The Role of Indian Music on Hematological Parameters in Women with Moderate Depression

Ruma CHAKRAVARTY, Neena MEHTA, Dharam VIR, and Pankaj KAUL

Abstract

Depression is a mental health condition that affects the emotional states, thinking patterns, behaviors and actions of people suffering from it. Depression is characterized by anhedonia, sadness, loss of interest, anger, stress among other aspects. Various psychophysiological, hematological and other parameters contribute to depression severity. Application of Indian music has growing evidence for effectiveness in mental health conditions. However, very few studies have been conducted to investigate the effectiveness of Indian music on the hematological parameters associated with depression. The purpose of the present work is to explore the effectiveness of Indian music on the hematological factors associated with moderate depression in women living in a destitute home in India. The research objects for this investigation included a set of methods to identify the subjects, study design, methodology, data collection and analysis. The research was designed as paired samples pre- and post-test study in mixed mode sampling (convenience and randomized) to record pre- and post-observations of music intervention from the blood test reports, the 17-item Hamilton depression rating scale (HDRS-17) and analysis done through PSPP software. The study revealed significant changes in blood parameters and depression severity. The study findings suggest that suitably designed Indian music interventions may be helpful for stabilizing hematological parameters in women having moderate depression that eventually help reduce their depression severity.

Keywords: Indian music, depression, hematological parameters, active music intervention, passive music listening

* This article, written about music therapy, uses APA format.

Ruma CHAKRAVARTY, Neena MEHTA, Dharam VIR, and Pankaj KAUL

印度音樂對中度憂鬱症女性血液指數所發揮的作用

魯瑪‧查克拉瓦蒂、尼娜‧梅塔、達蘭‧維爾、潘卡傑‧考爾

摘　要

　　憂鬱症是一種心理健康疾病，會影響患者的情緒狀態、思維模式、行為和行動。憂鬱症有許多相關病兆，如：失樂症、悲傷、缺乏興致、憤怒、壓力等。越來越多的證據指出，運用印度音樂可改善多種心理健康狀況。然而，調查印度音樂可否改善與憂鬱症相關之血液指數的研究很少。本論文旨在探索印度音樂對生活在貧困家庭中且患有中度憂鬱症之印度婦女的效度。本次調查的研究課題包括：一套確定受試者的方法、研究設計、方法論、數據收集和分析。研究設計為混合抽樣模式（任意和隨機抽樣）的測試前和測試後配對樣本研究，從血液測試報告、漢密爾頓 17 項憂鬱量表（HDRS-17）中收集音樂介入前後之指數異動，並使用 PSPP 軟體進行分析。研究揭示了音樂介入前後，血液指數和憂鬱症症狀存在顯著變化。研究結果顯示，經過適當設計之印度音樂的介入，可能有助於穩定患有中度憂鬱症女性之血液指數，最終幫助她們降低憂鬱症的症狀。

關鍵詞：印度音樂、憂鬱症、血液指數、積極的音樂介入、被動聽音樂

*本篇文章為音樂治療領域，採用 APA 格式。

References

Beydoun, M. A., Beydoun, H. A., Dore, G. A., Canas, J.-A., Fanelli-Kuczmarski, M. T., Evans, M. K., & Zonderman, A. B. (2016). White blood cell inflammatory markers are associated with depressive symptoms in a longitudinal study of urban adults. *Translational Psychiatry, 6*, e895. https://doi.org/10.1038/tp.2016.180

Chakravarty, R. (2019). *Music therapy with Indian music (Essentials & sources)* (Vol. 1). Notion Press.

Chakravarty, R. (2023). *Music therapy with Indian music (Essentials & sources)* (Vol. 2). Notion Press.

Dai, M., Wei, Q., Zhang, Y., Fang, C., Qu, P., & Cao, L. (2021). Predictive value of red blood cell distribution width in poststroke depression. *Computational and Mathematical Methods in Medicine, 2021*, 8361504. https://doi.org/10.1155/2021/8361504

Dean, L. (2005). *Blood groups and red cell antigens* [Internet]. National Center for Biotechnology Information (US). https://www.ncbi.nlm.nih.gov/books/NBK2261/

Feng, K., Shen, C.-Y., Ma, X.-Y., Chen, G.-F., Zhang, M.-L., Xu, B., Liu, X.-M., Sun, J.-J., Zhang, X.-Q., Liu, P.-Z., & Ju, Y. (2019). Effects of music therapy on major depressive disorder: A study of prefrontal hemodynamic functions using fNIRS. *Psychiatry Research, 275*, 86-93. https://doi.org/10.1016/j.psychres.2019.03.015

Herbert, T. B., & Cohen, S. (1993). Depression and immunity: A meta-analytic review. *Psychological Bulletin, 113*(3), 472-486. https://doi.org/10.1037/0033-2909.113.3.472

Hidese, S., Saito, K., Asano, S., & Kunugi, H. (2018). Association between iron-deficiency anemia and depression: A web-based Japanese investigation. *Psychiatry and Clinical Neurosciences, 72*(7), 513-521. https://doi.org/10.1111/pcn.12656

Horden, P. (2000). Musical solutions: Past and present in music therapy. In P. Horden, (Ed.), *Music as medicine: The history of music therapy since antiquity* (pp. 4-42). Ashgate Publishing.

Ikeuchi, M. (2022). Effects of music on physiological and biochemical markers in patients with a mood disorder. *Japanese Journal of Complementary and Alternative Medicine, 19*(2), 65-74. https://doi.org/10.1625/jcam.19.65

May, H. T., Anderson, J. L., Muhlestein, J. B., Bair, T. L., Knight, S., & Horne, B. D. (2013). Abstract 11979: Red cell distribution width and depression among patients undergoing angiography. *Circulation, 128*(suppl. 22), A11979.

Murphy, D., Gardner, R., Greden, J. F., & Carroll, B. J. (1987). Lymphocyte numbers in endogenous depression. *Psychological Medicine, 17*(2), 381-385. https://doi. org/10.1017/S0033291700024934

National Institute of Mental Health. (2024). *Depression*. Retrieved July 14, 2024, from https://www.nimh.nih.gov/health/topics/depression

National Library of Medicine. (2024). *RDW (Red cell distribution width)*. MedlinePlus. Retrieved March 24, 2024, from https://medlineplus.gov/lab-tests/rdw-red-cell-distribution-width

Shafiee, M., Tayefi, M., Hassanian, S. M., Ghaneifar, Z., Parizadeh, M. R., Avan, A., Rahmani, F., Khorasanchi, Z., Azarpajouh, M. R., Safarian, H., Moohebati, M., Heidari-Bakavoli, A., Esmaeili, H., Nematy, M., Safarian, M., Ebrahimi, M., Ferns, G. A., Mokhber, N., & Ghayour-Mobarhan, M. (2017). Depression and anxiety symptoms are associated with white blood cell count and red cell distribution width: A sex-stratified analysis in a population-based study. *Psychoneuroendocrinology, 84*, 101-108. https://doi.org/10.1016/j.psyneuen.2 017.06.021

Vulser, H., Wiernik, E., Hoertel, N., Thomas, F., Pannier, B., Czernichow, S., Hanon, O., Simon, T., Simon, J.-M., Danchin, N., Limosin, F., & Lemogne, C. (2016). Association between depression and anemia in otherwise healthy adults. *Acta Psychiatrica Scandinavica, 134*(2), 150-160. https://doi.org/10.1111/acps.12595

Ruma CHAKRAVARTY is a PhD candidate at the School of Allied Health Sciences, Rayat Bahra University, Mohali, Punjab, India. Her research interest includes Indian music application for health promotion of the communities living in distress. She also takes interest in the research for application of healing sound therapy.

魯瑪‧查克拉瓦蒂是印度拉雅特巴拉大學健康照護科學學院的博士候選人。研究領域包括印度音樂在促進貧困社區健康方面的應用。她也從事療癒聲音療法的研究。

Neena MEHTA is Professor and HOD Biochemistry, Rayat Bahra University, Mohali, Punjab, India. Her research interests include applied music for common man's health benefit as well as for psychological empowerment of women and underprivileged children. Allergies/hypersensitivities are also her field of interest.

尼娜‧梅塔是印度拉雅特巴拉大學生物化學系教授兼系主任。研究領域包括對普通人健康有益的應用音樂，以及婦女和貧困兒童的心理賦權。她也從事過敏症相關研究。

Dharam VIR is assistant professor at the Department of ENT, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India. His research interests include music therapy for health promotion of people having speech and hearing disorders.

達蘭‧維爾是印度醫學教育研究院研究所（PGIMER）耳鼻喉科學系的助理教授。研究領域包括與促進語言和聽力障礙患者健康有關的音樂治療。

Pankaj KAUL is Professor and Dean at the School of Allied Health Sciences, Rayat Bahra University, Mohali, Punjab, India. His main research fields are medical microbiology and rehabilitation sciences.

潘卡傑‧考爾是印度拉雅特巴拉大學健康照護科學學院教授兼院長。主要研究領域為醫用微生物學和復健科學。