



Review on Understanding the interplay between Psychosocial factors and Cardiovascular Health

Bhavesh Dashora^{1*}, Md. Zulphakar Ali², Himani Tiwari³ and Kaushal Kishor Chandrul⁴

1, Student of B. Pharm. 4th Year; 2, Assistant Professor; 3, HOD; 4, Principal

Department of Pharmacy, Mewar University, Gangrar Chittorgarh, (R.J.) - India

Article info

Received: 18/04/2024

Revised: 19/05/2024

Accepted: 20/06/2024

© IJPLS

www.ijplsjournal.com

Abstract

This review is going to explore a complex interplay between psychosocial factors and the health of the cardiovascular system, which is a modern topic covered by the recent research literature, talking about various psychological factors that have an obvious effect on cardiovascular matters. From this, psychosocial factors span the whole broad spectrum, with variables like stress, depression, anxiety, social support and quality of life, which have been demonstrated to have a strong effect on modifying the outcomes of the cardiovascular system included in this.

The COVID-19 outbreak has indirectly highlighted a dreaded fact that infectious diseases affect the cardiovascular system in a very hard way. Numerous clinical researches have shown severe cardiovascular complications in SARS-CoV-2 infected patients, such as cardiac damage, myocardial injury, left ventricular systolic dysfunction, different types of rhythms and thromboembolic situations. Correct interpretation and handling of the cardiovascular effects are vital steps toward the assessment, risking, discretion and treatment in COVID-19 cases.

In addition there is the concept of inflammatory ageing, defined as chronic inflammation which attends old age and has become a determining influence on the way cardiovascular diseases are manifested. Inflammation helps with atherosclerosis, hypertension, as well as adverse cardiac remodelling, thus, employing the anti-inflammatory pathways in the processes of treatment is truly indispensable for cardiovascular care.

Key words: Cardiovascular health, COVID-19, Inflammageing, Quality of life

Introduction

The main part starts by setting the stage by emphasising that the world is going through growing health problems related to cardiovascular disease, and in particular, we need to understand all the factors that influence the cardiovascular systems' health. The first sentence highlights the primary themes of the content, which include coronavirus effects, inflammageing and psychosocial properties on cardiovascular health. Amidst the COVID-19 pandemic that has become

a worldwide hurdle, discerning the effects of the novel disease on the cardiovascular system is a significant task. Moreover, inflammatory ageing theory adds one more component to the equation of correlation between chronic inflammation and age and cardiovascular diseases.

***Corresponding Author**

Additionally, not only do psychosocial factors such as stress, depression, and quality of life play a significant role in cardiovascular outcomes, but these components are ignored as well in the traditional medical approach most of the time. As is the main aim, the article examines the interrelated matters and tries to provide a comprehensive understanding of cardiovascular health and the opportunities for risk assessment, diagnosis, and treatment strategies that are better fitted.

Literature

This part of the paper covers the literature review of cardiovascular health and the manifestation of coronaviruses in this context. The review also discusses the psychological factors shaping cardiovascular outcomes in humans.

The article by Madjid *et al.* (2020) provided new research knowledge about the probable effect of coronaviruses on the circulatory system, which includes the heart illness known as COVID-19. It is impossible to explain the way COVID-19 causes viral pneumonia with multiple extrapulmonary manifestations, focusing primarily are those with pre-existing cardiovascular pathologies. The paper, which underlines that acute cardiac injury is common among serious COVID-19 cases, as well as the strong association between the two, further reveals that this is one of the key outcomes that lead to mortality. Conversely, information derived from previous coronavirus outbreaks like SARS and MERS provides a comparison that which the causes of similar cardiovascular diseases can be known[1].

Guzik *et al.* (2020) offer an analysis of the cardiovascular consequences of the COVID-19 pandemic, done by tackling its assessment risks, diagnosis, and treatment options. The review strongly underlined the increased risk of a bad outcome, including high infection and even death among those with pre-existing heart disease and thus the need for skilled and adapted management strategies. It deals differently with the whole spectrum of risks that affect the cardiovascular system, from arrhythmias to myocarditis, thromboembolic events and others. Moreover, the review addresses problems with using drugs like ACE inhibitors and ARBs and addresses the

controversies of these drug recommendations during the COVID-19 invader[2].

Additionally, we see that another literature review deals with the cardiovascular complications of the novel coronavirus and emphasizes on particular impact and the heart and vascular system. It enlists indications like myocardial injury, myocarditis, stroke, heart failure, rhythm disorders and venous thrombosis. The review describes the intricacy of cardiovascular problems in COVID-19 patients and the use of multidisciplinary approaches. Also, it finds out that the findings are drawn from various studies[3].

The high incidence rate of inflammaging as a unanimously accepted factor for cardiovascular diseases is brought to light as Liu *et al.* (2020) depicted age-related cardiovascular diseases. The review will focus on the importance and function of the senescence-associated secretory phenotype (SASP) in the genesis and condition of chronic inflammation, as well as its significance for those with cardiovascular illness. It portrays the causal routes through which inflammation results in disorders related to the heart and vessels, such as atherosclerosis and hypertension. This pinpoints the therapeutic significance of SASP and associated pathways[4].

Clinical applications and directions for approach in future

Cardiovascular health and psychosocial factors intersections have key clinical implications and give a basis for further academic research and the creation of different approaches. Knowing how these components affect each other is vital to making sure the population receives high-quality medical care, and the cardiovascular system improves.

Clinical Implications

Tailored Risk Assessment and Management:

The process of including psychological tests as part of a general cardiovascular risk assessment allows the healthcare provider to have a broader glimpse into the health condition of the patient in question. Doctors and healthcare workers can notice patients who are likely to suffer from cardiovascular events earlier due to stress, depression and lack of any social support.

Customised management operations can be after that enacted which could help physically and mentally to manage the factors that deteriorate the cardiovascular system[5].

Multidisciplinary Care Teams: Considering the broad interactivity of psychosocial elements and heart health, multidisciplinary teams concerning cardiologists, psychologists, social workers, and health care specialists in general are of vital importance. Collaborative efforts help in giving thorough and individualised assessments that are tailored keeping in mind individual problems of patients. The application of this approach can guarantee that psychosocial aspects are addressed in parallel apart from classical cardiovascular risk factors; hence patients are able to attain better clinical results[6].

Psychosocial Interventions: Introducing psychosocial interventions into the principles of cardiovascular treatment can reduce the resolution of many of the psychosocial problems like stress, depression and anxiety in cardiovascular health. Cognitive-behavioural therapy, mindfulness-based interventions, and stress management techniques are becoming more efficient in dealing with mental distress and improving patient's cardiovascular health conditions. Adding these interventions into rehab programs or outpatient clinics for cardiac patients would help with their mental and cardiovascular recovery[7].

Patient Education and Empowerment: Educating patients that their psychosocial factors do influence their health will lead to their taking an active role in their treatment. Presenting facts on stress reduction methods, coping mechanisms, as well as the value of social support networks fosters self-treating health habits and getting help when needed. By enhancing patient affiliation to take care of psychosocial matters, compliance with treatment may be enhanced and, therefore, cardiovascular health resilience[8].

Future Directions

Longitudinal Studies: Long-term research studies are required to fully address the phenomenon of the cumulative influence of psychosocial factors on cardiovascular health

outcomes in the future. Long-term patient monitoring enables researchers to monitor the extent of stress, depression, as well as other psychosocial factors that impact the pacing of a disease, its recurrence and mortality. The data from the longitudinal studies helps plan for preventive interventions directed to reduce the impact and improve long-term health, especially in cardiovascular cases[9].

Biopsychosocial Models of Care: Beyond the biomedical concepts, the psychosocial model of medical care that looks at these factors of life as they dynamically interact and affect health processes and outcomes was introduced. For the development of these methods, more research is needed, and these improved versions should find their use in clinical practices. The most effective way of managing cardiovascular disease is to shift to a multipronged approach to treating cardiovascular disease while putting the interest of the patient at the heart of the endeavour[10].

Technology-Based Interventions: The technological era has brought about increased usage of digital health instruments. Consequently significant attention is being paid to harnessing these devices to offer psychosocial interventions from remote locations. By mobile apps, devices (wearable) and telehealth platforms, scalable and accessible solutions availability is ensured for psychological support, stress level control and healthy behaviours promotion. The next stage of research can be the study of the effectiveness and feasibility of the technology-based interventions that are targeted to improve psychosocial welfare and cardiovascular wellness[11].

Conclusion

However, this literature review demonstrates many integral aspects at the crossroads of cardiovascular health and psychosocial factors, revealing a phenomenon where psychological health and heart health tend to have close correlations. Primarily, psychosocial factors are key to cardiovascular health prognosis and development as stress, depression, anxiety and social support impact the rate of disease much more than, for example, the measures of physical activity. Studies keep showing time and again

how psychosocial stressors are connected with higher risks for cardiovascular problems; therefore, efforts should be devoted to better risk assessment and management.

While the COVID-19 pandemic puts the spotlight on how infectious diseases and cardiovascular health are connected, it also emphasises strategies for managing the complex relationships between the two. The database is growing and shows that COVID-19 can explain the appearance of diverse types of cardiovascular ailments, such as myocardial injury, myocarditis, heart failure, dysrhythmias, and thromboembolic events. The effects reviewed below should be properly evaluated for risk assessment, diagnoses, and treatment formulation in patients with associated cardiovascular diseases, especially those with previously diagnosed cardiovascular conditions. Moreover, the concept of inflaming, which is linked with chronic inflammation, manifests more often with aging and has also been revealed as an integral part of the processes leading to cardiovascular diseases. Inflammation is the main process in the formation of atherosclerosis, hypertension and adverse cardiomyremodelling, which is why focusing on inflammatory pathways in therapeutic management is critical. Furthermore, the evaluation of the quality of life in cardiovascular health problems makes clear that following acute myocardial infarction, the psychological condition can significantly deteriorate, particularly in women, and the outcomes are different for different types of event

References

1. M. Madjid, P. Safavi-Naeini, S. D. Solomon, and O. Vardeny, "Potential Effects of Coronaviruses on the Cardiovascular System: A Review," *JAMA Cardiology*, vol. 5, no. 7, Mar. 2020, doi: <https://doi.org/10.1001/jamacardio.2020.1286>.
2. T. J. Guzik *et al.*, "COVID-19 and the cardiovascular system: implications for risk assessment, diagnosis, and treatment options," *Cardiovascular Research*, vol. 116, no. 10, Apr. 2020, doi: <https://doi.org/10.1093/cvr/cvaa106>.
3. B. Long, W. J. Brady, A. Koyfman, and M. Gottlieb, "Cardiovascular complications in COVID-19," *The American Journal of Emergency Medicine*, vol. 38, no. 7, Apr. 2020, doi: <https://doi.org/10.1016/j.ajem.2020.04.048>.
4. D. Liu *et al.*, "Inflammation in the cardiovascular system: mechanisms, emerging targets, and novel therapeutic strategies," *Clinical Science*, vol. 134, no. 17, pp. 2243–2262, Sep. 2020, doi: <https://doi.org/10.1042/cs20191213>.
5. Y. S. Totlibayevich, K. M. Alisherovna, T. D. Rustamovich, and G. X. Xudoyberdiyevich, "Quality of Life in the Pathology of the Cardiovascular System," *MiastoPrzyszłości*, vol. 33, pp. 222–228, Mar. 2023, Accessed: Apr. 28, 2024. [Online]. Available: <http://miastoprzyszlosci.com.pl/index.php/mp/article/view/1220>
6. M. J. Joyner and P. B. Dominelli, "Central Cardiovascular System Limits to Aerobic Capacity," *Experimental Physiology*, vol. 106, no. 12, Mar. 2020, doi: <https://doi.org/10.1113/ep088187>.
7. N. A. S. MohdAzmi *et al.*, "Cortisol on Circadian Rhythm and Its Effect on Cardiovascular System," *International Journal of Environmental Research and Public Health*, vol. 18, no. 2, p. 676, Jan. 2021, doi: <https://doi.org/10.3390/ijerph18020676>.
8. A. Kicman and M. Toczek, "The Effects of Cannabidiol, a Non-Intoxicating Compound of Cannabis, on the Cardiovascular System in Health and Disease," *International Journal of Molecular Sciences*, vol. 21, no. 18, p. 6740, Sep. 2020, doi: <https://doi.org/10.3390/ijms21186740>.
9. Ewelina Józefczuk, T. J. Guzik, and Mateusz Siedlinski, "Significance of sphingosine-1-phosphate in cardiovascular physiology and pathology," *Pharmacological Research*, vol. 156, pp. 104793–104793, Jun. 2020, doi:

- <https://doi.org/10.1016/j.phrs.2020.10479>
3.
10. A. Stefanovska, "Physics of the human cardiovascular system," *Contemporary Physics*, vol. 40, no. 1, pp. 31–55, Jan. 1999, doi:
<https://doi.org/10.1080/001075199181693>
11. M. J. Banezet *al.*, "A systemic review on the antioxidant and anti-inflammatory effects of resveratrol, curcumin, and dietary nitric oxide supplementation on human cardiovascular health," *Nutrition Research*, vol. 78, pp. 11–26, Jun. 2020, doi:
<https://doi.org/10.1016/j.nutres.2020.03.002>.

Cite this article as:

Dashora B., Ali Z. Md., Tiwari H. and Chandrul K. K. (2024). Review on Understanding the interplay between Psychosocial factors and Cardiovascular Health. *Int. J. of Pharm. & Life Sci.*, 15(6): 1-5.

Source of Support: Nil

Conflict of Interest: Not declared

For reprints contact: ijplsjournal@gmail.com