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A Study of Technological density in Healthcare worker: A comprehensive review within the Indian Context

Anisha khan[1], Dr. Indrajit Ghosal[2*]

[1]PhD. Scholar, Poornima University, Jaipur
[2]Associate Professor, Poornima University, Jaipur
*Corresponding Author: Dr. Indrajit Ghosal

ABSTRACT

Healthcare workers now experience technological stress, which is one of the major issues brought about by the seamless integration of technology into the industry, which has transformed patient care and management. In the context of the Indian healthcare sector, this systematic research aims to understand the occurrence, effects, and possible measures for minimizing technological stress. The various forms of technological stress, from information overload to trouble adjusting to quickly changing digital tools, are shown by a thorough examination of pertinent literature. The review underscores the detrimental effects of technological stress on healthcare professionals' well-being and the quality of patient care. Key findings highlight the need for targeted interventions and training programs aimed at enhancing technological readiness and resilience among healthcare workers in the Indian context. The study highlights the urgency of prioritizing technological stress management strategies to ensure sustainable and efficient healthcare delivery in India.

Keywords: Technological stress, Digital competence, Healthcare industry in India, Information overload, Patient care, Interventions, Stress management.

1. Introduction

Healthcare systems worldwide are increasingly incorporating technology to enhance service quality, safety, and operational efficiency (Andrade, 2018). This shift towards digitization has revolutionized the daily practices of healthcare professionals, making technology an integral part of their routine tasks and patient care processes (Smith and Noble, 2014; Thurmond, 2001; Marques and Ferreira, 2020; Bauwens et al., 2021; Uchmanowicz et al., 2020). Healthcare sector utilizes various technologies ranging from basic devices such as phones, computers, and laptops to specialized healthcare technologies like Remote Patient Monitoring (RPM), telemedicine, virtual care, wearable devices and health apps, data management and interoperability, workflow optimization, and electronic health records (EHR) (Khamisa et al., 2015). Through various resources such as mobile applications, wearable devices, and telemedicine platforms, patients now have the ability to personalize their health journeys. These tools provide access to a wealth of information, enabling individuals to actively manage their health, engage in preventive measures, and make informed decisions about their care (Lupton, 2020). Telemedicine and virtual consultations have demonstrated positive effects on accessibility, reducing travel time and costs while improving follow-up care (Powell et al., 2021; Bashshur et al., 2016). Improved precision in individualised care has been ensured by the incorporation of machine learning (ML) algorithms and artificial intelligence (AI) into therapeutic and diagnostic processes (Esteva et al., 2017; Topol, 2019). Additionally, robotics, artificial intelligence and automation have been instrumental in enhancing surgical precision and reducing human error (Merry and Crago, 2001; Jiang et al., 2017; Siqueira-Batista et al., 2016). In healthcare management, electronic health records (EHRs) have transformed the storage, accessibility, and sharing of patient information, promoting care coordination and informed decision-making (Tang et al., 2016; Adler-Milstein et al., 2015). Big Data Analytics (BDA) and Predictive Modelling enable the utilization of new technologies in health management, and provide valuable insights that optimize resource allocation, identify trends, and improve population health results (Ristevski and Chen, 2018; Batko and Ślęzak, 2022). Furthermore, emerging technologies in healthcare are making rapid strides, introducing innovative solutions that are revolutionizing patient care and organizational processes. Concepts such as cloud computing, augmented reality, Internet of Things (IoT) connectivity, block-

chain, and even drone technology for contactless prescription delivery are reshaping the healthcare landscape (Kelly et al., 2020; Khan, 2020). These technological advancements hold immense potential to enhance patient outcomes by improving accessibility, efficiency, and effectiveness of healthcare services.

Despite the anticipated benefits, the full integration of technology into healthcare has not reached its projected potential. Several challenges, such as lack of validated health applications, issues related to patient data security and resistance from healthcare professionals, have hindered the seamless implementation of technology in Indian healthcare (Gupta et al., 2021). While technological advancements have been expected to empower patients and facilitate shared decision-making, empirical evidence suggests that paternalistic and conventional decisions are more common and there are concerns regarding the trustworthiness and user-convenience of EHR (Sinha et al., 2021; Peter, 2020). Moreover, the introduction of technology has imposed an additional burden on healthcare professionals, leading to an increased administrative workload, and interruptions during patient care, thereby potentially contributing to technological stress (Barr et al., 2008; Babbott et al., 2014; Kesarwani et al., 2020; Rana, S et al. 2023; Pahari, S et al.2023). Healthcare practitioners require regular updates on their technological knowledge and need to swiftly adapt to the integration of novel technologies, such as electronic health records and telemedicine (Marques and Ferreira, 2020)

Therefore, despite offering opportunities for the optimization of patient health outcomes, the implementation of technology presents challenges for healthcare professionals. In light of these complexities, the present systematic review aims to critically examine the phenomenon of technological stress in the Indian healthcare industry. Furthermore, the review addresses the discrepancy between the anticipated benefits and the actual outcomes of technology-implementation, emphasizing the need for a collaborative approach involving healthcare professionals in the design and implementation of technology-driven solutions to mitigate techno-stress and optimize healthcare services.

2. LITERATURE REVIEW

Technological stress has emerged as a significant issue within the Indian healthcare sector, affecting the well-being and performance of healthcare professionals. Various studies have shed light on the complexities and challenges involved with the incorporation of technology in healthcare domains, underscoring its influence on the welfare of healthcare staff and the standard of patient treatment (Thimbleby, 2013; Nielsen and Sahay, 2022; Stoumpos, Kitsios and Talias, 2023).

Babbott et al. (2014) emphasize the impact of techno-stress on job satisfaction and productivity among Indian healthcare professionals, highlighting the detrimental effects of technological stress on overall job performance.

Ranganathan (2020) proposes a framework for mitigating technological stress among healthcare professionals, emphasizing the importance of building technological resilience within the healthcare industry in India. They suggest strategies to alleviate the adverse effects of technology-induced stress, thereby promoting a healthier work environment.

Furthermore, studies such as those conducted by Shrivastava et al. (2023) and Kesarwani et al. (2020) focus on enhancing user experience and technical support services to address technological stress effectively. These studies underscore the significance of providing adequate support systems and user-friendly interfaces to alleviate the challenges associated with technological implementation.

Additionally, Gupta et al. (2021) analyze the relationship between technological stress and burnout among healthcare professionals in the Indian context, highlighting the need for proactive measures to manage and minimize the adverse effects of technology-induced stress.

Furthermore, Kruse et al. (2016) and Reisman (2017) highlight the difficulties encountered in implementing EHR systems and the coping mechanisms employed by healthcare practitioners in India. These studies offer important insights into the particular difficulties encountered when integrating technological systems and the coping strategies used by medical

professionals. In line with the context, Sarwar et al. (2022) examined a variety of data formats, data transformation, intrinsic constraints, and features of EHR data that could present a number of difficulties for researchers. It was found that the precision, comprehensibility, and reliability of the data models are crucial considerations for EHR secondary applications in real-world medical settings (Sherri, 2018; Gianfrancesco et al., 2018; Bjerring and Busch, 2020; Edmondson and Reimer, 2020).

Smith and Noble (2014) discuss the potential biases in research, which are crucial to consider when evaluating the findings in the domain of healthcare technology. Thurmond (2001) emphasizes the significance of triangulation in research methodology, indicating the need for a multifaceted approach to comprehend technological stress in healthcare thoroughly.

Dal Mas et al. (2023) examined the current state of digital technologies in healthcare, emphasizing the disorderly adoption of these novel technologies during the pandemic and their implications for both management and business aspects.

According to Uchmanowicz et al. (2020), there may be a connection between technological stress in the healthcare sector and burnout, work satisfaction, and nursing care rationing. A thorough examination of work-related stress among health professionals is provided by Peter (2020), who highlighted the importance of having a thorough grasp of the psychosocial work environment. Golz (2021) conducted an analysis of increasingly digitizing healthcare systems to study the pervasiveness of technological stress among health personnel and scrutinize the contributing elements.

Bauwens et al. (2021) found that both techno-invasion and techno-overload are the predictors of increased emotional exhaustion and reduced quality of care among childcare workers; and made suggestions to prevent and mitigate technological stress effectively. Ragu-Nathan et al. (2008) outlined the repercussions of technological stress, emphasizing the need for a nuanced understanding of the psychological and behavioral implications. Rink et al. (2023) highlighted electronic medical record system difficulties, computer glitches, and software upgrades as technology stressors among the healthcare personnel.

These studies collectively emphasize the multifaceted nature of technological stress in healthcare, underscoring the significance of considering various factors in research design and policy formulation.

Furthermore, literature focusing on the role of technology in the healthcare sector emphasizes the need for usability studies and user-centric design to ensure the successful integration of technology. Research by Califf et al. (2020), Weinert et al. (2020), and Tarafdar et al. (2019) highlight the need for supportive work environments and effective mitigation techniques in the healthcare industry, as they illuminate both the positive and negative aspects of technological stress.

The healthcare professionals encounter the challenges associated with technology adoption and the implementation of electronic health record systems in healthcare, as highlighted by Busch et al. (2018), Cho et al. (2021), and Mosadeghrad (2013). These studies emphasize the need for a comprehensive approach to address technological stress, encompassing the perspectives of healthcare professionals, administrators, and policymakers, along with the importance of effective change management strategies to facilitate successful technology integration in the healthcare sector.

Overall, the literature review presents a comprehensive understanding of the multifaceted nature of technological stress in the healthcare industry, underscoring the significance of considering various dimensions, including psychological, organizational, and systemic factors, to develop effective strategies for the successful integration of technology while mitigating the associated stressors.

3. FINDINGS

The comprehensive examination of existing literature regarding technological stress within the Indian healthcare sector has yielded significant insights. Primarily, a notable portion of healthcare professionals in India grapples with technological stress, primarily triggered by the swift assimilation of electronic health record (EHR) systems and other digital innovations

(Sinha et al., 2021; Wadhwa, 2020). This strain commonly stems from the intricate nature of these systems, amplified administrative responsibilities, and the continual demand for adapting to novel technologies (Ali and Kumar, 2023).

Moreover, the research underlined that technological stress has the potential to diminish job satisfaction and escalate burnout levels among healthcare practitioners in India, ultimately impacting patient care quality and clinical outcomes (Babbott et al., 2014; Gupta et al., 2021). Notably, inadequate training and insufficient support in utilizing these technologies were identified as pivotal contributors to the stress experienced by healthcare professionals (Kaihlanen et al., 2021).

Furthermore, the review emphasized the necessity for holistic interventions to alleviate technological stress, including the implementation of user-friendly interfaces, tailored training schemes, and improved technical support services (Shrivastava et al., 2023). Additionally, fostering a culture of technological resilience and providing psychological support for healthcare professionals appear as indispensable strategies in alleviating their technological stress (Ranganathan, 2020).

In conclusion, these findings underscore the immediate need to address technological stress within the Indian healthcare domain to safeguard the well-being of healthcare professionals and uphold the calibre and effectiveness of patient care services. Moreover, the promotion of digital competence among healthcare professionals stands as a vital element in mitigating the adverse repercussions of technological stress, emphasizing the significance of fostering a supportive environment for technology adoption within the healthcare sector.

4. DISCUSSION

The findings of the systematic review underscore the pervasive nature of technological stress within the Indian healthcare industry. The integration of complex technologies has significantly impacted the workflow and operational processes in healthcare settings, leading to increased strain on healthcare professionals. The findings suggest that the rapid adoption of digital systems and the lack of comprehensive training programs have made healthcare workers more stressed out by technology, which has an effect on the standard of patient care as a whole (Mansour and Nogues, 2022). The ramifications of technological strain effect many different parties involved in the healthcare landscape (Rink, 2023). Healthcare professionals experience heightened burnout, reduced job satisfaction, and compromised well-being, ultimately affecting their performance and patient interactions (Gardener et al., 2019; Prasad, B. & Ghosal, I. 2019). Additionally, patients may encounter disruptions in care delivery, leading to potential safety concerns and diminished trust in the healthcare system. Healthcare organizations, on the other hand, face challenges related to decreased productivity, increased turnover rates, and compromised organizational effectiveness, which can significantly impact the overall quality and efficiency of healthcare services.

Several key factors contribute to the prevalence of technological stress within the Indian healthcare sector. These include inadequate infrastructural support, limited access to comprehensive training and skill development programs, resistance to change among healthcare professionals, and the lack of standardized protocols for technology implementation. Additionally, the absence of robust regulatory frameworks and insufficient technological support systems further exacerbate the challenges faced by healthcare professionals, thereby intensifying the overall burden of technological stress.

Current interventions designed to mitigate technological stress in the Indian healthcare sector have demonstrated mixed effectiveness. Educational initiatives focusing on enhancing digital literacy and offering continuous professional development have shown promise in equipping healthcare professionals with the necessary skills and competencies to navigate complex technological environments. However, the lack of standardized training protocols and limited access to supportive resources remain significant barriers to the successful implementation of these interventions. Future efforts should emphasize the development of comprehensive, context-specific intervention approaches customized to the distinct requirements of medical practitioners operating in the Indian healthcare ecosystem (Kumar and Preetha, 2012).

Suggestions for future research and areas for further investigation: Further research endeavours should prioritize the exploration of the long-term effects of technological stress on healthcare professionals' mental health and well-being within the Indian healthcare setting. Additionally, there is a critical need to investigate the role of organizational culture and leadership in fostering a supportive environment that encourages technological adaptation and minimizes the adverse effects of technological stress. Furthermore, examining the efficacy of innovative technologies, such as artificial intelligence and telemedicine, in alleviating the burden of technological stress and enhancing the overall efficiency of healthcare delivery warrants in-depth investigation. Developing comprehensive and long-lasting intervention methods to support a healthier and more resilient healthcare workforce requires an understanding of the social and cultural factors impacting technology uptake and acceptability in the Indian healthcare sector (Gopal, 2019).

5. CONCLUSION

To conclude, this systematic review sheds light on the pervasive issue of technological stress within the Indian healthcare industry. Through an in-depth analysis of existing literature, it becomes evident that healthcare professionals in India are increasingly experiencing various forms of stress attributed to the integration of technology in their work environment. The findings highlight the detrimental effects of technological stress on the quality of patient care and overall healthcare outcomes, necessitating urgent attention from various stakeholders.

Emphasizing the significance of addressing technological stress, it is imperative for healthcare policymakers, administrators, and practitioners to recognize the detrimental impact of stress on the well-being of healthcare professionals and the overall healthcare system. Efforts must be made to implement comprehensive interventions that not only alleviate technological stress but also promote a conducive work environment, thereby ensuring the delivery of optimal healthcare services.

In light of these insights, it is recommended that healthcare policymakers give top priority to the creation and execution of focussed initiatives that aim to enhance the technological adaptability of medical practitioners (Stoumpos, Kitsios and Talias, 2023). Comprehensive training programs, regular workshops, and the provision of adequate support systems can significantly aid in mitigating the adverse effects of technological stress and promoting a culture of adaptability within the healthcare workforce (Søvold et al., 2021; Tarafdar et al., 2023).

Furthermore, considering the rapid advancements in technology and its increasing integration into the healthcare sector, it is essential to encourage further research in this area. Future studies should focus on exploring the specific factors contributing to technological stress, evaluating the efficacy of various intervention strategies, and identifying innovative approaches to foster a sustainable and stress-free technological environment within the Indian healthcare industry.

By working together and taking a proactive stance, the Indian healthcare sector can successfully tackle the issues brought about by technology stress and develop a staff that is resilient and able to provide patient-centred, high-quality treatment.

REFERENCES

[1] Adler-Milstein, J., DesRoches, C. M., Kralovec, P., Foster, G., Worzala, C., Charles, D., Searcy, T., & Jha, A. K. (2015). Electronic Health Record Adoption In US Hospitals: Progress Continues, But Challenges Persist. Health affairs (Project Hope), 34(12), 2174–2180. https://doi.org/10.1377/hlthaff.2015.0992

[2] Ali, A., & Kumar, S. (2023). Indian Healthcare Workers' Issues, Challenges, and Coping Strategies during the COVID-19 Pandemic: A Cross-Sectional Study. International Journal of Environmental Research and Public Health, 20(4). https://doi.org/10.3390/ijerph20043661

[3] Andrade, C. (2018). Internal, External, and Ecological Validity in Research Design, Conduct, and Evaluation. Indian Journal of Psychological Medicine, 40(5), 498-499.

[4] Babbott, S., Manwell, L. B., Brown, R., Montague, E., Williams, E., Schwartz, M., Hess, E., & Linzer, M. (2014). Electronic medical records and physician stress in primary care: results from the MEMO Study. Journal of the

American Medical Informatics Association : JAMIA, 21(e1), e100–e106. https://doi.org/10.1136/amiajnl-2013-001875

[5] Barr, C. D., Spitzmüller, C., & Stuebing, K. K. (2008). Too stressed out to participate? Examining the relation between stressors and survey response behavior. Journal of Occupational Health Psychology, 13(3), 232-243.

[6] Bashshur, R. L., Howell, J. D., Krupinski, E. A., Harms, K. M., Bashshur, N., & Doarn, C. R. (2016). The Empirical Foundations of Telemedicine Interventions in Primary Care. Telemedicine Journal and E-Health, 22(5), 342-375. https://doi.org/10.1089/tmj.2016.0045

[7] Batko, K., & Ślęzak, A. (2022). The use of Big Data Analytics in healthcare. Journal of Big Data, 9(1), 1-24. https://doi.org/10.1186/s40537-021-00553-4

[8] Bauwens, R., Denissen, M., Van Beurden, J., & Coun, M. (2021). Can Leaders Prevent Technology From Backfiring? Empowering Leadership as a Double-Edged Sword for Technostress in Care. Frontiers in Psychology, 12, 702648. https://doi.org/10.3389/fpsyg.2021.702648

[9] Bjerring, J. C., & Busch, J. (2020). Artificial intelligence and patient-centered decision-making. Philosophy and Technology, 34, 1–23.

[10] Busch, A. B., Bates, D. W., & Rauch, S. L. (2018). Improving Adoption of EHRs in Psychiatric Care. The New England Journal of Medicine, 378(18), 1665-1667.

[11] Califf, C. B., Sarker, S., & Sarker, S. (2020). The Bright and Dark Sides of Technostress: A Mixed-Methods Study Involving Healthcare IT. MIS Quarterly, 44(2), 809-856

[12] Cho, Y., Kim, M., & Choi, M. (2021). Factors associated with nurses' user resistance to change of electronic health record systems. BMC Medical Informatics and Decision Making, 21(1), 218.

[13] Dal Mas, F., Massaro, M., Rippa, P., & Secundo, G. (2023). The challenges of digital transformation in healthcare: An interdisciplinary literature review, framework, and future research agenda. Technovation, Elsevier,123(C), 102716.

[14] Edmondson, M. E., & Reimer, A. P. (2020). Challenges Frequently Encountered in the Secondary Use of Electronic Medical Record Data for Research. Computers, informatics, nursing: CIN, 38(7), 338–348. https://doi.org/10.1097/CIN.0000000000000609

[15] Esteva, A., Kuprel, B., Novoa, R. A., Ko, J., Swetter, S. M., Blau, H. M., & Thrun, S. (2017). Dermatologist-level classification of skin cancer with deep neural networks. Nature, 542(7639), 115-118.

[16] Gardner, R. L., Cooper, E., Haskell, J., Harris, D. A., Poplau, S., Kroth,, P. J., & Linzer, M. (2019). Physician stress and burnout: The impact of health information technology. Journal of the American Medical Informatics Association, 26(2), 106–114.

[17] Gianfrancesco, M. A., Tamang, S., Yazdany, J., & Schmajuk, G. (2018). Potential Biases in Machine Learning Algorithms Using Electronic Health Record Data. JAMA Intern Med., 178(11), 1544–1547. DOI: http://dx.doi.org/10.1001/jamainternmed.2018.3763

[18] Golz, C., Peter, K. A., Zwakhalen, S. M. G., Hahn, S. (2021). Technostress Among Health Professionals—A Multilevel Model and Group Comparisons between Settings and Professions. Inform. Health Soc. Care, 46(2), 136–147.

[19] Gopal, K. M. (2019). Strategies for Ensuring Quality Health Care in India: Experiences From the Field. Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine, 44(1), 1-3. https://doi.org/10.4103/ijcm.IJCM_65_19

[20] Gupta, M. D., Jha, M. K., Bansal, A., Yadav, R., Ramakrishanan, S., Girish, M. P., Sarkar, P. G., Qamar, A., Kumar, S., Kumar, S., Jain, A., Saijpaul, R., Gupta, V., Kansal, D., Garg, S., Arora, S., Biswas, P. S., Yusuf, J., Malhotra, R. K., . . . Investigators, B. L. (2021). COVID 19-related burnout among healthcare workers in India and ECG based predictive machine learning model: Insights from the BRUCEE- Li study. Indian Heart Journal, 73(6), 674-681. https://doi.org/10.1016/j.ihj.2021.10.002

[21] Jiang, F., Jiang, Y., Zhi, H., Dong, Y., Li, H., Ma, S., Wang, Y., Dong, Q., Shen, H., & Wang, Y. (2017). Artificial intelligence in healthcare: Past, present and future. Stroke and Vascular Neurology, 2(4), 230-243. https://doi.org/10.1136/svn-2017-000101

[22] Kaihlanen, A. M., Gluschkoff, K., Laukka, E., & Heponiemi, T. (2021). The Information System Stress, Informatics Competence and Well-Being of Newly Graduated and Experienced Nurses: A Cross-Sectional Study. BMC Health Services Research, 21, 1096. https://doi.org/10.1186/s12913-021-07132-6

[23] Kelly, J. T., Campbell, K. L., Gong, E., & Scuffham, P. (2020). The Internet of Things: Impact and Implications for Health Care Delivery. Journal of medical Internet research, 22(11), e20135. https://doi.org/10.2196/20135

[24] Kesarwani, V., Husaain, Z. G., & George, J. (2020). Prevalence and Factors Associated with Burnout among Healthcare Professionals in India: A Systematic Review and Meta-Analysis. Indian journal of psychological medicine, 42(2), 108–115. https://doi.org/10.4103/IJPSYM.IJPSYM_387_19

[25] Khamisa, N., Oldenburg, B., Peltzer, K., & Ilic, D. (2015). Work related stress, burnout, job satisfaction and general health of nurses. International journal of environmental research and public health, 12(1), 652–666. https://doi.org/10.3390/ijerph120100652

[26] Khan, M. A. (2020). An IoT Framework for Heart Disease Prediction Based on MDCNN Classifier. IEEE Access, 8, 34717–34727.

[27] Kruse, C. S., Kothman, K., Anerobi, K., & Abanaka, L. (2016). Adoption factors of the electronic health record: A systematic review. JMIR Medical Informatics, 4(2), e19.

[28] Kumar, S., & Preetha, G. (2012). Health Promotion: An Effective Tool for Global Health. Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine, 37(1), 5-12. https://doi.org/10.4103/0970-0218.94009

[29] Lupton, D. (2020). Health promotion in the digital era: A critical commentary. Health Promotion International, 35(6), 1395-1405.

[30] Mansour, S., & Nogues, S. (2022). Advantages of and Barriers to Crafting New Technology in Healthcare Organizations: A Qualitative Study in the COVID-19 Context. International Journal of Environmental Research and Public Health, 19(16). https://doi.org/10.3390/ijerph19169951

[31] Marques, I. C. P., & Ferreira, J. J. M. (2020). Digital transformation in the area of health: systematic review of 45 years of evolution. Health and Technology, 10(3), 575-586.

[32] Merry, M. D., & Crago, M. G. (2001). The past, present and future of health care quality. Urgent need for innovative, external review processes to protect patients. Physician executive, 27(5), 30–35.

[33] Mosadeghrad, A. M. (2013). Obstacles to TQM success in health care systems. International Journal of Health Care Quality Assurance, 26(2), 147-173.

[34] Nielsen, P., & Sahay, S. (2022). A critical review of the role of technology and context in digital health research. Digital Health, 8. https://doi:10.1177/20552076221109554

[35] Peter, K. A. (2020). Work-related stress among health professionals working in Swiss hospitals, nursing homes and home care organizations. (Doctoral Thesis). Maastricht University.

[36] Powell, R. E., Henstenburg, J. M., Cooper, G., Hollander, J. E., & Rising, K. L. (2017). Patient Perceptions of Telehealth Primary Care Video Visits. Annals of Family Medicine, 15(3), 225–229. https://doi.org/10.1370/afm.2095

[37] Ragu-Nathan, T. S., Tarafdar, M., Nathan, R., & Qiang, Tu. (2008). The Consequences of Technostress for End Users in Organizations: Conceptual Development and Empirical Validation. Information Systems Research. 19(4), 417-433. https://DOI:10.1287/isre.1070.0165

[38] Ranganathan, S (2020). Mission Resilience: A Clarion Call for India's Future of Health. Health Express

[39] Reisman, M. (2017). EHRs: The Challenge of Making Electronic Data Usable and Interoperable. Pharmacy and Therapeutics, 42(9), 572-575. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5565131/

[40] Rink, L. C., Oyesanya, T. O., Adair, K. C., Humphreys, J. C., Silva, S. G., & Sexton, J. B. (2023). Stressors Among Healthcare Workers: A Summative Content Analysis. Global Qualitative Nursing Research, 10. https://doi.org/10.1177/23333936231161127

[41] Ristevski, B., & Chen, M. (2018). Big Data Analytics in Medicine and Healthcare. Journal of integrative bioinformatics, 15(3), 20170030. https://doi.org/10.1515/jib-2017-0030

[42] Rosa, V. M., Saurin, T. A., Tortorella, G. L., Fogliatto, F. S., Tonetto, L. M., & Samson, D. (2021). Digital technologies: An exploratory study of their role in the resilience of healthcare services Applied Ergonomics, 97, 103517.

[43] Sarwar, T., Seifollahi, S., Chan, J., Zhang, X., Aksakalli, V., Hudson, I., Verspoor, K., & Cavedon, L. (2022). The Secondary Use of Electronic Health Records for Data Mining: Data Characteristics and Challenges. ACM Computing Surveys, 55(2), 1-40. https://doi.org/10.1145/3490234

[44] Sherri, R. (2018). Machine learning for prediction in Electronic Health data. JAMA Network Open, 1(4), e181404–e181404.

[45] Shrivastava, R., Singh, A., Khan, A., Choubey, S., Restivo Haney, J., Karyotaki, E., Tugnawat, D., Bhan, A., & Naslund, J. A. (2023). Stress Alleviation Methods for community-Based Health ActiVists (SAMBHAV): Development of a digital program for stress reduction for community health workers in rural India. SSM - Mental Health, 4, 100230. https://doi.org/10.1016/j.ssmmh.2023.100230

[46] Sinha, S., Majumdar, S., & Mukherjee, A. (2021). Implementing Electronic Health Records in India: Status, Issues & Way Forward. Biomed J Sci & Tech Res, 33(2).

[47] Siqueira-Batista, R., Souza, C. R., Maia, P. M., & Siqueira, S. L. (2016). Robotic Surgery: Bioethical Aspects. Arquivos Brasileiros de Cirurgia Digestiva: ABCD, 29(4), 287-290. https://doi.org/10.1590/0102-6720201600040018

[48] Smith, J., & Noble, H. (2014). Bias in research. Evidence-based Nursing, 17(4), 100-101.

[49] Søvold, L. E., Naslund, J. A., Kousoulis, A. A., Saxena, S., Qoronfleh, M. W., Grobler, C., & Münter, L. (2021). Prioritizing the Mental Health and Well-Being of Healthcare Workers: An Urgent Global Public Health Priority. Frontiers in Public Health, 9, 679397. https://doi.org/10.3389/fpubh.2021.679397

[50] Stoumpos, A. I., Kitsios, F., & Talias, M. A. (2023). Digital Transformation in Healthcare: Technology Acceptance and Its Applications. International Journal of Environmental Research and Public Health, 20(4). https://doi.org/10.3390/ijerph20043407

[51] Stoumpos, A. I., Kitsios, F., & Talias, M. A. (2023). Digital Transformation in Healthcare: Technology Acceptance and Its Applications. International Journal of Environmental Research and Public Health, 20(4). https://doi.org/10.3390/ijerph20043407

[52] Tarafdar, M., Cooper, C. L., & Stich, J. (2019). The Technostress Trifecta - Techno Eustress, Techno Distress and Design: Theoretical Directions and an Agenda for Research. Information Systems Journal, 29(1), 6-42.

[53] Tarafdar, M., Pirkkalainen, H., & Salo, M. (2023). Mitigating the Adverse Effects of Technostress. In L. Lapierre & S. Cooper (Eds.), Organizational Stress and Well-Being (Cambridge Companions to Management, pp. 441-456). Cambridge: Cambridge University Press. https://doi:10.1017/9781009268332.020

[54] Thimbleby, H. (2013). Technology and the Future of Healthcare. Journal of Public Health Research, 2(3). https://doi.org/10.4081/jphr.2013.e28

[55] Thurmond, V. A. (2001). The point of triangulation. Journal of Nursing Scholarship, 33(3), 253-258.

[56] Topol, E. J. (2019). High-performance medicine: the convergence of human and artificial intelligence. Nature Medicine, 25(1), 44-56.

[57] Uchmanowicz, I., Karniej, P., Lisiak, M., Chudiak, A., Lomper, K., Wiśnicka, A., Wleklik, M., & Rosińczuk, J. (2020). The relationship between burnout, job satisfaction and the rationing of nursing care-A cross-sectional study. Journal of nursing management, 28(8), 2185–2195. https://doi.org/10.1111/jonm.13135

[58] Wadhwa, M. (2020). Electronic Health Records in India. CSD Working Paper Series: Towards a New Indian Model of Information and Communications Technology-Led Growth and Development

[59] Weinert, C., Maier, C., Laumer, S., & Weitzel, T. (2020). Technostress mitigation: An experimental study of social support during a computer freeze. Journal of Business Economics, 90(8), 1199-1249.

[60] Prasad, B., & Ghosal, I. (2019). Perception of cancer patients towards the service quality of the healthcare industry: A paradigmatic research on serviceability. *International Journal of Innovative Technology and Exploring Engineering*, *8*(11), 676-681.

[61] Rana, S., Bag, S., Ghosal, I., & Prasad, B. (2023). How Do Influencers Moderate Purchase Motives? An Application of SOR Model to Assess the Effects of Reviewers' Rating on Online Purchase. Journal of Promotion Management, 1-30.

[62] Pahari, S., Ghosal, I., Prasad, B., & Dildar, S. M. (2023). Which Determinants Impact Consumer Purchase Behavior toward Online Purchasing of Organic Food Products?. Prabandhan: Indian Journal of Management, 16(1), 25-41.