

BIBLIOGRAPHIC INFORMATION SYSTEM

Journal Full Title: Journal of Biomedical Research & Environmental Sciences

Journal NLM Abbreviation: J Biomed Res Environ Sci

Journal Website Link: <https://www.jelsciences.com>

Journal ISSN: 2766-2276

Category: Multidisciplinary

Subject Areas: Medicine Group, Biology Group, General, Environmental Sciences

Topics Summation: 128

Issue Regularity: Monthly

Review Process type: Double Blind

Time to Publication: 7-14 Days

Indexing catalog: [Visit here](#)

Publication fee catalog: [Visit here](#)

DOI: 10.37871 ([CrossRef](#))

Plagiarism detection software: [iThenticate](#)

Managing entity: USA

Language: English

Research work collecting capability: Worldwide

Organized by: [SciRes Literature LLC](#)

License: Open Access by Journal of Biomedical Research & Environmental Sciences is licensed under a Creative Commons Attribution 4.0 International License. Based on a work at SciRes Literature LLC.

Manuscript should be submitted in Word Document (.doc or .docx) through **Online Submission** form or can be mailed to support@jelsciences.com

Vision

Journal of Biomedical Research & Environmental Sciences main aim is to enhance the importance of science and technology to the scientific community and also to provide an equal opportunity to seek and share ideas to all our researchers and scientists without any barriers to develop their career and helping in their development of discovering the world.

SHORT COMMUNICATION

Psychological Factors of Metabolic Syndrome

Ali Delshad Noghabi*

PhD in Health Psychology, Social Development and Health Promotion Research Center, Gonabad University of Medical Sciences, Gonabad, Iran

ABSTRACT

Several factors are involved in the etiology of metabolic syndrome, the most important of which are insulin resistance, obesity (especially abdominal obesity), lipid abnormalities, impaired glucose tolerance, hypertension, pre-inflammatory status, genetic factors, unhealthy lifestyle, trend Rapid urbanization, nutritional factors, inactivity, smoking and hookah smoking, social, economic and cultural factors, level of education, psychosocial stresses and environmental pollution. But psychological factors such as meta-cognitive beliefs, life orientation (optimism, pessimism) and positive and negative emotions, Hypothalamic-Pituitary-Adrenal (HPA) axis activity, type D personality, depression and anxiety also play a role in causing it.

INTRODUCTION

Metabolic syndrome is a complex disorder that imposes high socioeconomic costs on societies and has a global epidemic. The prevalence of this disorder is increasing even in children and young adults and its global burden is worrying [1].

DISCUSSION

Metabolic syndrome is one of the largest and most serious potential public health problems worldwide due to urbanization, excess energy consumption, increased obesity, and sedentary lifestyle. Metabolic syndrome doubles the risk of type 2 diabetes and doubles the risk of cardiovascular disease in the next 5 to 10 years. In addition, patients with metabolic syndrome are 2 to 4 times more likely to have a stroke, 3 to 4 times more likely to have a heart attack, and 2 times more likely to die from the event, regardless of a previous history of cardiovascular disease. Increases those without syndrome. It is also associated with other disorders, including osteoarthritis, some cancers, non-alcoholic fatty liver disease, hyperuricemia, polycystic ovary syndrome, and obstructive sleep apnea. In addition, it imposes heavy costs on the health care system and generally reduces the quality of life. But psychological factors also play a role in its creation. Recent research has shown that some psychological and social factors play a large role in the onset and progression of metabolic syndrome, which increases the risk of cardiovascular disease and type 2 diabetes [2].

Meta-cognitive beliefs

One of the important psychological factors in causing depression and anxiety and thus affecting the severity of metabolic syndrome is metacognitive beliefs. Metacognition is a multifaceted concept that includes knowledge, beliefs, processes, and strategies that evaluate, monitor, or control cognition. In recent years, metacognition has been studied as the basis of many cognitive disorders. In general,

*Corresponding author

Ali Delshad Noghabi, PhD in Health Psychology, Social Development and Health Promotion Research Center, Gonabad University of Medical Sciences, Gonabad, Iran

E-mail: ali_delshad2000@yahoo.com

DOI: 10.37871/jbres1290

Submitted: 27 July 2021

Accepted: 31 July 2021

Published: 31 July 2021

Copyright: © 2021 Noghabi AD. Distributed under Creative Commons CC-BY 4.0

OPEN ACCESS

MEDICINE GROUP

DEPRESSION | PSYCHIATRY | MENTAL HEALTH

VOLUME: 2 ISSUE: 7



there are three types of meta-cognition: meta-cognitive knowledge, meta-cognitive experiences and meta-cognitive control strategies. Meta-cognitive knowledge includes a person's beliefs about recognizing positive and negative beliefs about emotions. Metacognitive experiences are the evaluation of psychological emotions and judgments about the state of cognition, and metacognitive control strategies are the answers given to controlling cognitive activities. Positive and negative meta-cognitive beliefs are among the most important factors underlying and perpetuating normal and abnormal behaviors. Meta-cognitive beliefs are considered as an important factor in the development and persistence of various mental disorders, especially anxiety disorders and depression. Higher meta-cognitive beliefs cause health anxiety and fear of complications caused by the disease itself causes anxiety and depression caused by the disease and consequently the factors forming the metabolic syndrome appear [3].

Life orientation (optimism, pessimism) and positive and negative emotions

Optimism, pessimism and positive and negative emotions, which are defined as cognitive and emotional structures and components of psychological well-being, affect the functioning of the immune system. Optimism is associated with the effective functioning of neurotransmitters including serotonin and noradrenaline. Research shows that optimism and positive emotions are associated with reduced metabolic risk factors. Optimism and positive emotions are associated with a reduction in the risk factors for metabolic syndrome, and optimism in coronary heart disease patients with a diagnosis of metabolic syndrome is significantly lower than in patients without this syndrome. The trait of "positive emotion" is associated with the level of pro-inflammatory cytokines (IL-6), so that high positive emotion in a person leads to a decrease in inflammatory activity and further health. Negative emotions lead to poorer health outcomes through increased inflammation (immune response). Emotions are an essential part of the dynamic system of human personality. People with metabolic syndrome who have higher negative emotions may have low health behaviors such as smoking or even using drugs to relieve pain caused by illness, alcohol consumption, poor diet, sedentary lifestyle and sleep disorders. Provide for metabolic syndrome and the risk factors of metabolic syndrome appear in these patients. Meanwhile, patients who have more well-being and positive psychological factors adopt optimal health behaviors that play an important role in reducing metabolic syndrome [4].

Hypothalamic-Pituitary-Adrenal (HPA) axis activity

This axis is considered as the axis of the effect of stress on health, which increases with increasing HPA eradication activity, inflammatory indices. In fact, HPA-based disorder is associated with many risk factors for cardiovascular

disease, such as high blood pressure, high cholesterol, high triglycerides, metabolic syndrome components, and high heart rate. Chronic stress, depression, and health-related behaviors are both acute and risk factors for cardiovascular disease, and the combination of these factors directly leads to the manifestation of metabolic syndrome components in adults [5]. The most important biological pathway in which negative and positive psychological factors may increase or decrease the risk of metabolic syndrome is the activity of the hypothalamic-pituitary-adrenal axis, which is considered as the axis of the effect of stress on health. With increasing HPA axis activity, inflammatory markers also increase, which is associated with a variety of metabolic abnormalities contributing to metabolic syndrome such as obesity, hyperlipidemia, and hyperglycemia [6].

Type D personality

Type D personality or distress personality is two relatively stable characteristics, namely social inhibition and negative affect. Negative Impact Tendency to strong negative emotions such as arousal, anger, anxiety and hostility as a negative impact and social inhibition is the tendency to avoid contact with others and to show negative emotions and behaviors. Studies have shown that personality D is associated with CVD and an increased risk of death. People with type D personality traits are four times more likely to develop ischemic heart disease than those with low personality traits. Social inhibition plays an important role in increasing the risk of CVD. In people who control their emotions, which are mainly characterized by the secretion of stress hormones, mainly catecholamine and cortisol, it causes high blood pressure and heart rate. Character D can be one of the causes of disease by physiological mechanisms and behaviors related to unhealthy lifestyle and causes worsening and disruption of metabolic syndrome components and increases the risk of cardiovascular disease [7].

Depression and anxiety

Metabolic syndrome, in addition to biological causes, may have other causes in the form of a combination of psychological problems such as depression, anxiety, psychological distress, and poor quality of life [8].

CONCLUSION

Therefore, a person with metabolic syndrome should be recognized as a patient with biological, psychological and environmental risk factors and be screened for all of them.

References

1. Kassi E, Pervanidou P, Kaltsas G, Chrousos G. Metabolic syndrome: definitions and controversies. *BMC Med.* 2011 May 5;9:48. doi: 10.1186/1741-7015-9-48. PMID: 21542944; PMCID: PMC3115896.
2. Lorenzo C, Williams K, Hunt KJ, Haffner SM. The national cholesterol education program - Adult treatment panel iii, international diabetes federation, and world health organization definitions of the metabolic syndrome as predictors of incident

cardiovascular disease and diabetes. *Diabetes Care*. 2007 Jan;30(1):8-13. doi: 10.2337/dc06-1414. PMID: 17192325.

3. Fatemi M, Davoodi A. Determination of differences in meta-cognitive beliefs, life-Orientation, positive and negative affection between rheumatoid arthritis patients with and without metabolic syndrome and normal individuals. *Sadra Medical Journal*. 2020;8:123-138. <https://tinyurl.com/nkv9w7ja>
4. Mohammadi N, Aghayosefi A, Alipour A, Nikrahan G, Sadeghi M, Roohafza H. The comparison of negative and positive psychological factors in patients with coronary heart disease with and without metabolic syndrome. *J Res Behav Sci*. 2018;15(4):480-487. <https://tinyurl.com/4hb46a8d>
5. Rosmond R, Björntorp P. The hypothalamic-pituitary-adrenal axis activity as a predictor of cardiovascular disease, type 2 diabetes and stroke. *J Intern Med*. 2000 Feb;247(2):188-97. doi: 10.1046/j.1365-2796.2000.00603.x. PMID: 10692081.

6. Cohen BE, Panguluri P, Na B, Whooley MA. Psychological risk factors and the metabolic syndrome in patients with coronary heart disease: findings from the Heart and Soul Study. *Psychiatry research*. 2010 Jan 30;175:133-7.
7. Bagherian-Sararoudi R, Maracy M, Sanei H, Shiri M. Relationship between type D personality subscales, coping strategies, illness perception, and fatigue in myocardial infarction patients using structural equation modeling, in isfahan, iran 2016-17. *Iranian Journal of Psychiatry and Behavioral Sciences*. 2019;13(4). <https://tinyurl.com/thy7ks>
8. Roohafza H, Sadeghi M, Talaei M, Pourmoghaddas Z, Sarrafzadegan N. Psychological status and quality of life in relation to the metabolic syndrome: Isfahan Cohort Study. *Int J Endocrinol*. 2012;2012:380902. doi: 10.1155/2012/380902. Epub 2012 May 20. PMID: 22675350; PMCID: PMC3363984.

How to cite this article: Noghahi AD. Psychological Factors of Metabolic Syndrome. *J Biomed Res Environ Sci*. 2021 July 31; 2(7): 641-643. doi: 10.37871/jbres1290, Article ID: JBRES1290, Available at: <https://www.jelsciences.com/articles/jbres1290.pdf>