

The Role Of Chatbots In Reducing Loneliness Among Young Adults: A Descriptive Literature Review

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ABSTRACT

This study examined the role of chatbot as a technology which addresses loneliness among adults in the context of mental health. Loneliness has become a growing psychosocial problem associated with varied negative outcomes, both psychologically and physically, particularly among adults experiencing social isolation. This research aimed to explore both the potential benefits and risks of chatbot usage in reducing perceived loneliness and supporting young adults' mental well-being. A descriptive literature review method was employed and relevant articles were systematically identified from reputable and distinguished academic databases. Predefined keywords were used to identify the articles related to chatbots, artificial intelligence, and loneliness. A total of 1,658 articles were screened, resulting in four literatures that met the inclusion criteria and were analysed in depth. The findings indicated that chatbots contributed positively by providing emotional support, enhancing social presence, improving access to mental health assessment, and reducing perceived loneliness, specifically among socially isolated adults. However, excessive reliance on chatbots was associated with potential risks such as social disengagement, emotional overattachment, limited emotional understanding, and concerns regarding data privacy. In conclusion, chatbot-based technology demonstrated significant potential as a support for mental health tools, but the implementation should be carefully designed with personalisation, ethical considerations, and user safety to ensure sustainable psychological benefits.

Keywords:

Chatbot, Artificial Intelligence, Loneliness, Mental Health, Young Adult

1. INTRODUCTION

Mental health constitutes a global issue that remains challenging to address. According to the World Health Organisation (WHO), in 2019, one in every eight individuals or approximately 970 million people worldwide was living with a mental disorder (WHO, 2022). Mental health conditions encompass mental disorders and psychosocial disabilities, as well as other mental conditions related to significant pressure, functional impairment, or increased risks of self-harm. Multiple factors contribute to mental health outcomes, including individual, familial, community, and structural determinants, which may interact to either protect or undermine mental well-being (WHO, 2022). Among these, individual-level factors are closely linked to the quality of interpersonal relationships. In other words, individuals who lack adequate social networks are more susceptible to experiencing loneliness, a condition that is increasingly prevalent among adults.

Loneliness is a widespread phenomenon that is often experienced by individuals across different regions of the world. Approximately 15-30% of people experience persistent feelings of loneliness (Heinrich & Gullone, 2006). Loneliness is classified as a consequence of insufficient positive and satisfying social relationships. Weiss (as cited in Taylor, 2020) conceptualised loneliness from a social deficit perspective, suggesting that individuals who experience loneliness possess limited social relationships with others. Similarly, Wheeler et al. (1983) defined loneliness as the absence of meaningful social participation. Thus, loneliness can be understood as an emotional state that emerges when individuals perceive their social relationships as inadequate, unsatisfying, and lacking in meaning.

Adults are particularly vulnerable to experiencing loneliness due to several factors, including environmental changes or life transitions, separation from family or friends, and poor quality or insufficient social skills. These conditions often result in reduced social support and feelings of

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alienation, thereby intensifying loneliness (Agustine & Dariyo, 2024; Aviva & Jannah, 2023; Irmansyah & Ningrat, 2024). If not adequately addressed, loneliness can have serious consequences for cognition, emotion, behaviour, and overall health. Consistent with this, Klein et al. (2021) found that loneliness is associated with various forms of psychological distress and has broad implications for individual well-being. To prevent the development of more severe mental health disorders, effective strategies are required to reduce experienced loneliness. One potential approach involves the utilisation of emerging technologies, particularly artificial intelligence (AI).

AI has become an increasingly prominent technology offering solutions in everyday life, including for adults. Over time, AI systems have incorporated numerous features that extend into the emotional domain. In this context, AI is designed to recognise, learn from, and interact with human emotions (Thakkar et al., 2024). Among the most relevant AI applications are conversational agents, commonly referred to as chatbots. Chatbots are artificial intelligence programs developed to interact with users and simulate natural human conversation (Rodríguez-Martínez et al., 2023). The use of chatbots has expanded rapidly as a means of enhancing mental health and psychological well-being (Booth et al., 2023). Their functions include providing medical assistance, delivering psychoeducation, offering appointment reminders, improving work efficiency, and supporting the monitoring and evaluation of daily emotions and personal well-being.

The implementation of chatbot-based interventions represents a promising approach, particularly for adults who are closely engaged with digital technology and prefer online access. Digital tools offer personalised support while reducing common barriers associated with traditional face-to-face services, such as stigma and limited accessibility (Ridout et al., 2024). Through technological integration, chatbots can deliver timely support and assist in promoting mental health for individuals seeking help in the context of reduced social participation.

2. METHOD

Research Design

This study employed a descriptive literature review design, which aims to analyse, synthesise, and interpret findings from existing research in order to develop a comprehensive understanding of a given phenomenon (Kraus et al., 2022). This approach was selected to systematically examine the role of chatbot use in relation to loneliness among adults.

Data Sources and Search Strategy

A structured literature search was conducted across multiple academic databases, including ScienceDirect, Emerald Insight, and other relevant scholarly platforms. The search focused on publications addressing the role of chatbots in adult loneliness. The following keywords and their combinations were used: *conversational agent*, *artificial intelligence*, *chatbot*, and *loneliness*. The initial search yielded 1,658 articles, which were downloaded and imported into the online screening platform Rayyan AI to facilitate the review process.

Screening and Selection Process

The screening procedure followed a multi-stage process. First, duplicate records were removed, resulting in 1,598 unique articles. Next, the title and abstract were screened using predefined inclusion and exclusion criteria. This stage was done entirely through the Rayyan platform to ensure consistency and transparency in the selection process. Through this screening stage, 29 articles were identified as potentially relevant. These articles were then subjected to a full-text review and discussed collectively by the three researchers to determine their suitability for inclusion. Following this consensus-based evaluation, four articles were selected for final analysis and synthesis.

Data Analysis and Synthesis

Previously selected articles were systematically examined and synthesised to identify recurring patterns, themes, and key findings related to the role of chatbots in addressing loneliness among adults. The results of this synthesis are presented in the Results section of this study.

3. RESULT AND DISCUSSION

Result

The role of chatbots in addressing loneliness among young adults based on four selected articles. The findings indicate that chatbot use exerts both positive and negative effects on loneliness and overall mental health.

First, the reviewed studies consistently reported that chatbots can provide emotional support and companionship for adults experiencing social isolation. Users perceived chatbot interactions as empathetic, supportive, and capable of meeting emotional needs, which contributed to enhanced psychological well-being and reduced feelings of loneliness (Alotaibi & Alshahre, 2024; Kang & Hong, 2025). Secondly, chatbots were found to be effective tools for mental health assessment and early symptom detection. Chatbot-based assessment demonstrated strong validity and provided accessible mental health screening, particularly for individuals who face barriers to conventional healthcare services (Schick et al., 2022).

Several limitations were also identified, however. Frequent reliance on chatbots as emotional companions, especially among young adults, was associated with higher levels of loneliness, weaker interpersonal relationships, and increased social disconnection (Herbener & Damholdt, 2025). Furthermore, users reported that chatbot responses were often generic, repetitive, and insufficiently personalised, thus limiting emotional authenticity (Kang & Hong, 2025). In the context of mental health assessment, chatbot use was perceived as more time-consuming and cognitively demanding than traditional methods (Schick et al., 2022). Finally, concerns regarding data privacy and confidentiality also emerged as significant challenges in personalised chatbot design (Kang & Hong, 2025).

Discussion

Results from this review suggests that chatbots function as both a positive and negative intervention tool as they offer meaningful emotional and practical support while also simultaneously introducing new psychological and ethical risks.

The positive effects observed in this review align with existing theories of social support, which emphasise the importance of emotional availability and perceived companionship in reducing loneliness and enhancing well-being. Chatbots appear capable of fulfilling aspects of emotional support traditionally provided by human relationships, particularly for individuals facing social isolation or limited access to mental health services. These findings extend prior literature by demonstrating how technological agents can partially substitute social interaction in emotionally vulnerable populations.

Conversely, the negative consequences highlight critical theoretical concerns regarding social displacement and emotional dependency. Excessive emotional reliance on chatbots may undermine the development and maintenance of human relationships, reinforcing loneliness rather than alleviating it. This phenomenon supports existing concerns in human-computer interaction research that artificial social agents may weaken real-world social engagement when used as primary emotional companions. Moreover, the limitations related to personalisation and emotional depth suggest that while chatbots can simulate empathy, they lack genuine emotional understanding. This reinforces the conceptual distinction between perceived empathy and authentic human empathy. The privacy risks identified further complicate the ethical implementation of chatbot-based mental health interventions, emphasising the need for responsible design frameworks that integrate psychological safety with technological innovation.

These findings contribute to emerging theoretical perspectives on digital companionship, highlighting the necessity of balancing technological assistance with the preservation of human social bonds.

4. CONCLUSION

Chatbots have a significant role in helping young adults regulate their perceived loneliness by providing emotional support, companionship, and accessible mental health assessment. However, overreliance on chatbots as primary emotional companions may intensify social isolation, impair pre-existing interpersonal relationships, and raise serious concerns regarding emotional dependency and data privacy.

Based on these findings, several practical recommendations are proposed. Mental health practitioners and technology or software developers should design chatbot interventions that complement rather than replace human relationships. Developers are advised to prioritise ethical design principles which include data privacy protection, emotional safety, and balanced personalisation. In addition, educational institutions and mental health organisations should provide guidance on healthy chatbot usage, especially among young adults, emphasising its supportive role rather than substituting for real social interaction.

Future researchers are also encouraged to explore the long-term psychological effects of chatbot usage across different adult age groups and to develop models which integrate digital companionship within broader social and mental health frameworks.

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