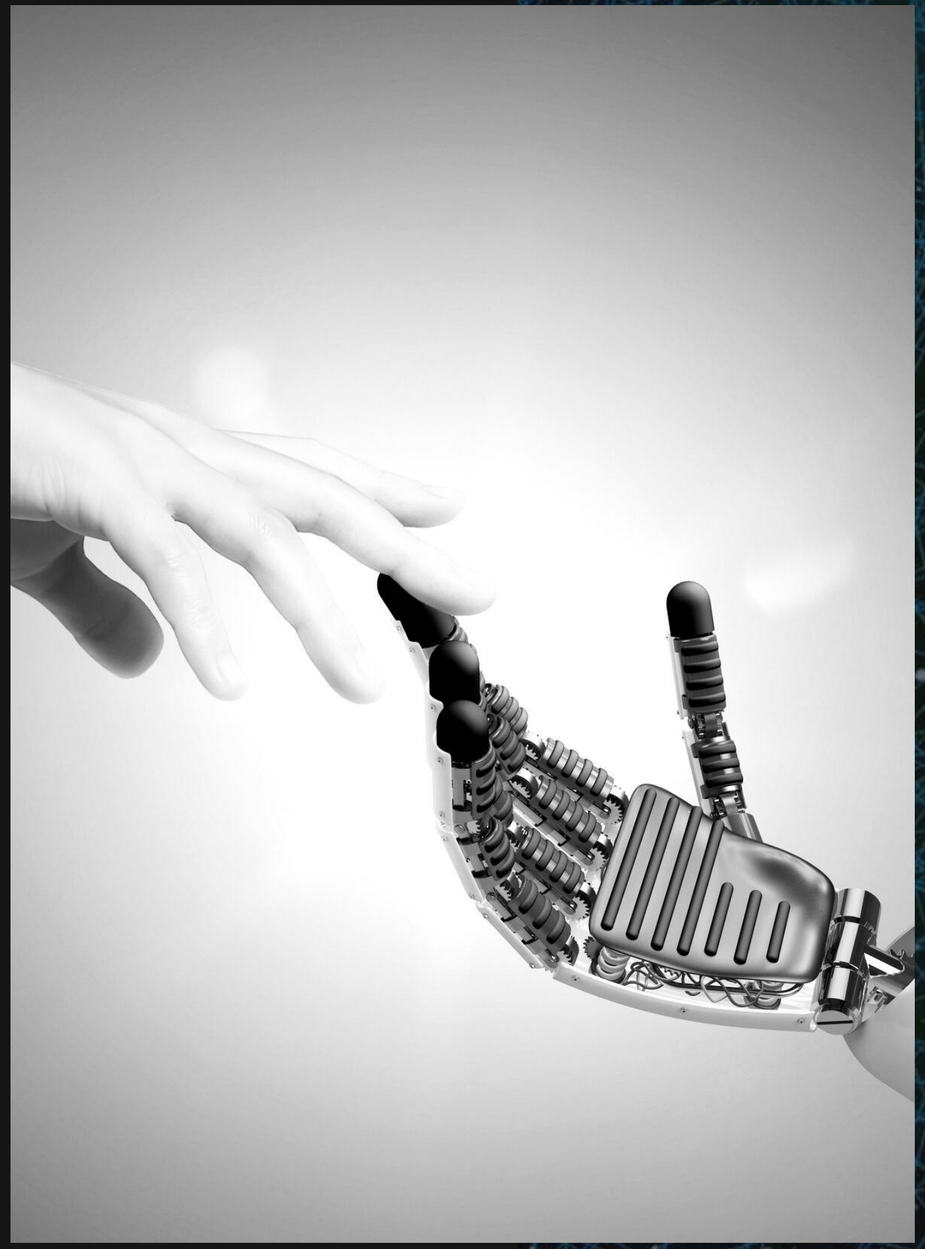


THE FUTURE OF CARE:

INTEGRATING AI-DRIVEN SYSTEMS AND COLLABORATIVE WORK DESIGN TO NAVIGATE THE GLOBAL HEALTHCARE CRISIS AND CAREGIVER BURDEN.

Presented by

AARYA KUMAVAT &
DISHA GUJARATHI

INTRODUCTION

350 million

individuals worldwide serve as caregivers

Alzheimer’s, cancer, stroke, cardiovascular disease, and diabetes.

WHERE DOES THE PROBLEM LIE ?

THE "TRAINING GAP"

CAREGIVER-CENTERED CARE EDUCATION

COLLABORATIVE CARE MODELS

REMOTE PATIENT MONITORING

METHODOLOGY

WE TARGETED PEER-REVIEWED JOURNALS AND GRAY LITERATURE ACROSS FOUR PRIMARY DATABASES TO CAPTURE BOTH CLINICAL AND TECHNOLOGICAL INSIGHTS:

- DATABASES: PUBMED, GOOGLE SCHOLAR, PSYCINFO, AND RESEARCHGATE.
- KEYWORDS: A BOOLEAN SEARCH STRATEGY WAS EMPLOYED USING TERMS SUCH AS:
  - “ARTIFICIAL INTELLIGENCE” AND “CAREGIVER BURNOUT”
  - “REMOTE PATIENT MONITORING” AND “VIGILANCE FATIGUE”
  - “DIGITAL TRANSFORMATION” AND “INTERPROFESSIONAL COLLABORATION”

The String: ("Artificial Intelligence"[MeSH] OR "Machine Learning"[tiab]) AND ("Caregivers"[MeSH] OR "informal care"[tiab]) AND ("Burnout, Professional"[MeSH] OR "vigilance fatigue"[tiab])

METHODOLOGY

WE MOVED FROM A BROAD INITIAL POOL TO A REFINED CORE OF HIGH-IMPACT STUDIES:

- INITIAL IDENTIFICATION: N = 65 PAPERS IDENTIFIED THROUGH TITLE AND ABSTRACT SCREENING.
- FULL-TEXT ASSESSMENT: PAPERS WERE EVALUATED BASED ON THEIR RELEVANCE TO "PROACTIVE VS. REACTIVE" MONITORING.
- FINAL SELECTION: 10 PAPERS WERE REVIEWED IN DEPTH, WITH 8 PRIMARY SOURCES FORMING THE CORE EVIDENCE BASE.

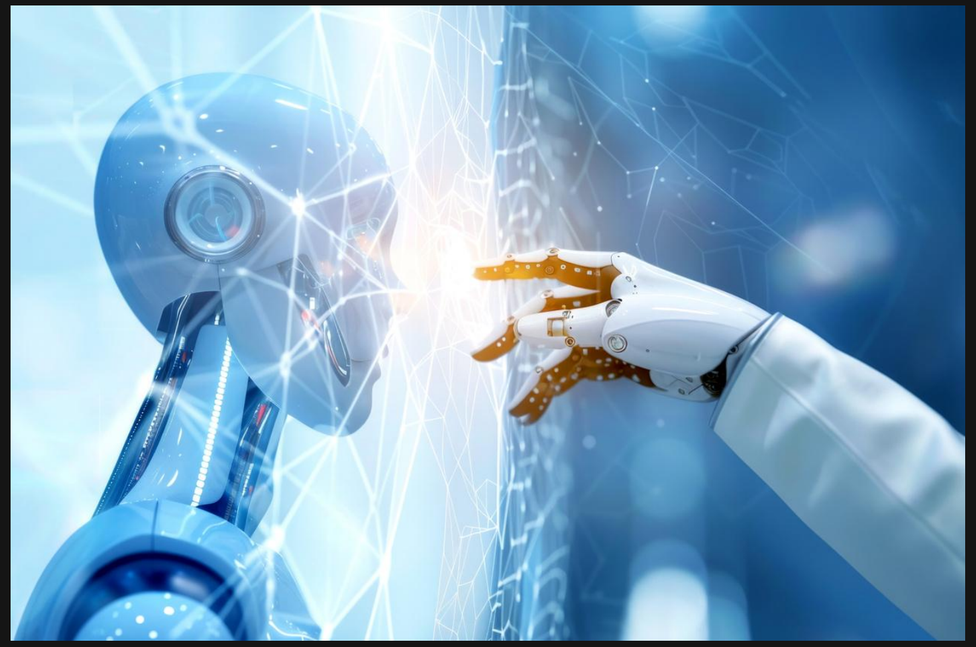
RESULTS/FINDINGS:-

Author & Year	S
Chen (2026)	Ec
Meda & Brennan-Davies (2026)	N

RESULTS/FINDINGS:-

Author & Year	St
Parmar et al. (2025)	Qu
Agarwal & Sharma (2025)	Sy

DISCUSSION....



LIMITATIONS

The integration of AI in caregiving is hindered by **3 critical gaps** that prevent the transition from reactive to proactive care:

Evidence & Data Gaps

- Incomplete Data Sets: Lack of standardized data collection protocols makes it difficult to train "Smart Butler" systems for diverse care scenarios.

Human & Educational Barriers

- Low Digital Literacy: Many caregivers remain unaware of available AI tools or how to effectively integrate them into daily workflows.

Vigilance Fatigue: Paradoxically, new tech can increase stress if caregivers aren't trained to trust automated alerts.

Regulatory & Policy Vacuum

- Undefined Frameworks: A lack of clear legal guidelines regarding data privacy and liability for both doctors and caregivers.
- Standardization: Absence of interprofessional policies to govern how AI-driven insights are shared across care teams

SO, WHAT'S THE CTA??

FUTURE IMPLICATIONS

HUMAN-CENTRIC EVOLUTION

Standardizing "Vigilance Fatigue"

AI Literacy Programs.

CLINICAL INTEGRATION

Expanding Scope

Interprofessional Synergy

COLLABORATIVE INTELLIGENCE

Active Partnership

Policy Innovation

REFERENCES

Chen SC. Empowering Caregivers With Smart Care Artificial Intelligence. J Nurs Res. 2026;34(1):e430. Published 2026 Feb 1. doi:10.1097/jnr.0000000000000727

World Health Organization . (2023). Noncommunicable diseases country profiles 2023. World Health Organization. https://www.who.int/teams/noncommunicable-diseases/surveillance/data/profiles-ncd

Sepasgozar, S., Karimi, R., Farahzadi, L., Moezzi, F., Shirowzhan, S., M. Ebrahimzadeh, S., Hui, F., & Aye, L. (2020). A Systematic Content Review of Artificial Intelligence and the Internet of Things Applications in Smart Home. Applied Sciences, 10(9), 3074. https://doi.org/10.3390/app10093074

Meda GV, Brennan-Davies AH. Remote Patient Monitoring and the Need for a New Care Model: A Narrative Review of Implementation Challenges. Cureus. 2026;18(2):e102803. Published 2026 Feb 1. doi:10.7759/cureus.102803

Borna, Sahar & Maniaci, Michael & Haider, Clifton & Gomez-Cabello, Cesar & Pressman, Sophia & Haider, Syed & Demaerschalk, Bart & Cowart, Jennifer & Forte, Antonio. (2024). Artificial Intelligence Support for Informal Patient Caregivers: A Systematic Review. Bioengineering. 11. 483. 10.3390/bioengineering11050483.

Maleki, M., Mardani, A., Kakemam, E., Huertas-Zurriaga, A., & Vaismoradi, M. (2025). Robot-assisted medication management in home care and long-term care settings: a mixed-method systematic review. Expert review of pharmacoeconomics & outcomes research, 25(8), 1167–1182. https://doi.org/10.1080/14737167.2025.2537190

.Chan CY, De Roza JG, Ding GTY, Koh HL, Lee ES. Psychosocial factors and caregiver burden among primary family caregivers of frail older adults with multimorbidity. BMC Prim Care. 2023;24(1):36. Published 2023 Jan 30. doi:10.1186/s12875-023-01985

Varnosfaderani, S., & Forouzanfar, M. (2024). The Role of AI in Hospitals and Clinics: Transforming Healthcare in the 21st Century. Bioengineering, 11. https://doi.org/10.3390/bioengineering11040337.

Agarwal, S., & Sharma, P. (2025). Optimizing Dementia Outcomes: A Comprehensive Review of Collaborative Care Approaches. Journal of Pharmaceutical Research International. https://doi.org/10.9734/jpri/2025/v37i97744.

Parmar, J., L'Heureux, T., Lewanczuk, R., Lee, J., Charles, L., Sproule, L., Henderson, I., Chaudhuri, E., Berry, J., Shapkin, K., Powell, L., Nicholas, D., Tarnowski, G., Leslie, M., Lobchuk, M., Kaattari, J., Porter, A., Ewa, V., Podlosky, L., Pei, J., Mosaico, S., Penner, J., Saunders, S., & Anderson, S. (2025). Transforming Care Through Co-Design: Developing Inclusive Caregiver-Centered Education in Healthcare. Healthcare, 13. https://doi.org/10.3390/healthcare13030254.

Bhat, K., Hall, A., Kuo, T., & Kumar, N. (2023). "We are half-doctors": Family Caregivers as Boundary Actors in Chronic Disease Management. Proceedings of the ACM on Human-Computer Interaction, 7, 1 - 29. https://doi.org/10.1145/3579545.