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Review Paper

AI Chatbot-Human Relationship in the Contemporary World: A Review

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ABSTRACT

This review article aims to explore the different perspectives of the relationship shared between AI driven chatbot and human beings in the context of the current world dynamics. This paper attempts to investigate the positive qualities of their interaction patterns and identify the deficit areas of the service arena, leveraging the literature and research on chatbot and human relations. The application of the study lies in the future development of appropriate tools and strategies to promote quality and facilitate interaction between them by targeted information updates, redesigning algorithmic models and continuous feedback analysis.

Keywords: *AI, Chatbot, Mental Health*

In 2011, the web series titled “Black Mirror” took the world by storm with its futuristic take on technology and artificial intelligence or AI in relationships. One episode of the second season of the series "Be Right Back" attempted to explore the emotional complexities of replacing a deceased man with an AI chatbot by his grieving wife, where the wife remains stuck in loss-oriented coping without actual healing. Similarly, the Oscar winning film “Her” in 2013 about a writer falling in love with AI delved into themes like emotional dependence, romantic connection and profound relationship between human beings and artificial intelligence. The movie made a strong attempt to uncover the complexities and outcome of attachment with an advanced intuitive AI operating system. The portrayal of these aspects of AI decades ago reflects the growing need for technology in human connection.

The introduction of AI chatbot to fulfil the needs and demands of a relationship was considered both novel and exceptional in that era. Cut to 2026, the use of AI chatbots has penetrated our daily life across all fields of service and community work. Chatbot is an essential part of customer support today, answering FAQs, personalizing marketing experience in many companies including retail, banking and health. An AI chatbot is a software that mimics human emotions to provide a human-like conversational experience to the customer by understanding intent and context. It gives us prompt solutions, instant information and technical support besides satisfaction. The power of AI chatbot over human

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led services is slowly but steadily gaining momentum with its consistent virtual assistance, decision support and prompt response.

Contrary to the normal chatbots that rely on predetermined rules and predefined set of inputs, AI chatbots are more flexible, user-friendly and context oriented. They are able to foresee customer needs and suggest futuristic actions. Chatbot runs on the blended guidance of artificial intelligence and machine learning giving every customer or client a positive experience in terms of uniqueness, relevance and logical clarity. The language programming methods of chatbot help decode the meaning behind the queries admitted by users instead of only generating keywords. Both transactional and conversational bots are used to make services effective 24x7. In present times, chatbots are integrated into all kinds of apps, social media platforms and even websites. Since a large amount of data is analysed to simulate these conversations and officiate the interaction patterns, the outcome of these conversations is seen to be authentic, accurate and resourceful by the users. The advent of AI chatbots has been the foundation of many businesses in present times.

REVIEW OF LITERATURE

The rapid acceptance of AI around the world calls for a thorough analysis of its fundamental causes. We are seeing a fundamental shift in psychology as human-computer interaction (HCI) replaces traditional face-to-face therapy. This review tries to explore the psychological dimensions of interactions, focusing on perceived quality, empathy, emotional intelligence, and functional effectiveness in mental health interventions.

Advantages of AI Chatbots

1. Perceived Quality of Interaction and Accessibility

One of the most widely agreed benefits of AI chatbots is their ability to deliver spontaneous and easily accessible support. Unlike traditional services that depend on scheduled appointments and professional availability, AI chatbots offer immediate and continuous responses. Research suggests that such accessibility enhances user engagement and gratify their satisfaction hugely, particularly when individuals are vulnerable and seeking quick emotional or informational support (Bendig et al., 2019).

Research that evaluates chatbot-based mental health systems demonstrate that conversational agents effectively simulate the particularly structured supportive dialogues that are already uploaded in the AI system through psychological exercises. The integration of evidence-based frameworks like CBT allows chatbots to provide structured cognitive restructuring, behavioural activation, and self-monitoring strategies (Fitzpatrick et al., 2017). These features help in increasing the perceived quality and usefulness of chatbot interactions to the individuals.

2. Perceived Emotional Effectiveness in Human–AI Interaction

Empathy, the central component of any successful therapeutic communication, plays an important role in determining user satisfaction. Research suggests that AI chatbots can simulate empathic responses with the already structured and emotionally supportive language patterns and dialogue generation.

Experimental studies have shown that empathic chatbot responses significantly increase user satisfaction and perceived warmth during interactions (Raji et al., 2023). also, systematic investigations of conversational agents suggest that users tend to perceive these AI driven

responses as extremely supportive when the system incorporates emotional recognition and other validation strategies. (Bendig et al., 2019).

However, the perception of empathy in AI systems is a bit challenging. Some research demonstrates that though chatbots can produce linguistically empathetic responses, users may sense those as less emotionally authentic and connected compared to human communicators (Liu et al., 2024). Nevertheless, other studies indicate that in text-based conversations, AI responses may occasionally receive a little bit higher empathy rating than those provided by human professionals, maybe because of their structured and consistently supportive language (Howcroft et al., 2026).

3. Task Efficiency and Functionality

AI chatbots show a strong and efficient performance in structured and task-oriented interactions such as making feel validated, some self-help exercises for immediate symptom relief, and behavioural coaching. Their ability to analyse large datasets helps them to provide evidence-based recommendations spontaneously and quickly during troubleshooting clients' problems and in immediate need of support.

In mental health, empirical studies have shown that AI-based chatbots are successful at delivering therapeutic exercises such as mood monitoring, mindfulness practices, and CBT-based cognitive restructuring techniques (Fitzpatrick et al., 2017). Similarly, studies of Wysa, an AI powered chatbot used for emotional support, revealed gains in users' emotional resilience and coping strategies. (Inkster et al., 2018).

Because of their scalability and consistency, chatbots can be used as a supplementary psychological tool to deliver standardized mental health interventions specially when the individual's need is urgent and human professionals are not immediately available.

4. Performance in Mental Health and Stress Intervention

AI chatbots are widely being explored as tools for mental health support and stress management. After just two weeks of constant communication with AI chatbot, clinical trials found a noticeable decrease in young adult's depression symptoms. (Fitzpatrick et al., 2017).

Many other research studies have demonstrated that AI chatbots may increase the access to mental health resources by providing scalable, low-cost, and anonymous support to users who prefers to avoid human professionals because of the stigma being associated with the whole scenario. (Bendig et al., 2019; Shore et al., 2019). Additionally, the integratory framework of psychotherapeutic theories such as Cognitive Behavioural Therapy (CBT) that are uploaded into chatbot systems, has expanded their potential practical application in stress management and mental health intervention (Fitzpatrick, Darcy, & Vierhile, 2017).

Similarly, studies on digital mental health platforms suggest interaction with chatbot-based systems on a regular basis can enhance emotional well-being and lessen anxiety symptoms (Inkster et al., 2018). These results imply that conversational AI may function as an easily accessible early psychological intervention, specifically in situations and settings with limited access to professional mental health treatments.

However, while AI chatbots demonstrate promising benefits in psychological support and information delivery, researchers also highlight concerns related to empathy authenticity, ethical implications, and long-term cognitive effects of human–AI interaction.

5. Neurocognitive and Psychological Applications

From a neurocognitive perspective, interactions with AI chatbots may affect the cognitive and emotional processes of an individual like; self-reflection, emotional processing, and social cognition. Engaging in organised discourse with conversational agents allows the users to express their emotional feeling and helps them to reinterpret their experiences, both of which relate to cognitive restructuring and emotional control.

Research on human–AI interaction demonstrates that structured AI dialogues can hugely stimulate the cognitive processes related to empathy, social perception, and belief updating, which in turn influences how individuals interpret and respond to emotional experiences (Sharma et al., 2022). The theoretical viewpoint of neuroimaging research suggests that continuous and repeated interaction with supportive AI systems may sometimes activate the neural networks of individual associated with executive functioning and emotion regulation, particularly those involving prefrontal cognitive control processes, even though direct neuroimaging research in this field is still scarce.

Disadvantages and Limitations of AI Chatbots

1. Lack of Genuine Emotional Empathy

Another extremely important aspect of the effectiveness of chatbot is their ability to trigger the emotional intelligence of an individual, which includes – the recognition of emotions, responding in an adaptive way, and supporting emotional regulation. The modern chatbots work based on already installed structured sentiment analysis and emotion detection to understand users' feelings and tend to provide the most suitable and appropriate feedback. Research indicates that such responsiveness can enhance emotional awareness and reflective thinking, as users are encouraged to express their experiences, aiding processes like cognitive reappraisal and regulation linked to better well-being (Fulmer et al., 2019). Moreover, emotionally intelligent designs are associated with higher user satisfaction and engagement, especially in service and healthcare settings (Raji et al., 2023).

Despite these apparent advanced techniques in conversational design, AI chatbots still lack true affective empathy because they do not, more specifically, they cannot experience emotions themselves. Although they can generate responses that appear empathetic, these responses are nothing but based on some learned or already installed linguistic patterns rather than genuine emotional understanding.

Research shows that chatbot responses may be perceived as supportive sometimes, especially when the users are vulnerable and in utmost emergency need, but users often report a sense of emotional artificiality compared to human interaction (Liu et al., 2024). This limitation can reduce the depth of therapeutic alliance and emotional trust in human–AI interactions.

2. Superficial and Vague Understanding of the Complex Psychological Issues

AI chatbots may struggle to interpret and realise the complex emotional narratives, trauma-related experiences, or ambiguous interpersonal dynamics. The main conversational agents based on which the chatbots provide the structured automated replies to the users rely on just

the pattern recognition and focuses on some symptoms superficially; rather than contextual life experience. Hence their responses may sometimes appear generic or insufficiently nuanced (Bendig et al., 2019).

As a result, chatbots may appear as less effective to the users when addressing severe psychological conditions that require individualized assessment and clinical judgment.

3. Risk of Overreliance and Psychological Dependence

Another important negative issue involves the potential for users to develop emotional dependence on AI chatbots. Due to their constant availability, no restriction of use, non-judgmental responses, and supportive interaction style, some users may form strong negative attachments to these systems.

Many scholars in their study have warned that such dependence may reinforce maladaptive beliefs, particularly among individuals experiencing mental health difficulties (Dohnány et al., 2025). This phenomenon emphasises the necessity of responsible design and cautious control of AI-based services.

4. Ethical and Privacy Concerns

The constant use of AI chatbots in psychological contexts by many users over quite a long time also raises significant ethical issues related to data privacy, confidentiality, and other baseline ethics in psychological therapy process. It also creates significant difficulties in the algorithm process of AI. Mental health conversations often contain highly sensitive personal information, making data protection a critical concern.

Researchers emphasize that inadequate data security measures may expose users to risks such as unauthorized data access or misuse of personal information (Raji et al., 2023).

5. Crisis Intervention

AI chatbots can assist the users with mild psychological distress sometimes, but as they are generally not skilled, trained or equipped to handle severe psychiatric crises such as suicidal ideation or acute psychological emergencies; relying completely on AI chatbot is not an intelligent move by the users. In such cases, professional therapists provide emotional connection, risk assessment, and crisis intervention strategies that AI systems currently cannot replicate (Shore et al., 2019).

Consequently, most researchers emphasize that AI chatbots should function as supplementary tools rather than a complete replacement for professional expertise.

DISCUSSION

The discussed perspectives highlight the complex and evolving relationship between AI-driven chatbots and human users in today's world. Research indicates that chatbots are no longer viewed as mere search engines but as systems capable of addressing human emotional needs. Their progression from simple conversational tools to interactive agents reflects their growing capacity to instil confidence and engagement in users. Designed with algorithm-driven autonomy, they actively shape human–technology interactions. Studies further support their role in resource sharing, fulfilling user needs, providing emotional support, enhancing mental health and well-being, aiding task completion, and contributing to overall cognitive understanding.

Perceived empathy is a key factor in chatbot effectiveness. In AI systems, empathy involves simulating emotional sensitivity through supportive and context-appropriate responses. Research shows that such empathetic communication enhances users' trust, engagement, and emotional connection (Park et al., 2021; Cheng et al., 2024). In mental health and counselling contexts, it can promote self-disclosure and longer interactions. However, studies also note that this is only simulated empathy, and users are often aware of AI's limitations in truly understanding complex emotions (Liu et al., 2024).

The effectiveness of chatbots is also strongly influenced by their functional performance. They improve efficiency by automating routine tasks, handling frequently asked questions, and supporting problem-solving and decision-making (Balakrishnan & Dwivedi, 2024). Additionally, in mental health contexts, chatbots are used to facilitate cognitive strategies like stress management and cognitive reframing (Bhattacharjee et al., 2026). This highlights their role in both practical task execution and supporting aspects of cognitive functioning.

From a psychosocial perspective, interacting with chatbots can create a sense of social presence and companionship, especially when they use human-like communication (Youn & Jin, 2021). These interactions may reduce loneliness and provide a non-judgmental space for expression. However, studies caution that excessive reliance on AI communication may alter expectations about responsiveness and interaction in real human relationships (Chi et al., 2022).

Recent research also explores the neurocognitive effects of regular chatbot use. The idea of cognitive offloading suggests that people may rely on digital tools for information and problem-solving, reducing their own mental effort (Risko & Gilbert, 2016). While AI can improve efficiency and lower cognitive load, excessive dependence may restrict deeper cognitive engagement (Firth et al., 2019).

Amidst the rising demand for emotional connectedness and reliance on AI, human beings are failing to adapt to the limitations of AI too. The lack of human touch and closeness is a barrier to developing genuine identification with AI personalities. Users may also form maladaptive belief systems based on their interaction with AI, losing touch with reality and breach of data security in the cyber world may pose a severe threat to one's peace of mind. Confidentiality and privacy are severely compromised when real life conversations are digitally coded and recorded for training purposes, thus leading to the breakdown of one's trust. Research also suggests that overcoming the discomfort and distress of breaking the cycle of attachment is a challenge.

CONCLUSION

AI chatbots provide instant gratification and assurance with its human-like words and interaction patterns but genuine empathy, mutual understanding and emotional reciprocity is not acquired in AI conversation. Though AI may grow in importance to give short term satisfaction in certain fields of business, existential connections are still hard to achieve. Authenticity of love and attachment is, thus, hard to recreate through algorithms, adding to the psychological trauma of overdependent users.

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Conflict of Interest

The author(s) declared no conflict of interest.

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