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# Stress Monitoring Device and its Future Direction

[Amid A.<sup>a</sup>](#) ; [Mahpodz Z.A.<sup>b</sup>](#); [Abdullah A.<sup>c</sup>](#)[Save all to author list](#)<sup>a</sup> International Institute for Halal Research and Training (INHART), International Islamic University Malaysia (IIUM), Malaysia<sup>b</sup> Department of Biotechnology Engineering, Kulliyah of Engineering, International Islamic University Malaysia, Malaysia<sup>c</sup> Department of Basic Medical Sciences, International Islamic University Malaysia, Malaysia[View PDF](#) [Full text options](#) [Export](#)**Abstract**

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**Abstract**

Stress and mental health have become a global concern as a result of the COVID-19 pandemic. This review highlights the technologies applied to stress monitoring with up-to-date literature on psychological and behavioural evaluation for stress detection. The working principle and potential of these stress identifiers, particularly physiological signals are explored. Researchers have been directing their interest in producing reliable and wearable devices to detect and prevent stress and panic attacks. The breakthrough of biochemical-near-infrared stress monitoring devices will facilitate medical practitioners in the early detection of stress and panic attacks. The review seeks to explore the types of methods used to detect stress as well as the pros and cons of the available technology while providing a new solution for future implications of stress monitoring detection devices © 2023, IIUM Medical Journal Malaysia. All Rights Reserved.

**Author keywords**

biochemical; cortisol; near-infrared; wearable device

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Momeni, N. , Valdés, A.A. , Rodrigues, J. (2022) *IEEE Transactions on Biomedical Engineering*

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- 
- 1 Golgouneh, A., Tarvirdizadeh, B.  
Fabrication of a portable device for stress monitoring using wearable sensors and soft computing algorithms  
  
(2020) *Neural Computing and Applications*, 32 (11), pp. 7515-7537. Cited 25 times.  
<http://link.springer.com/journal/521>  
doi: 10.1007/s00521-019-04278-7  
  
[View at Publisher](#)
- 
- 2 Parlak, O.  
Portable and wearable real-time stress monitoring: A critical review  
  
(2021) *Sensors and Actuators Reports*, 3, art. no. 100036. Cited 24 times.  
<https://www.journals.elsevier.com/sensors-and-actuators-reports>  
doi: 10.1016/j.snr.2021.100036  
  
[View at Publisher](#)
- 
- 3 Al'Absi, M., Flaten, M.A.  
The Neuroscience of Pain, Stress, and Emotion: Psychological and Clinical Implications  
  
(2016) *The Neuroscience of Pain, Stress, and Emotion: Psychological and Clinical Implications*, pp. 1-296. Cited 5 times.  
<http://www.sciencedirect.com/science/book/9780128005385>  
ISBN: 978-012800538-5  
doi: 10.1016/C2013-0-16065-5  
  
[View at Publisher](#)
- 
- 4 Bhargava, D, Trivedi, H.  
A Study of Causes of Stress and Stress Management among Youth  
(2018) *IRA-International J Manag Soc Sci*, 11 (3). Cited 29 times.  
4
- 
- 5 Faisal, F, Noor, N, Khair, A.  
Causes and Consequences of Workplace Stress among Pakistan University Teachers  
(2019) *Bull Educ Res*, 41 (3). Cited 8 times.  
5
- 
- 6 *Stress and Generations*  
6. American Psychological Association. chrome-extension: efaidnbmnnnibpcajjpcglclefindmkaj (retrived on 26 October 2022)  
<https://www.apa.org/news/press/releases/stress/2011/generations.pdf>
-

- 7 Javed, B., Sarwer, A., Soto, E.B., Mashwani, Z.-U.-R.  
The coronavirus (COVID-19) pandemic's impact on mental health  
  
(2020) *International Journal of Health Planning and Management*, 35 (5), pp. 993-996. Cited 115 times.  
[http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1099-1751](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1099-1751)  
doi: 10.1002/hpm.3008  
  
View at Publisher
- 
- 8 Moni, A.S.B., Abdullah, S., Abdullah, M.F.I.L.B., Kabir, M.S., Alif, S.M., Sultana, F., Salehin, M., (...), Rahman, M.A.  
Psychological distress, fear and coping among Malaysians during the COVID-19 pandemic  
  
(2021) *PLoS ONE*, 16 (9 September), art. no. e0257304. Cited 30 times.  
<https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0257304&type=printable>  
doi: 10.1371/journal.pone.0257304  
  
View at Publisher
- 
- 9 Fofana, N.K., Latif, F., Sarfraz, S., Bilal, Bashir, M.F., Komal, B.  
Fear and agony of the pandemic leading to stress and mental illness: An emerging crisis in the novel coronavirus (COVID-19) outbreak  
  
(2020) *Psychiatry Research*, 291, art. no. 113230. Cited 116 times.  
[www.elsevier.com/locate/psychres](http://www.elsevier.com/locate/psychres)  
doi: 10.1016/j.psychres.2020.113230  
  
View at Publisher
- 
- 10 *COVID-19 Impact and Recovery Among Malaysian Households: High Frequency Phone Survey — Round 1*  
10. World Bank. (May 18 June 16, 2021). 2021
- 
- 11 (2016) *Malaysian Mental Healthcare Performance Technical report 2016*. Cited 10 times.  
11. Unit MHP. [Internet]. Putrajaya
- 
- 12 Samson, C., Koh, A.  
Stress Monitoring and Recent Advancements in Wearable Biosensors  
  
(2020) *Frontiers in Bioengineering and Biotechnology*, 8, art. no. 1037. Cited 42 times.  
<http://journal.frontiersin.org/journal/bioengineering-and-biotechnology#archive>  
doi: 10.3389/fbioe.2020.01037  
  
View at Publisher
- 
- 13 Kaklauskas, A.  
Web-based biometric computer mouse advisory system to analyze a user's emotions and work productivity  
  
(2015) *Intelligent Systems Reference Library*, 81, pp. 137-173. Cited 4 times.  
<http://www.springer.com/series/8578?detailsPage=titles>  
doi: 10.1007/978-3-319-13659-2\_5  
  
View at Publisher
- 
- 14 Crosswell, A.D., Lockwood, K.G.  
Best practices for stress measurement: How to measure psychological stress in health research  
  
(2020) *Health Psychology Open*, 7 (2). Cited 68 times.  
[hpo.sagepub.com/](http://hpo.sagepub.com/)  
doi: 10.1177/2055102920933072  
  
View at Publisher