0.26	0.47	0.07	0.58	-	0.94	0.66	-0.18	0.16		
Research with external funding	1.35	1.57	0.11	0.39	2.34	0.93	0.31	0.01	-0.08	0.35	-	0.03	0.82	1.07	1.28	0.10	0.41	0.12	0.92	0.02	0.90	-	0.20	1.30	-0.02	0.88	
Research without funding	-	1.22	-	0.69	0.24	0.73	0.04	0.75	-0.08	0.28	-	0.03	0.79	-	1.29	1.00	-	0.15	-	2.40	0.72	0.35	<0.01	3.43	1.01	0.35	<0.01
Level of Academic Body	0.24	0.55	0.06	0.66	-0.23	0.33	-	0.10	0.07	0.12	0.07	0.59	0.15	0.45	0.04	0.74	0.34	0.32	0.13	0.29	0.06	0.45	0.02	0.90			
Published articles per year	-	0.59	-	0.18	-0.09	0.35	-	0.04	-0.22	0.13	-	0.22	-	0.04	0.48	-	0.01	-	0.29	0.35	-	0.10	0.41	0.01	0.49	<0.01	0.99
R ² (p)	0.28 (0.22)				0.25 (0.32)				0.20 (0.55)				0.18 (0.67)				0.33 (0.09)				0.49 (<0.01)						

Note. Significant values are shown in bold.

Vita

Irene Concepcion Carrillo-Saucedo was born in September 18, 1954 in Ciudad Lerdo Durango, Mexico and raised in Ciudad Juarez, Chihuahua, Mexico. She is the fourth daughter of Victor Carrillo y Maria Elena Saucedo. After graduated from high school and entered to Universidad Autónoma de Ciudad Juarez, she graduated from Social Work Program in 1986. In 1996, she graduated from Escuela Superior de Psicología with a bachelor in Psychology. In the fall of 2000 she received a Master's in Clinical Psychology and Psychotherapy. Irene has been working in multiple settings, as academic in higher education and mental health since 1989, wich have assisted her to gain experience in teaching, research, tutoring, therapy and evaluation. Irene entered the Leadership in Administration and Education doctoral program at UTEP in 2011, and while she is working as faculty at UACJ as full time professor and researcher, she seeks to expand her challenges and apply the acquired knowledge in UACJ.

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