



Systemic high blood pressure associated with psychosocial factors in Mexico: a multidimensional approach

Hipertensión arterial sistémica asociada a factores psicosociales en México: un enfoque multidimensional

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ABSTRACT

High blood pressure (HBP) continues to be one of the most prevalent diseases worldwide. Psychosocial work factors have proven to be a modifiable risk factor related to cardiovascular disease. Here, we discuss how psychosocial factors are related to a negative impact on HBP. Diverse authors consider that excessive workload, low decision-making capacity, and low social support contribute to adverse working elements. These factors have been highlighted due to the COVID-19 pandemic, in which there has been an increased job strain and reduced work/life balance, which were particularly accentuated for women that are home providers and caregivers. The implementation of protective measurements at the institutional and individual levels should be implemented to reduce the negative impact of HBP and, consequently, reduce the burden of cardiovascular risk in all workers.

RESUMEN

La hipertensión arterial (HTA) sigue siendo una de las enfermedades más prevalentes en todo el mundo. Los factores psicosociales del trabajo han demostrado ser un factor de riesgo modificable relacionado con las enfermedades cardiovasculares. Aquí se analiza cómo los factores psicosociales están relacionados con un impacto negativo en la HTA. Diversos autores consideran que la excesiva carga de trabajo, la baja capacidad de decisión y el escaso apoyo social contribuyen a los elementos laborales adversos. Estos factores se han puesto de manifiesto debido a la pandemia de COVID-19, en la que se ha producido un aumento de la tensión laboral y una reducción del equilibrio entre el trabajo y la vida privada, que se acentuaron especialmente en el caso de las mujeres que son proveedoras y cuidadoras del hogar. Es necesario implementar medidas de protección a nivel institucional e individual para reducir el impacto negativo de la HTA y, en consecuencia, reducir la carga de riesgo cardiovascular en todos los trabajadores.

INTRODUCTION

High blood pressure (HBP) continues to be a major cause of premature deaths worldwide. Globally, it has been estimated that approximately 1,400 million people between 30-79 years old lives with HBP. From this population, it has been estimated that 14% is under blood pressure goals. Regardless the decreasing trend of prevalence from the last two decades in high-income countries, it has

been reported that up to 2/3 of all adults living with HBP currently belongs to low-and-middle income countries.¹ This alarming estimation suggest that HBP is a chronic degenerative disease related to low-income and poverty.² Concerning Mexico, recent epidemiological reports have estimated that the prevalence of HBP is high, particularly in borderline states. Results from the 2019 National Health and Nutrition Surveys, revealed that Sonora (24.6%) and Campeche (26.1%) are the most affected

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states, followed by Chihuahua, Coahuila and Veracruz.³ All this evidence suggest that psychosocial factors are of high relevance when studying the epidemiology of HBP, particularly those focused on socioeconomical and working conditions. In this work, we discuss the psychosocial factors are negative to related HBP.

OVERVIEW OF PSYCHOSOCIAL FACTORS MODELS

Psychosocial factors are defined as certain conditions related to working status that could impair the performance and health of individuals. In 2018, it was approved the Mexican Official Norm Number 35 (NOM-035-STPS-2018) which is related to psychosocial risk factors related to working status.⁴ Furthermore, the same document state preventive and control regulations that should be implemented within each Mexican working center. The main framework of psychosocial factors is based on the works published by Karasek in 1979. He based his model on a demand/control aspect based on psychological demands and the power of decisions driven by to improve community. He also mentioned that increased working demands without necessarily accessing to better economic opportunities drive to person towards

an increased risk of health impairments. In 1988, Johnson and Hall include that social support network is a fundamental contributor towards psychosocial factors related to health, making it a tridimensional model (Figure 1).⁵

EVIDENCE RELATED TO HIGH BLOOD PRESSURE

According to recent epidemiological evidence, it has been posed that psychosocial factors could be considered as modifiable cardiovascular risk factors. Evidence from a metaanalysis performed in 2013 by Babu GR et al, shown within case-control and cohort studies a relationship between increased working periods and a significant risk to develop HBP. Nevertheless, the same authors recognize diverse limitations that should warn the interpretation of their results.⁶ Another recent study performed by Faruque et al described a positive relationship of excessive working hours with increased systolic and diastolic blood pressure levels, along with an increased incidence of HBP.⁷ These evidence suggest that psychosocial factors could be a significant barrier to achieve a reduction of cardiovascular diseases within adult population.⁸

In Mexico, it has been mentioned that our country has a significant overburden

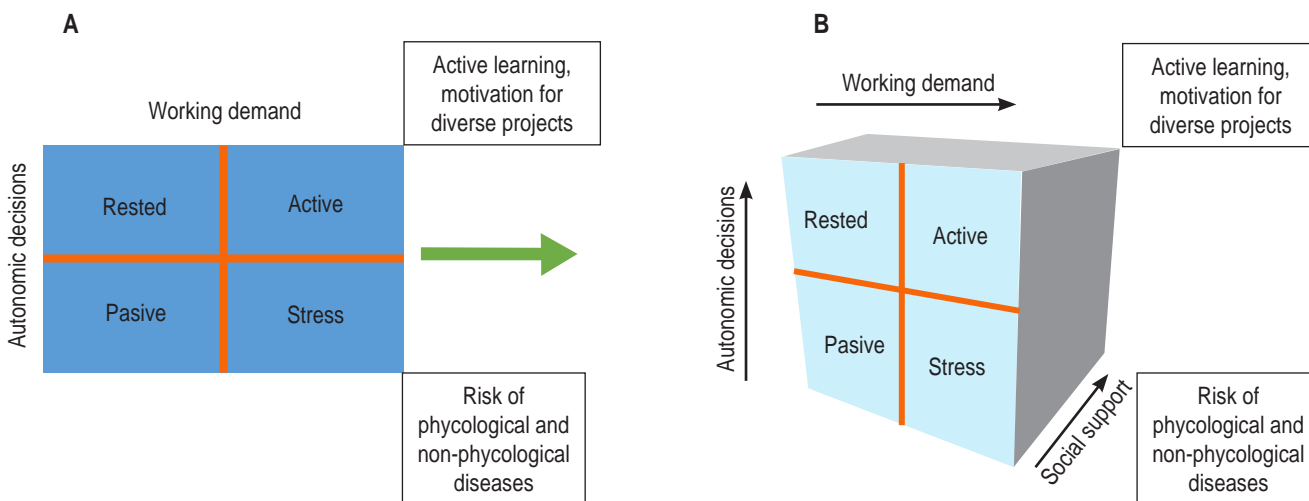


Figure 1: Relationship between psychological demands, control, and social support. Adapted from: Chiang Vega et al.¹⁵

attributable to excessive working hours. Recent reports shown that approximately 80% of the productive economic sector in Mexico works more than 40 hours per week without having sufficient economical remuneration. According to the Organization for Economic Co-operation and Development (OECD), Mexico has been classified as the country with the highest annual working hours (2,124 hrs. per year) but still stands as one of the country with the lowest economical remuneration.⁹

PSYCHOSOCIAL FACTORS, WORK AND SEX DIFFERENCES

Since 1950, subjects with personality trait type A (competitive, highly motivated, ambitious, and aggressive) have increased risk of incident cardiovascular disease. Nevertheless, evidence from the last decade revealed that subjects with personality trait type D (negative affective, inhibition, social reclusion, and introverts) had higher risk for overall cardiovascular complications. This evidence suggests that negative emotional factors and certain personality traits have become of increased relevance within cardiovascular research.¹⁰

Conversely, it has been mentioned that housework was a cardiovascular protective factor. In the past, it was assumed that women who were positioned at workplaces would have an increased cardiovascular risk factors like observed in men. Nowadays, we know that women who have both home and workplace responsibilities are psychosocial related factors that could promote increased health impairment compared to male counterparts.¹¹

PSYCHOSOCIAL FACTORS RELATED TO COVID-19 PANDEMIC

Migration from rural to urban population, as well as structural poverty and less access to health services, are well-documented sociodemographic determinants for the management of HBP. It has been recorded that subjects with economic deficiencies have 70% less antihypertensive treatment for blood pressure compared with people with access to medical services.¹² These structural deficiencies have been accentuated within the COVID-19 pandemic.

The COVID-19 pandemic has been a tagged as a global crisis for healthcare systems, but also represents a loss in economic and health stability for many countries. Furthermore, COVID-19 brought changes in labor dynamics by promoting work-at-home (*home-office*). Nevertheless, one of the biggest challenges has been establishing an appropriate work/life balance while maintaining an adequate productivity. In a study performed by Tejero et al revealed that the most important psychosocial factors related to home-office were: Poor psychological separation from work, decreased transportation to, employers not respecting schedules and holding meetings outside working hours. A second and negative domain was described and was related to the lack of interaction between co-workers as it has been mentioned that relationships within an office is beneficial social support. Overall, the author concluded that *home-office* produced: lower productivity, longer working hours, higher stress, sleep disturbances and less social interaction.¹³

ACTIONS TO REDUCE THE IMPACT OF PSYCHOSOCIAL FACTORS AT WORK AND IMPROVE QUALITY OF LIFE

The actions to improve working conditions and have demonstrated to have the greatest impact are those implemented at an institutional level (organizational level, middle and senior management) compared to those implemented at individual levels.¹⁴ The Mexican Official Norm Number 35 mentions that within each institutional, the following strategies should be implemented: prevention of psychosocial risk factors, prevention of workplace violence and promotion of a favorable organizational environment. At an individual level, the factors that have the greatest impact are related to a positive leadership, sense of belonging to the company, psychological detachment from work, stable working hours and rewards within the work.⁴

CONCLUSION

Mexico is the country with the longest working hours and the lowest monetary compensation.

A job with flexibility, decision-making capacity of the employees, as well as rewards for a better activity performed are key tools not only for better productivity and work performance, but also reduce psychosocial risk factors for HBP and cardiovascular complications. It is important to implement these policies within middle and upper institutional management, which will improve health and quality of life of all workers. Sociodemographic inequalities and gender gaps are highly established in our country. It is important to implement specific measures to reduce double workload in women who are mothers to further reduce their cardiovascular risk.

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