

The hidden trauma of digital disenfranchisement in an AI-driven world

Usha Rana¹, Rupender Singh²¹School of Gender and Development Studies (SOGDS), Indira Gandhi National Open University (IGNOU), New Delhi, India²Department of Computer and Information Engineering, Khalifa University, Abu Dhabi, UAE***Corresponding author:** Rupender Singh, Email: rupendersingh04cs39@gmail.com**Citation:** Rana U, Singh R. The hidden trauma of digital disenfranchisement in an AI-driven world. *Journal of Emergency Practice and Trauma* 2024; 10(1): 1-3. doi: 10.34172/jept.2025.07.**Received:** January 19, 2025 **Accepted:** May 5, 2025 **ePublished:** May 18, 2025

Dear Editor,

The advent of artificial intelligence (AI) and machine learning technologies has ushered in a new era of innovation and efficiency, transforming industries and enhancing everyday life. However, alongside these advancements lies a growing concern—digital disenfranchisement. As society becomes increasingly reliant on digital technologies, specific populations find themselves excluded from these benefits, leading to profound psychological and social consequences. Digital disenfranchisement refers to the exclusion of individuals or groups from the digital economy and technological advancements due to a lack of access, digital literacy, or economic resources. This phenomenon is particularly prevalent among the elderly, low-income individuals, rural communities, and regions with insufficient digital infrastructure (1,2). As AI and digital technologies permeate every aspect of life—from healthcare and education to employment and social services—those without access are increasingly marginalized (3).

The digital divide is not merely a technical issue but a social one with significant implications for mental health and well-being. Digitally excluded individuals often experience a sense of disconnection and alienation, exacerbated by the rapid pace of technological change (4). The inability to participate fully in a digital society can lead to feelings of inadequacy, helplessness, and isolation, contributing to the trauma of exclusion (5). While AI has the potential to democratize access to information and services, it can also reinforce and amplify existing inequalities (6). AI-driven systems are increasingly used in critical areas such as healthcare, education, and employment, where access to these technologies is essential for social and economic participation. However, these systems often require a level of digital literacy and access that is not available to all, leading to the exclusion of those already marginalized (7).

For example, AI-powered healthcare applications are designed to provide personalized health advice, track patient data, and predict health risks. However, individuals who lack access to smartphones, internet connectivity, or the skill to use these tools effectively are left out of these advancements (8). This digital exclusion can result in disparities in health outcomes, where those without access to AI-driven healthcare are at a disadvantage, leading to increased stress and anxiety (9). Similarly, AI-driven tools in education are being used to enhance learning experiences, provide personalized feedback, and monitor student progress. However, students from low-income families or rural areas may not have access to the necessary technology or internet connectivity to benefit from these innovations (10). This digital divide in education can lead to frustration, a sense of failure, and long-term educational disadvantages, further perpetuating cycles of inequality (11).

The trauma associated with digital disenfranchisement is often hidden, manifesting in subtle yet significant ways. Individuals who are excluded from the digital economy may experience a gradual erosion of self-worth and identity. The sense of being left behind or unable to keep up with technological advancements can lead to chronic stress, anxiety, and depression (4,12). Social isolation is another critical issue linked to digital disenfranchisement. As social interactions, services, and even employment opportunities are increasingly mediated by technology, digitally excluded people may be cut off from their communities (1). This isolation can lead to loneliness, abandonment, and a loss of connection with the broader society (13).

The elderly population is particularly vulnerable to these effects. As digital technologies become more integrated into everyday life, older adults who may not be familiar with or able to access these technologies are at risk of increased isolation. This can exacerbate existing



Table 1. Dimensions of digital disenfranchisement and associated impacts

Dimension	Affected population	Associated psychological impacts	Examples of exclusion	Proposed solutions
Access to technology	Elderly, low-income individuals	Isolation, anxiety, depression	Lack of smartphones, computers, or internet connectivity	Expanding digital infrastructure; providing affordable devices
Digital literacy	Elderly, rural communities	Frustration, loss of agency, helplessness	Inability to use AI-driven tools or online platforms	Offering accessible digital literacy programs
Healthcare access	Rural, low-income, elderly	Stress, inequality in health outcomes	Inability to access AI-powered healthcare applications	Implementing community-based digital health initiatives
Educational opportunities	Students in rural/low-income areas	Educational disadvantages, low self-esteem	Lack of access to online learning platforms or AI-driven educational tools	Providing subsidized internet and devices, online tutorials
Social interaction	Elderly, socially isolated groups	Loneliness, social isolation, loss of connection	Inability to use social media, video calls, or messaging apps	Creating age-friendly digital communication platforms
Economic participation	Low-income, unemployed individuals	Unemployment, economic disadvantage, stress	Inability to access online job portals or participate in the digital economy	Digital skills training, employment support programs

feelings of loneliness and contribute to a decline in mental and physical health (14,15). Furthermore, digital disenfranchisement can lead to a loss of agency and autonomy. Where accessing services, information, and opportunities increasingly requires digital competence, those excluded may feel powerless to control their lives (12). This loss of control can be deeply traumatic, particularly for individuals who have previously been self-reliant but now depend on others for access to digital resources (1).

To effectively address the trauma associated with digital disenfranchisement, it is essential to adopt a holistic and inclusive approach that targets both the root causes and the consequences of this issue. As outlined in Table 1, digital disenfranchisement spans several key dimensions, affecting various populations and leading to significant psychological impacts. The table also provides examples of exclusion and proposes solutions that can help mitigate these challenges. Expanding digital literacy programs is a crucial strategy. These programs should be accessible to all individuals, regardless of age, income, or geographic location (5). They should focus on both basic skills and more advanced competencies, such as understanding AI technologies and their implications (10). Improving access to technology is equally important. Governments and private sector organizations must collaborate to ensure everyone has the tools needed to participate in the digital economy (13), including investing in digital infrastructure in underserved areas and providing affordable devices and services to low-income populations (2).

Moreover, designing inclusive AI systems is essential. AI developers must prioritize inclusivity in their designs, creating tools that are user-friendly, accessible, and capable of meeting the diverse needs of all populations (7). Ensuring transparency, fairness, and accountability in AI systems is crucial to fostering trust and equitable treatment (6). Ethical AI practices must be at the forefront of development. This involves addressing the potential for AI to exacerbate inequalities and ensuring that AI systems do not contribute to the further marginalization of vulnerable populations (8). AI should be developed and

deployed in ways that promote social good and uphold the rights and dignity of all individuals (6).

Finally, supporting research on digital disenfranchisement is vital. More research is needed to fully understand the impact of digital disenfranchisement on mental health and well-being (5). Such research should explore the psychological, social, and economic consequences of being digitally excluded and identify strategies to mitigate these effects. The hidden trauma of digital disenfranchisement is a growing concern in our increasingly AI-driven world. As society becomes more reliant on digital technologies, it is imperative that we take steps to ensure that no one is left behind. By expanding digital literacy, improving access to technology, designing inclusive AI systems, and promoting ethical AI practices, we can help mitigate the psychological impacts of digital exclusion and create a more equitable and inclusive society for all.

Conclusion

Digital disenfranchisement is a growing concern in the context of rapid AI integration. This article has highlighted how unequal access to technology and digital literacy disproportionately affects vulnerable populations, leading to serious psychological and social impacts. As AI-driven systems become central to healthcare, education, and employment, ensuring equitable access is critical. Addressing this hidden trauma requires inclusive digital literacy programs, ethical AI design, and investment in infrastructure. Policymakers, technologists, and educators must work collaboratively to prevent further marginalization. Future research should continue to explore these dimensions to ensure that technological progress benefits all members of society.

Authors' Contribution

- Conceptualization:** Usha Rana, Rupender Singh.
- Data curation:** Usha Rana.
- Formal analysis:** Usha Rana.
- Investigation:** Usha Rana, Rupender Singh.
- Methodology:** Rupender Singh.
- Project administration:** Rupender Singh.
- Resources:** Usha Rana, Rupender Singh.

Software: Rupender Singh.

Supervision: Rupender Singh.

Validation: Usha Rana.

Visualization: Usha Rana.

Writing—original draft: Usha Rana.

Writing—review & editing: Rupender Singh.

Competing Interests

None.

Ethical Approval

None.

Funding

None.

References

1. van Dijk J. *The Digital Divide*. Cambridge: Polity; 2020.
2. Robinson L, Schulz J, Blank G. The critical role of social context in digital exclusion: revisiting the concept of digital divide. *Soc Sci Comput Rev*. 2015;33(4):487-502.
3. Scheerder A, van Deursen A, van Dijk J. Determinants of Internet skills, uses, and outcomes. *Telecomm Policy*. 2017;41(3):200-9.
4. Robinson L, Cotten SR, Ono H, Quan-Haase A, Mesch G, Chen W, et al. Digital inequalities and why they matter. *Inf Commun Soc*. 2020;23(1):1-19.
5. Helsper EJ, Eynon R. Distinct skill pathways to digital engagement. *Eur J Commun*. 2013;28(6):696-713. doi: [10.1177/0267323113499113](https://doi.org/10.1177/0267323113499113).
6. Eubanks V. *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*. St. Martin's Press; 2018.
7. Noble SU. *Algorithms of Oppression: How Search Engines Reinforce Racism*. NYU Press; 2018.
8. Vayena E, Haeusermann T, Adjekum A, Blasimme A. Digital health: meeting the ethical and policy challenges. *Swiss Med Wkly*. 2018;148:w14571. doi: [10.4414/smw.2018.14571](https://doi.org/10.4414/smw.2018.14571).
9. Katz JE, Rice RE. *Social Consequences of Internet Use: Access, Involvement, and Interaction*. MIT Press; 2013.
10. Selwyn N. Reconsidering political and popular understandings of the digital divide. *New Media Soc*. 2004;6(3):341-62. doi: [10.1177/1461444804042519](https://doi.org/10.1177/1461444804042519).
11. Warschauer M. *Technology and Social Inclusion: Rethinking the Digital Divide*. MIT Press; 2004.
12. Helsper EJ. A corresponding fields model for the links between social and digital exclusion. *Commun Theory*. 2012;22(4):403-26. doi: [10.1111/j.1468-2885.2012.01416.x](https://doi.org/10.1111/j.1468-2885.2012.01416.x).
13. Cotten SR. Examining the roles of technology in aging and quality of life. *J Gerontol B Psychol Sci Soc Sci*. 2017;72(5):823-6. doi: [10.1093/geronb/gbx109](https://doi.org/10.1093/geronb/gbx109).
14. Mitzner TL, Boron JB, Fausset CB, Adams AE, Charness N, Czaja SJ, et al. Older adults talk technology: technology usage and attitudes. *Comput Human Behav*. 2010;26(6):1710-21. doi: [10.1016/j.chb.2010.06.020](https://doi.org/10.1016/j.chb.2010.06.020).
15. Czaja SJ, Boot WR, Charness N, Rogers WA, Sharit J. Improving social support for older adults through technology: findings from the PRISM randomized controlled trial. *Gerontologist*. 2018;58(3):467-77. doi: [10.1093/geront/gnw249](https://doi.org/10.1093/geront/gnw249).