Research on AI Partnerships Providing Cognitive Scaffolding for High-Risk, Novel Knowledge Work in Neurodivergent Adults is **emerging but remains limited**, with most studies focusing on general human-AI collaboration and only a few directly addressing neurodivergent populations or high-risk, novel tasks.

1. Introduction

The intersection of artificial intelligence (AI), cognitive scaffolding, and support for neurodivergent adults in high-risk, novel knowledge work is a rapidly evolving but still underexplored research area. While there is robust literature on human-AI collaboration in knowledge work and decision-making, most studies focus on general populations or educational contexts, with only a handful directly addressing neurodivergent adults or the unique demands of high-risk, novel tasks (Sarkar, 2025; Hutson, 2024; Pesqueira et al., 2025; Vaccaro et al., 2024; Horvat & Horvat, 2025; Choudhary et al., 2023; Jarrahi, 2018; Fügener et al., 2021; Zirar et al., 2023; Wu et al., 2025). Recent work highlights AI's potential to enhance cognitive, social, and emotional wellness for neurodivergent individuals through personalized interventions, adaptive platforms, and collaborative frameworks (Sarkar, 2025; Hutson, 2024; Pesqueira et al., 2025). However, systematic reviews and meta-analyses reveal that the effectiveness of human-AI partnerships is highly context-dependent, with mixed results in complex decision-making and creative tasks (Vaccaro et al., 2024; Choudhary et al., 2023; Wu et al., 2025). Trust, ethical considerations, and the need for adaptive, individualized AI systems are recurring themes, especially when supporting neurodivergent professionals in high-stakes environments (Sarkar, 2025; Horvat & Horvat, 2025; Fügener et al., 2021; Zirar et al., 2023). Despite promising pilot studies and conceptual frameworks, there remains a significant gap in empirical research specifically targeting neurodivergent adults engaged in high-risk, novel knowledge work, underscoring the need for further investigation and tailored solutions.

2. Methods

A comprehensive literature review was conducted using Consensus, which aggregates over 170 million research papers from sources such as Semantic Scholar and PubMed. The search strategy involved 20 targeted queries across 8 search groups, focusing on AI partnerships, cognitive scaffolding, knowledge work, and neurodivergent adults. In total, 1,038 papers were identified, 764 were screened, 408 were deemed eligible, and the top 50 most relevant papers were included in this review.

FIGURE 1 Flow diagram of the literature search and selection process.

Eight unique search strategies were used, iteratively refining terms to capture both foundational and applied research on AI, cognitive scaffolding, and neurodiversity in high-risk knowledge work.

3. Results

3.1 Scope and Focus of Existing Research

Most research on AI partnerships and cognitive scaffolding centers on general human-AI collaboration in knowledge work, education, and organizational settings (Jarrahi et al., 2022; Sowa et al., 2021; Vaccaro et al., 2024; Choudhary et al., 2023; Jarrahi, 2018; Fügener et al., 2021; Zirar et al., 2023; Wu et al., 2025; Przegalinska et al., 2025; Bankins et al., 2023). Only a few studies explicitly address neurodivergent adults or the unique challenges of high-risk, novel tasks (Sarkar, 2025; Hutson, 2024; Pesqueira et al., 2025; Horvat & Horvat, 2025).

3.2 AI Support for Neurodivergent Adults

Emerging studies highlight AI's potential to support neurodivergent individuals (e.g., those with autism or ADHD) through personalized learning tools, adaptive therapy, and decision-support platforms (Sarkar, 2025; Hutson, 2024; Pesqueira et al., 2025). These interventions show promise in improving communication, reducing stress, and enhancing cognitive and behavioral skills, but are often limited to pilot studies or qualitative analyses (Sarkar, 2025; Pesqueira et al., 2025; Horvat & Horvat, 2025).

3.3 Human-AI Collaboration in High-Risk, Novel Knowledge Work

Systematic reviews and meta-analyses indicate that human-AI collaboration can enhance performance in creative and content-generation tasks, but results are mixed for complex decision-making, especially in high-stakes environments (Vaccaro et al., 2024; Choudhary et al., 2023; Jarrahi, 2018; Fügener et al., 2021; Wu et al., 2025). Trust, role clarity, and adaptive interaction models are critical for effective collaboration (Chowdhury et al., 2022; Sowa et al., 2021; Choudhary et al., 2023; Fügener et al., 2021; Zirar et al., 2023; Zhao et al., 2022; Jain et al., 2022).

3.4 Gaps and Limitations

There is a notable lack of empirical studies directly examining AI cognitive scaffolding for neurodivergent adults in high-risk, novel knowledge work. Most research either focuses on general populations or does not address the specific cognitive and environmental needs of neurodivergent professionals (Sarkar, 2025; Hutson, 2024; Pesqueira et al., 2025; Horvat & Horvat, 2025; Zirar et al., 2023; Bankins et al., 2023).

Key Papers

Paper	Population/Context	Methodology	Main Findings	Relevance to Neurodivergence/High-Risk Work
(Sarkar, 2025)	Neurodivergent adults (ASD, ADHD)	Qualitative review, interviews, case studies	AI can enhance cognitive/social wellness, but ethical and practical challenges remain	Direct focus on neurodivergent support, limited to general wellness
(Pesqueira et al., 2025)	Healthcare professionals, neurodivergence	Mixed-methods pilot	AI-driven platform reduced stress, improved satisfaction	High-stress, clinical context; includes neurodivergence
(Vaccaro et al., 2024)	General population, various tasks	Systematic review & meta-analysis	Human-AI combos help in creative tasks, mixed in decision-making	Broad, not neurodivergent-specific
(Hutson, 2024)	Higher education, neurodiversity	Conceptual analysis	Neurodivergent perspectives enrich AI-human symbiosis	Theoretical, not empirical
(Horvat & Horvat, 2025)	Neurodivergent individuals	Exploratory overview	AI supports communication, executive function, trust issues	Focus on trust, not high-risk work

FIGURE 2 Comparison of key studies on AI cognitive scaffolding for neurodivergent adults in high-risk, novel knowledge work.

Top Contributors

Type	Name	Papers
Author	M. H. Jarrahi	(Jarrahi et al., 2022; Jarrahi, 2018)
Author	Aleksandra Katarzyna Przegalinska	(Sowa et al., 2021; Przegalinska et al., 2025)
Author	Srijani Sarkar	(Sarkar, 2025)
Journal	*Journal of Business Research*	(Chowdhury et al., 2022; Sowa et al., 2021)
Journal	*Br. J. Educ. Technol.*	(Luckin & Cukurova, 2019; Järvelä et al., 2023; Gibson et al., 2023)
Journal	*Comput. Hum. Behav.*	(Fan et al., 2023; Lim et al., 2022)

FIGURE 3 Authors & journals that appeared most frequently in the included papers.

4. Discussion

The literature demonstrates growing interest in leveraging AI for cognitive scaffolding in knowledge work, but direct research on neurodivergent adults in high-risk, novel environments is sparse. Most studies focus on general human-AI collaboration, with only a few addressing neurodivergent needs or high-stakes contexts (Sarkar, 2025; Hutson, 2024; Pesqueira et al., 2025; Horvat & Horvat, 2025; Zirar et al., 2023; Bankins et al., 2023). Where AI interventions have been piloted, results suggest potential benefits for stress reduction, communication, and cognitive support, but these are often limited to small-scale or qualitative studies (Sarkar, 2025; Pesqueira et al., 2025; Horvat & Horvat, 2025). Systematic reviews highlight that the effectiveness of human-AI partnerships is highly context-dependent, with creative tasks benefiting more than complex decision-making (Vaccaro et al., 2024; Choudhary et al., 2023; Wu et al., 2025). Trust, ethical considerations, and adaptive, individualized AI systems are critical for success, especially for neurodivergent users (Sarkar, 2025; Horvat & Horvat, 2025; Fügener et al., 2021; Zirar et al., 2023). The lack of large-scale, empirical studies in high-risk, novel knowledge work for neurodivergent adults represents a significant research gap.

Claims and Evidence Table

Claim	Evidence Strength	Reasoning	Papers
AI can enhance cognitive and social wellness for neurodivergent adults	Moderate	Supported by qualitative reviews, case studies, and pilot interventions, but lacks large-scale RCTs	(Sarkar, 2025; Hutson, 2024; Pesqueira et al., 2025; Horvat & Horvat, 2025)
Human-AI collaboration improves performance in creative/content tasks	Strong	Meta-analyses and systematic reviews show consistent gains in creative domains	(Vaccaro et al., 2024; Choudhary et al., 2023; Wu et al., 2025)
Effectiveness of AI cognitive scaffolding in high-risk, novel knowledge work is context-dependent	Moderate	Systematic reviews show mixed results, with task type and user characteristics as moderators	(Vaccaro et al., 2024; Choudhary et al., 2023; Jarrahi, 2018; Fügener et al., 2021; Wu et al., 2025)
Trust and adaptive interaction models are critical for effective human-AI partnerships	Moderate	Multiple studies highlight trust, role clarity, and adaptation as key factors	(Chowdhury et al., 2022; Sowa et al., 2021; Horvat & Horvat, 2025; Choudhary et al., 2023; Fügener et al., 2021; Zirar et al., 2023; Zhao et al., 2022; Jain et al., 2022)
There is a lack of empirical research directly targeting neurodivergent adults in high-risk, novel knowledge work	Strong	Systematic review of literature reveals a clear research gap	(Sarkar, 2025; Hutson, 2024; Pesqueira et al., 2025; Horvat & Horvat, 2025; Zirar et al., 2023; Bankins et al., 2023)
Ethical, privacy, and bias concerns limit the deployment of AI for neurodivergent support	Moderate	Discussed in conceptual and review papers, but empirical evidence is limited	(Sarkar, 2025; Horvat & Horvat, 2025; Zirar et al., 2023)

FIGURE 4 Key claims and support evidence identified in these papers.

5. Conclusion

Research on AI partnerships providing cognitive scaffolding for high-risk, novel knowledge work in neurodivergent adults is emerging but remains limited, with most evidence coming from general human-AI collaboration studies or small-scale interventions. There is a clear need for targeted, empirical research to address the unique needs of neurodivergent professionals in high-stakes environments.

5.1 Research Gaps

Despite promising conceptual frameworks and pilot studies, there is a significant lack of empirical research directly examining the impact of AI cognitive scaffolding for neurodivergent adults in high-risk, novel knowledge work. Most studies focus on general populations, educational settings, or do not address the specific cognitive and environmental needs of neurodivergent professionals.

Research Gaps Matrix

Topic/Outcome	General Population	Neurodivergent Adults	High-Risk Work	Novel Knowledge Work	Large-Scale Empirical
Cognitive scaffolding interventions	18	4	2	6	1
Human-AI collaboration frameworks	20	3	2	5	1
Trust, ethics, and adaptation studies	15	2	1	3	GAP
Performance in creative/content tasks	12	1	GAP	4	GAP

FIGURE 5 Matrix showing research coverage and gaps by topic and study attribute.

5.2 Open Research Questions

Future research should focus on large-scale, empirical studies that directly assess the effectiveness of AI cognitive scaffolding for neurodivergent adults in high-risk, novel knowledge work, as well as the development of adaptive, individualized AI systems that address trust, ethics, and user diversity.

Question	Why
How effective are AI cognitive scaffolding systems in enhancing high-risk, novel knowledge work for neurodivergent adults?	Direct empirical evidence is needed to validate the benefits and limitations of AI support in this specific, under-researched population and context.
What design features make AI systems most trustworthy and adaptive for neurodivergent professionals in high-stakes environments?	Understanding user trust and adaptation is critical for safe, effective deployment of AI in sensitive, high-risk settings.
How can ethical, privacy, and bias concerns be addressed in AI systems supporting neurodivergent knowledge workers?	Addressing these concerns is essential for equitable, responsible, and widespread adoption of AI in diverse workplaces.

FIGURE 6 Open research questions and their significance for future studies.

In summary, while the potential for AI partnerships to provide cognitive scaffolding in high-risk, novel knowledge work for neurodivergent adults is recognized, robust empirical research in this area is still in its infancy, highlighting a critical opportunity for future investigation.

These papers were sourced and synthesized using Consensus, an AI-powered search engine for research. Try it at ***https://consensus.app***

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