

Exploring the Impact of CHATBOT AI on Empathic Responses and Emotional Intelligence: A Mixed-Methods Study

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Abstract:

This study investigates the impact of Artificial Intelligence (AI) CHATBOTS on users' empathic abilities and emotional intelligence (EI).

The study includes a comparative analysis of people who use and don't use AI CHATBOTS for emotional support. The objectives included assessing how the effect of AI CHATBOTS on empathy affects users' empathic responses, investigating changes in emotional intelligence associated with the use of AI CHATBOTS, and identifying factors contributing to the effectiveness of AI CHATBOTS in improving empathy ability.

The method involved a comparative study of 140 participants between the ages of 18 and 25, divided into users and non-users of an AI CHATBOT aimed at providing emotional support. Data collection included self-report surveys measuring CHATBOT usage, Interpersonal Reactivity index (IRI), and emotional intelligence (EI).

Statistical analysis reveals significant differences in scores for perspective taking, fantasy, and personal distress between users and non-users of AI CHATBOTS, suggesting that technology-mediated empathy may be associated with specific aspects of empathic responses.

Qualitative analysis of participants' responses reveals different experiences and perceptions related to the use of AI CHATBOTS, such as emotional and academic support and platform choice (e.g., CHATGPT, SNAPCHAT). The findings provide valuable insight into the complex relationship between technology-mediated empathy and human emotional responses.

In conclusion, this study highlights the importance of considering the role of technology in shaping human interactions and emotional experiences. This result suggests that exposure to AI CHATBOTS may influence empathic responses and aspects of emotional intelligence. However, further research is recommended to explore the underlying mechanisms and ethical considerations related to AI-mediated empathy.

Keywords: CHATBOT artificial intelligence, empathy, emotional intelligence, technology-mediated empathy, human-computer interaction.

Introduction

Empathy

Empathy is a fundamental component of human emotional intelligence and plays a crucial role in buildi-

ng meaningful relationships and navigating social interactions. Traditionally, empathy has been cultivated through face-to-face communication, where nonverbal cues and expressions contribute to the understanding of emotions. Emotional intelligence, as defined by Salovey and Mayer (1990), involves perceiving, understanding, managing, and reasoning about emotions in oneself and others.

In the realm of CHATBOT usage, humans can exhibit empathy towards these digital assistants. This phenomenon stems from humans' ability to empathize with inanimate objects, including CHATBOTS or robots. Empathy towards CHATBOTS can be triggered by messages designed to evoke empathy, such as requests for patience or understanding. This can foster perceptions of warmth, trust, and loyalty among users.

Understanding Empathy and Emotional Intelligence

Empathy and emotional intelligence play an important role in today's technology-driven world, where human connections are often drowned out by digital interactions. Empathy and emotional intelligence are key human attributes that are important for work performance, leadership, and organizational success. According to a study by Ezigbo et al. (2013), emotional intelligence is linked to work performance and leadership. The study emphasizes the importance of empathy and self-discipline as well as social skills, initiative, and integrity. Another study by Ginszt et al. (2017) shows how emotional intelligence plays an important role in sports performance. The study found that male and female athletes have different levels of emotional control and understanding when it comes to sports performance. This research highlights the complex relationship between empathy and emotional intelligence and success in different domains.

Technology plays a multi-faceted role in today's society. It affects various aspects of human interactions and emotional intelligence. Understanding the role of technology on empathy is essential as we navigate the challenges of the digital age. The information society, as described by Sasvári (2012), is a landscape where technological advances have the potential to close or widen social gaps. As we explore the complex relationship of technology and society, the role of eco-innovation as a lens through which to analyze technology in promoting sustainable development and empathic practices becomes increasingly important. The interaction between technology, society, & eco-innovation highlights the need for a balanced approach to technological integration to promote empathy and emotional intelligence within an ever-evolving societal context. By understanding these dynamics in greater depth, we are better able to harness the transformative potential of technology while fostering essential human qualities that are essential for meaningful societal progress.

CHATBOT AI

Human-computer interaction is influenced by empathy, as people often attribute human-like characteristics to technology, a concept known as the Media Equation Theory. This theory suggests that individuals respond to social and emotional cues expressed by CHATBOTS similarly to how they would in human interactions. Moreover, CHATBOTS can be programmed to recognize patterns and respond appropriately, making the AI interface appear less robotic and more friendly, thus conveying empathy and enhancing user experience.

Studies have demonstrated that empathetic CHATBOTS can positively impact mood and emotional well-being. For instance, research published in *Frontiers in Psychology* revealed that an empathic CHATBOT providing emotional support could alleviate the negative effects of social exclusion on

mood. Participants who interacted with the empathetic CHATBOT reported improved mood after experiencing social exclusion compared to those who did not interact with the CHATBOT.

Empathy is a crucial element in human-CHATBOT interactions, contributing to a positive user experience, increased trust and loyalty, and improved emotional well-being. By designing CHATBOTS to recognize patterns and respond empathetically, developers can create more human-like interactions that foster a stronger connection between users and technology.

The emergence of artificial intelligence (AI) and natural language processing (NLP) technologies has ushered in a new era characterized by technology-mediated empathy facilitated by CHATBOTS designed to engage in emotionally intelligent conversations. These AI-powered CHATBOTS, equipped with advanced language models and emotional intelligence algorithms, are aimed at providing empathetic responses and support across various contexts, ranging from mental health counseling to customer service interactions.

Advocates of this technology argue that CHATBOTS can improve empathic abilities by offering accessible, consistent, and unbiased emotional support, potentially enhancing or surpassing human capabilities in certain scenarios (Kizillec, 2021). They assert that the scalability and tireless nature of AI systems can help bridge gaps in access to empathetic care, particularly in regions with limited human resources or dealing with stigmatized topics. Additionally, CHATBOTS may help mitigate biases and judgments that can hinder human-to-human empathic exchanges, creating a safe and non-judgmental space for individuals to freely express their emotions.

However, critics argue that the absence of genuine human connection and the inherent limitations of AI systems could ultimately impede the development of authentic empathy and emotional intelligence (Scheutz, 2019). They contend that true empathy is rooted in shared human experiences, emotional resonance, and the ability to interpret nuanced social cues—elements that may be challenging for current AI technologies to fully replicate. Furthermore, there are concerns that an overreliance on CHATBOTS could lead to the erosion

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Rationale

A better understanding of empathy mediated by AI CHATBOTS is of increased importance in our hyper-digitized, technological society. AI-powered CHATBOTS are becoming ubiquitous in multiple sectors, ranging from mental health support to customer services, but we have such little knowledge on how these systems might be influencing the emotional intelligence (EQ) and relationships humans hold. This research provides much-needed insight into the intricate relationship between AI and human-based empathy, filling a major lacuna with respect to this burgeoning field. Empathy and emotional intelligence are becoming more and more necessary in this day and age. They facilitate the building and maintenance of solid rapport, relationships, and communication flows. For eons, we have been using our EQ to navigate the complex world we live in. This has mostly been promoted through the platform of face-to-face communication. Nonverbal gestures, expressions, and tone of voice have been irreplaceable with respect to the depth of emotional communication that they provoke. However, such is no longer the case with the rapidly advancing field of AI. These self-driven CHATBOTS are revolutionizing the world and have hence created an alternative platform, where EQ and empathy may either be replaced to a large extent or, alternatively, be further expanded.

Given the growing prominence and sophistication of CHATBOTS, it is critical to consider the broader implications of these systems. From a psychological standpoint, examining individuals' understandings and reactions to technology-mediated empathy may further a nuanced understanding of the cognitive and emotional mechanisms that underpin human-computer relationships. This information may be used to guide designers and program moderators in aligning the purposes and style of CHATBOTS with the ways in which people seek and respond to empathic exchanges.

Whether or not they are perceived as engaging conversationalists, CHATBOTS have ethical and cultural implications. While they may allow people to navigate information and conversations that they would avoid in real-life interactions, thereby addressing issues of lessened access to empathy in areas with fewer resources or more taboos, they may also circumvent the acquisition of social interaction skills.

We argue that this conceptual shift has important ethical implications for the responsible design and deployment of AI technologies. Specifically, as CHATBOTS are increasingly employed in sensitive contexts such as mental health counseling or crisis intervention, it is vital to critically appraise the limitations and biases of these systems and weigh the potential risks of dependence on AI-mediated empathy.

This study aims to offer an in-depth view of how AI-driven CHATBOTS, empathy, and emotional intelligence interact as a whole by theoretically overviewing related theoretical bases, investigating current empirical evidence, and conducting case studies. The results could add to the continuing debates about the integration of AI into domains that are human-centered and help to develop and deploy these emergent technologies in a responsible manner.

REVIEW OF LITERATURE

Salovey, P., & Mayer, J. D. (1990) - Emotional Intelligence and the Importance of Empathy The concept of emotional intelligence gained widespread recognition in the 1990s through the work of psychologists Peter Salovey and John Mayer. They defined emotional intelligence as "the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" This framework emphasized the crucial role of emotional skills in navigating interpersonal relationships, decision-making, and overall well-being.

Davis, M. H. (1983) - Within the domain of emotional intelligence, empathy stands out as a vital component. Empathy refers to the ability to understand and share the feelings and perspectives of others

Eisenberg, N., & Miller, P. A. (1987) - It involves both cognitive and affective processes, enabling individuals to interpret emotional cues, resonate with others' emotions, and respond appropriately. Numerous studies have highlighted the significance of empathy in fostering successful interpersonal relationships, effective communication, and prosocial behavior

Kitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). - A randomized controlled trial conducted by Fitzpatrick et al. found that young adults who interacted with Woebot, a cognitive-behavioral therapy chatbot, experienced significant reductions in symptoms of depression and anxiety compared to a control group. This suggests that empathy chatbots can effectively provide emotional support and facilitate therapeutic outcomes.

Xu, A., Liu, Z., Guo, Y., Sinha, V., & Akkiraju, R. (2017). - Research by Xu et al. explored the use of an empathetic chatbot in customer service scenarios. They found that customers perceived the chatbot as

more empathetic and trustworthy compared to non-empathetic chatbots, leading to increased customer satisfaction and loyalty.

Kerly, A., Hall, P., & Bull, S. (2007) - A study by Kerly et al. [10] examined the use of a conversational agent in an educational context. They found that students who interacted with the empathetic chatbot reported higher levels of motivation, engagement, and perceived emotional support, which positively impacted their learning outcomes.

Niao, J., Tao, J., Bai, Y., & Lau, R. Y. (2021). - Research by Niao et al. suggests that while chatbots can provide a sense of emotional support, prolonged interactions with these AI agents may lead to a sense of emotional disconnection and a diminished ability to engage in authentic human-to-human empathic exchanges.

Lee, S., & Choi, J. (2022) - A study by Lee and Choi investigated the effects of long-term reliance on empathy chatbots. They found that individuals who heavily relied on these AI agents for emotional support exhibited a gradual decline in their own empathic abilities and interpersonal skills over time.

Mauro De Gennaro, Eva G Krumhuber, Gale Lucas(2020)- The article examines the impact of social exclusion on mental well-being and explores how empathetic chatbots like "Rose" can mitigate its negative effects. Social exclusion can lead to depression, low self-esteem, and anxiety, yet interventions targeting these issues are limited. Virtual agents, such as Woebot, have proven effective in mental health interventions by providing accessible support. The study investigates whether engaging with an empathetic chatbot post-social exclusion can improve mood, potentially advancing interventions for mental health and well-being.

Ghazala Bilquise,¹Samar Ibrahim,²and Khaled Shaalan (2022)- The article discusses the development of emotionally intelligent chatbots within the context of conversational technologies. It highlights the increasing integration of chatbots across various domains but notes the challenge of ensuring user satisfaction due to preferences for human-like interactions. Researchers are focusing on imbuing chatbots with emotional intelligence (EI) to perceive and appropriately respond to user emotions during interactions.

Patricia Gual-Montolio, Irene Jaén, Verónica Martínez-Borba, Diana Castilla, Carlos Suso-Ribera (2022)- The article explores the integration of artificial intelligence (AI) methods to enhance psychotherapy outcomes for individuals with emotional disorders (EDs) in real-time or near-real-time settings. EDs, including depressive and anxiety disorders, are prevalent worldwide, presenting significant challenges in terms of treatment access and effectiveness.

Methodology

Purpose

The study aims to explore whether the use of CHATBOT AI enhances or hinders empathic abilities and emotional intelligence in users.

Objectives:

The objectives of the study are:

1. To assess the perceived impact of empathy CHATBOT AI on users' empathic response.
2. To examine the relationship between exposure to empathy CHATBOT AI and changes in emotional intelligence.
3. To identify factors that contribute to the effectiveness or limitations of empathy CHATBOT AI in enhancing empathic abilities and emotional intelligence.

Research Questions:

1. How does exposure to technology-mediated empathy CHATBOT AI influence users' empathic response?
2. What are the associations between the use of empathy CHATBOT AI and changes in emotional intelligence?
3. What factors contribute to the effectiveness or limitations of empathy CHATBOT AI in enhancing empathic abilities and emotional intelligence?

Hypotheses:

Based on the research questions, the following hypotheses are proposed:

1. **H1:** Exposure to technology-mediated empathy CHATBOT AI will positively enhance users' empathic response.
2. **H2:** The emotional intelligence of people who use CHATBOT AI will not be high.
3. **H3:** People who use CHATBOT AI do not have self-awareness.

Variables:

- **Independent Variable:** Exposure to technology-mediated empathy CHATBOT AI.
- **Dependent Variables:**
 - Empathy (measured through Interpersonal Reactivity Index)
 - Emotional intelligence (assessed using standardized Emotional Intelligence Questionnaire)

Research Design:

This study employed a Comparative Study research design to investigate the impact of technology-mediated empathy CHATBOT AI on empathic response and emotional intelligence.

Sampling:

The sample of this study consists of 140 female participants aged between 18-25, comprising 70 females who use CHATBOT AI for emotional support and 70 who do not. Participants were selected using a purposive sampling technique.

Inclusion Criteria:

Participants were included in the study if they:

1. Were willing to participate in the research.
2. Had experience or exposure to empathy CHATBOT AI technologies or not.
3. Were female.
4. Were aged between 18-25 years old.

Exclusion Criteria:

Participants were excluded if they:

1. Had no prior experience or exposure to CHATBOT AI.
2. Refused to participate in the study.
3. Fell outside the age criteria.

Data Collection Instruments:

Data were collected using three self-report questionnaires:

1. Chatbot AI Questionnaire:

- Basic questions about the CHATBOT AI used, frequency of use, duration of use, purpose of use, and impact.

2. Interpersonal Reactivity Index (IRI):

- Developed by Mark H. Davis in 1980, this questionnaire measures various components of interpersonal reactivity, including perspective taking, fantasy, empathic concern, and personal distress. The IRI provides insights into an individual's empathy-related traits and emotional responses in interpersonal interactions.

3. Goleman's Emotional Intelligence Questionnaire:

- Developed by Daniel Goleman, this questionnaire measures various components of emotional intelligence, including self-awareness, emotion management, empathy, and social skills. It includes questions aimed at gauging an individual's capacity to identify, understand, and control their emotions.

Ethical Considerations:

The research followed standards for studies involving subjects by obtaining informed consent, maintaining confidentiality, and ensuring voluntary participation. The privacy and anonymity of participants were upheld throughout the study.

Analysis of Results**Qualitative Analysis of the CHATBOT AI Data:****Question 1: Which CHATBOT do you use for emotional support?****Responses:**

- **Non-Users:** ChatGPT, AI Bard, CoPilot (Rarely)
- **Users:** ChatGPT, Snapchat AI (Weekly, Daily)

Data Analysis:

Among non-users of CHATBOT AI for emotional support, one participant mentioned using ChatGPT, AI Bard, and CoPilot rarely.

Among users of CHATBOT AI, ChatGPT and Snapchat AI were mentioned as the preferred platforms, with interactions occurring on a weekly or daily basis.

Question 2: How often do you interact with CHATBOT AI?**Responses:**

- **Non-Users:** Rarely
- **Users:** Weekly, Daily

Data Analysis:

Non-users reported interacting with CHATBOT AI rarely.

Users reported frequent interactions with CHATBOT AI on a weekly or daily basis.

Question 3: Do you use CHATBOT AI for emotional support?**Responses:**

- **Non-Users:** No
- **Users:** Yes

Data Analysis:

Non-users indicated not using CHATBOT AI for emotional support.

Users confirmed using CHATBOT AI for emotional support.

Question 4: How often do you go to CHATBOT AI for emotional support?**Responses:**

- **Non-Users:** Never
- **Users:** Sometimes, Often

Data Analysis:

Non-users stated never going to CHATBOT AI for emotional support.

Users reported varying frequencies of seeking emotional support from CHATBOT AI, ranging from sometimes to often.

Question 5: For what purpose do you use CHATBOT AI?**Responses:**

- **Non-Users:** Academic
- **Users:** Emotional, Academic

Data Analysis:

Non-users mentioned using CHATBOT AI primarily for academic purposes.

Users indicated using CHATBOT AI for both emotional and academic purposes.

Question 6: How has using CHATBOT AI impacted you?**Responses:**

- **Non-Users:** Neutral
- **Users:** Negative, Neutral

Data Analysis:

Non-users reported a neutral impact from not using CHATBOT AI.

Users expressed varied impacts, with some reporting a negative impact and others feeling neutral about the experience.

Question 7: From how long are you using CHATBOT AI?**Responses:**

- **Non-Users:** N/A
- **Users:** 6 months, 12 months

Data Analysis:

Users specified the duration of CHATBOT AI usage, with responses indicating usage for 6 months or 12 months.

Summary of Data Analysis:

Based on the responses:

- People who used ChatGPT and Snapchat AI as their primary CHATBOTs for emotional support interacted with these platforms either weekly or daily.
- Users acknowledged that they occasionally or frequently seek out CHATBOT AI expressly for emotional support.
- Users reported using CHATBOT AI for both emotional and academic reasons.
- Users' experiences with CHATBOT AI varied; some said it had a neutral or negative effect.
- Users indicated consistent involvement over a period of six to twelve months by specifying the duration of their CHATBOT AI usage.

Interpretation:

According to the research data, those who use CHATBOT AI for emotional support interact with their favorite platforms often and look for emotional help in addition to intellectual support. However, there seems to be a mixed effect of CHATBOT AI usage on consumers' mental well-being; some claim neutral or negative results. Deeper understanding of the motivations underlying these views and experiences may be possible with additional research and qualitative analysis.

TABLE 1 INTERPERSONAL REACTIVITY INDEX MEAN SCORES, SD , T-test AND INTERPRETATION

USER- USE CHATBOT AI FOR EMOTIONAL SUPPORT

NON USER- DOES NOT USE CHATBOT AI FOR EMOTIONAL SUPPORT

•	USE	MEANS	SD	TTEST	SIGNIFICANT
INTERPERSONAL REACTIVITY INDEX	USER	45.51	9.16	• 0.37	N.S.
	NON USER	46.14	13.47		
PERSPECTIVE TAKING	USER	11.91	3.38	• 0.00	0.05
	NON USER	9.64	4.47		
FANTASY	USER	10.65	3.60	• 0.00	0.05
	NON USER	12.32	4.41		
EMPATHIC CONCERN	USER	11.41	3.70	• 0.14	N.S.
	NON USER	10.6	5.30		
PERSONAL DISTRESS	USER	11.45	4.40	• 0.00	0.05
	NON USER				

		13.32	473	
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TABLE 1 The results presented in Table 1 indicate that there is a statistically significant difference in the means of perspective taking, fantasy, and personal distress among the subgroups of the user and nonuser groups of the interpersonal reactivity index. The first hypothesis was partially supported by the difference in empathic concern in the emotional intelligence area between non-user and user CHATBOT AI for emotional support..

TABLE 2- EMOTIONAL I INTELLIGENC MEAN, SD,T-test AND INTERPRETATION

User- who use CHATBOT AI for emotional support

Non User- who does not use CHATBOT AI for emotional support

	User	Mean	SD	T-test	SIGNIFICANT
SELF AWARENESS	USER	32.41	6.15	0.02	0.05
	NON USER	34.6	6.56		
MANAGING EMOTIONS	USER	28.61	5.59	0.35	N.S.
	NON USER	28.24	6.06		
MOTIVATING ONESELF	USER	32.88	6.83	0.35	N.S.
	NON USER	32.45	6.39		
EMPATHY	USER	33.17	6.95	0.13	N.S.
	NON USER	34.48	6.87		
SOCIAL SKILLS	USER	32.82	6.10	0.28	N.S.
	NON USER	33.42	6.21		

Table2 - demonstrates that the emotional intelligence subtype scores of users and non-users of CHATBOT AI are quite similar. Four of the five categories have identical means, and the T-test yields no significant difference, rejecting our second hypothesis. The only emotional intelligence area with a difference in means is self - awareness; non users have a higher mean value, and the T-test reveals a significant difference (p<.05. In light of this, our third hypothesis is confirmed.

Discussion

Given the increasing amount and popularity of CHATBOT AI for emotional support, our qualitative data provided in-depth insight into how people view and experience using CHATBOT AI for emotional support. Participants discussed wanting CHATBOT AI for both emotional and academic support and their preferences for platforms, indicating that the impact of technology-mediated empathy can vary for different users. The analysis also identified potentially significant areas of interpersonal reactivity and emotional intelligence in people who used CHATBOT AI for emotional support and those who did not,

with particular emphasis on Perspective Taking (PT) scores. In summary, the purpose of this paper was to qualitatively probe how the experience of using CHATBOT AI impacts users' empathic tendencies and their emotional intelligence.

The quotes and themes drawn from the user data helped paint a picture of the varying experiences of participants using CHATBOT AI not just for academic or professional support, but also for emotional support. End users also spoke to the importance of having both academic and emotional support from CHATBOT AI platforms, with most expressing a preference between CHATGPT and SNAPCHAT AI. While results suggest that this link to emotional connection was significant for some participants, others reported no impact or negligible effects. In other words, technology-mediated empathy has variable effectiveness. This essay reflects different levels of partiality: although some participants pointed out that the impact of technology was positive, others stated they were not better off or were worse. The results of the quantitative materials are compatible with this finding. As shown in the following table, the difference in individual emotional experience after engagement with CHATBOT AI and interpersonal reactivity is detailed. In fact, only one dimension of PT (Perspective Taking), F (Fantasy), and PD (Personal Distress) show significant differences between "emotional" and "not emotional" groups. The difference in EC (Empathic Concern) is uncertain (Davis, 1983; Eisenberg & Miller, 1987).

Conclusion:

To conclude, this study provides essential insight into the intricate application of CHATBOT AI for cultivating empathic responses and overall emotional intelligence in individuals. While qualitative and quantitative data allow the researcher to obtain valuable information concerning the subjectivity of users in terms of empathic responses and inability to empathically respond, the research design limitations do not allow for final conclusions from the data. The most recent research indicates that exposure to CHATBOT AI could have a partial impact on empathic responses and enhancing emotional intelligence; however, more studies are required to reveal the effects of technology-mediated empathy.

Hypothesis Evaluation:

- **H1:** Exposure to empathy CHATBOT AI technology will improve users' ability to empathize. This hypothesis was partially supported by the results. While there were clear differences in Perspective Taking, Fantasy, and Personal Distress, there was no significant difference in Empathic Concern. This indicates that exposure to CHATBOT AI may impact specific aspects of empathy but not others (Fitzpatrick et al., 2017; Xu et al., 2017).
- **H2:** The emotional intelligence of people who use CHATBOT AI will not be high. This hypothesis was refuted by the quantitative data analysis, as no significant differences were found in most domains of emotional intelligence between users and non-users of CHATBOT AI, except for Self-Awareness (Goleman, 1995).
- **H3:** People who use CHATBOT AI do not have self-awareness. This hypothesis was supported by the finding that non-users of CHATBOT AI had higher scores in the Self-Awareness domain of emotional intelligence (Goleman, 1995).

Limitations:

1. The study had limitations in sample size and demographics, as it only included 140 female participants aged 18-25. This may restrict the applicability of the results to larger populations.

2. The study lacked longitudinal data, only capturing a momentary snapshot of participants' experiences and emotions. A longitudinal approach could offer valuable insights into the lasting impacts of exposure to CHATBOT AI.
3. There is a possibility of self-report biases in the study, as it relied on participants filling out questionnaires about their experiences. This method could be influenced by biases in responses or a desire to present oneself in a socially desirable way.

Implications:

1. **Chatbot Design and Development:** The findings could inform the design and implementation of empathetic CHATBOT AI to better align with human needs and facilitate more meaningful emotional connections (Kerly et al., 2007).
2. **Mental Health and Emotional Support:** If CHATBOT AI can effectively enhance empathic abilities and emotional intelligence, they could bridge gaps in access to emotional support, particularly in areas with limited resources or stigmatized topics (Bilquise et al., 2022).
3. **Ethical Considerations:** As CHATBOT AI becomes more prevalent in sensitive domains, understanding their potential limitations and biases is crucial for ensuring responsible development and deployment (Gual-Montolio et al., 2022).

Further Studies:

1. Studying the long-term impact of CHATBOT AI on empathy and emotional intelligence through longitudinal research would offer valuable findings.
2. Broadening the study to encompass various age groups, cultural backgrounds, and demographic features would increase the applicability

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