



Conceptualizing the Impact of AI Companion Usage on University Students' Loneliness and Emotional Well-Being: Implications for Counseling Practice

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ABSTRACT

The rapid adoption of artificial intelligence (AI) companions has transformed the ways university students seek emotional support, communicate, and regulate psychological well-being. While AI companions offer opportunities for emotional expression and perceived social support, their psychological consequences remain inconsistent across existing studies, particularly regarding loneliness and emotional well-being. This study aims to develop an integrative conceptual framework explaining the psychological mechanisms through which AI companion usage influences university students' loneliness and emotional well-being and to identify its implications for counseling practice in higher education. A conceptual paper approach was employed following Jaakkola's framework for theory development through critical synthesis and integration of interdisciplinary literature from psychology, counseling, education, and human-computer interaction. The analysis indicates that AI companion usage influences psychological outcomes through four key mechanisms: perceived social support, emotional disclosure, cognitive reappraisal, and parasocial attachment. These mechanisms generate two contrasting pathways. Adaptive AI use may reduce loneliness and enhance emotional well-being by strengthening emotional regulation and perceived social connectedness, whereas excessive or emotionally dependent use may increase social withdrawal, emotional dependency, and psychological vulnerability. Based on these findings, this study proposes a theory-informed conceptual framework that positions AI companions as complementary rather than substitutive sources of emotional support. The proposed framework contributes to the literature by integrating fragmented evidence across disciplines and offers practical guidance for developing technology-informed counseling services that promote responsible AI use while strengthening authentic interpersonal relationships among university students.

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1. INTRODUCTION

The rapid advancement of artificial intelligence (AI) has fundamentally transformed the way individuals interact with digital technologies, extending beyond information retrieval and task automation into domains traditionally associated with human social interaction (Zhang et al., 2025; Shokeen & Pandey, 2026). Recent developments in generative AI have accelerated the emergence of AI companions conversational systems designed to engage users through personalized, empathetic, and context-aware interactions which are increasingly embedded in everyday life. Applications such as Character.AI, Replika, Pi AI, and other conversational agents have attracted millions of users worldwide, reflecting a growing tendency for individuals to interact with AI not merely as digital tools but also as perceived social partners capable of providing companionship, emotional expression, and psychological support (Zhang et al., 2025; Liu et al., 2026; Sun et al., 2026). This rapid adoption suggests that AI is progressively reshaping interpersonal communication patterns and the ways individuals seek emotional support in the digital era.

Unlike conventional AI applications that primarily facilitate productivity, information processing, or academic assistance, AI companions are specifically designed to simulate interpersonal communication by providing continuous, responsive, and emotionally adaptive interactions (Fang et al., 2025; Liu et al., 2026). Their increasing popularity reflects a broader shift in the role of AI from functional assistance toward socio-emotional engagement. Consequently, AI companions have begun to occupy a unique position at the intersection of technology, psychology, and interpersonal communication, raising important questions regarding their influence on users' emotional experiences, social connectedness, and mental health.

From a theoretical perspective, interactions between humans and AI companions can be understood through the Computers Are Social Actors (CASA) paradigm, which posits that individuals naturally apply social norms, interpersonal expectations, and emotional responses when interacting with intelligent technologies that display human-like characteristics. This perspective suggests that AI companions may evoke feelings of trust, empathy, attachment, and perceived social presence despite users' awareness that they are communicating with artificial systems. Complementing the CASA framework, Social Support Theory proposes that perceived emotional support regardless of its source may influence individuals' psychological adjustment and emotional well-being. Together, these theoretical perspectives provide a useful foundation for understanding why AI companions may function as perceived sources of companionship while simultaneously creating new psychological risks associated with emotional dependency and reduced real-world social interaction.

University students represent one of the demographic groups with the highest levels of AI adoption for both academic purposes and everyday interactions (Crawford et al., 2024; Zhang et al., 2025). Within higher education, the use of AI chatbots and virtual companions has expanded beyond learning assistance to include discussions of personal concerns, emotional support, stress management, and coping with social anxiety (Isaiah et al., 2026; Xie & Wang, 2024). This trend reflects the increasing reliance of young adults on digital technologies to regulate emotions, seek reassurance, and navigate personal challenges during an important developmental stage characterized by identity formation, academic adjustment, and expanding social relationships. Consequently, the growing integration of AI companions into students' daily lives raises critical questions regarding whether these technologies foster healthy psychological adaptation or unintentionally reinforce social withdrawal, emotional dependency, and reduced interpersonal engagement.

Loneliness has become one of the most significant psychological concerns affecting university students worldwide (Ellard et al., 2022; Riboldi et al., 2025). The transition to higher education often involves academic pressure, relocation, financial challenges, changing social environments, and separation from established support networks, all of which may contribute to feelings of loneliness. Longitudinal evidence consistently demonstrates that loneliness is associated with increased anxiety, depression, perceived stress, and poorer mental health outcomes among university students (Richardson et al., 2017). Similarly, cross-national studies have reported significant relationships between loneliness and depressive symptoms, anxiety, insomnia, diminished psychological well-being, and reduced academic engagement (Dingle et al., 2022; Riboldi et al., 2025). Furthermore, systematic reviews indicate that interventions emphasizing meaningful social connectedness tend to be more effective in alleviating loneliness than approaches relying solely on psychoeducation (Ellard et al., 2022). These findings underscore the importance of identifying emerging factors that may either reduce or exacerbate loneliness in contemporary university settings.

Emotional well-being has likewise emerged as a fundamental indicator of students' overall mental health, academic success, and personal development (Alzahrani, 2025; Riboldi et al., 2025). Students who experience limited social interaction, persistent loneliness, and academic difficulties generally report lower psychological well-being, whereas a stronger sense of belonging, supportive peer relationships, and effective interpersonal communication are consistently associated with more positive mental health outcomes (Lin, 2016; Dingle et al., 2022; Crawford et al., 2024). As digital technologies increasingly mediate students' emotional experiences, understanding whether AI companions enhance or undermine emotional well-being has become an important concern for university counseling services seeking to provide effective, technology-informed psychological support (Isaiah et al., 2026; Xie & Wang, 2024).

Emerging empirical evidence suggests that AI companions may influence users' psychological experiences through multiple and sometimes contradictory mechanisms (Liu et al., 2026; Alzahrani, 2025). Rather than exerting direct psychological effects, interactions with AI companions may shape users' perceived social support, opportunities for emotional disclosure, self-reflection, cognitive reappraisal, parasocial attachment, and emotion regulation, which subsequently influence loneliness and emotional well-being. On the one hand, AI companions may provide a non-judgmental, continuously available environment that facilitates emotional expression, encourages self-reflection, and offers perceived emotional support (Isaiah et al., 2026; Xie & Wang, 2024). Supporting this perspective, a recent systematic review and meta-analysis of randomized controlled trials reported that AI chatbots produced small-to-moderate improvements in reducing depression, anxiety, and psychological distress among adolescents and young adults, although their impact on enhancing positive well-being remained relatively modest (Feng et al., 2025).

On the other hand, accumulating evidence also indicates potential psychological risks associated with intensive AI companion use. Excessive emotional reliance on AI companions has been associated with higher levels of depression, anxiety, loneliness, emotional dependency, problematic AI use, and diminished real-world social interaction (Fang et al., 2025; Kiran et al., 2026; Zhang et al., 2025). Several studies further suggest that users may develop parasocial or attachment-like relationships with AI companions when they perceive emotional warmth, psychological safety, and supportive communication (Xie & Pentina, 2022; Zhang et al., 2025). Although such relationships may temporarily reduce loneliness and strengthen subjective well-being or self-concept clarity (Liu et al., 2026), other findings indicate that AI companionship is more frequently

adopted by individuals with limited social networks and may ultimately be associated with lower psychological well-being when interactions become excessively intensive and emotionally dependent (Zhang et al., 2025). These contrasting findings indicate that AI companions may function as complementary sources of emotional support but are unlikely to substitute for the complexity, reciprocity, and authenticity of human relationships (Alzahrani, 2025; Isaiah et al., 2026; Zhang et al., 2025).

Despite the rapid expansion of research on generative AI, the higher education literature continues to focus predominantly on academic integrity, learning support, assessment, productivity, and ethical concerns, while comparatively less attention has been devoted to the socio-emotional consequences of AI companion usage (Crawford et al., 2024). Existing studies examining the relationships among AI companion usage, loneliness, emotional well-being, and counseling practice remain fragmented across psychology, communication, education, and human–computer interaction. Moreover, previous research has primarily documented direct associations between AI companion use and psychological outcomes, with relatively limited attention given to the psychological mechanisms that explain why AI companions appear beneficial for some users while potentially harmful for others (Crawford et al., 2024; Liu et al., 2026; Zhang et al., 2025). Consequently, there remains a need for an integrative conceptual framework capable of synthesizing these diverse perspectives and explaining the conditions under which AI companions function as protective emotional resources or psychosocial risk factors.

From the perspective of counseling practice, this knowledge gap is particularly important. As AI companions increasingly become platforms through which university students disclose personal concerns, regulate emotions, and seek companionship, counselors can no longer regard these technologies as peripheral to students' psychological lives. Instead, counseling professionals need a comprehensive understanding of how AI companion usage shapes emotional functioning, influences help-seeking behaviors, and affects the quality of students' interpersonal relationships. Such understanding is essential not only for identifying potential risks including emotional dependency, avoidance of human interaction, and maladaptive coping but also for recognizing opportunities to integrate AI-assisted technologies ethically and responsibly into preventive mental health services, psychoeducation, and counseling interventions within higher education.

Rather than providing another narrative review of the existing literature, this conceptual paper develops a theory-informed framework that integrates perspectives from psychology, counseling, communication, and human–computer interaction to explain the potential pathways through which AI companion usage influences university students' loneliness and emotional well-being. Specifically, the proposed framework conceptualizes AI companion usage as a factor that may shape perceived social support, emotional disclosure, cognitive reappraisal, and parasocial attachment, which subsequently influence loneliness and emotional well-being while generating important implications for counseling practice. By integrating these interdisciplinary perspectives, this study contributes to the literature in three principal ways. First, it synthesizes fragmented evidence regarding the psychological consequences of AI companion usage within higher education. Second, it proposes an integrative conceptual framework that explains the mechanisms linking AI companion use, loneliness, and emotional well-being. Third, it identifies practical implications for technology-informed counseling services and provides theoretical directions for future empirical research investigating the role of AI companions in promoting students' mental health and psychosocial adjustment.

2. METHODS

This study employed a conceptual paper approach to develop an integrative framework explaining the relationships between AI companion usage, loneliness, emotional well-being, and their implications for counseling practice among university students. Following the conceptual paper methodology proposed by Jaakkola (2020), this study aimed to synthesize existing theoretical and empirical knowledge, identify conceptual gaps, and develop a theory-informed framework to guide future research and counseling practice.

The literature was collected from reputable academic databases, including Scopus, Web of Science, ScienceDirect, SpringerLink, Taylor & Francis Online, Wiley Online Library, IEEE Xplore, ACM Digital Library, and Google Scholar. The search primarily focused on publications from 2020–2026 to capture recent developments in generative AI and AI companion technologies, while seminal studies published before this period were included when relevant to foundational concepts such as loneliness, emotional well-being, social support, and human–computer interaction. Keywords included *AI companion*, *conversational AI*, *AI chatbot*, *loneliness*, *emotional well-being*, *mental health*, *university students*, *higher education*, *counseling*, *social support*, and *parasocial relationship*.

Relevant peer-reviewed journal articles, systematic reviews, and theoretical studies were selected based on their conceptual relevance, methodological quality, and contribution to understanding the psychological effects of AI companion usage. The selected literature was analyzed through thematic synthesis, in which recurring concepts, theoretical perspectives, and empirical findings were critically compared and organized into broader conceptual categories. Particular attention was given to the psychological mechanisms linking AI companion usage with loneliness and emotional well-being, including perceived social support, emotional disclosure, cognitive reappraisal, and parasocial attachment.

Finally, these concepts were integrated using the Computers Are Social Actors (CASA) paradigm and Social Support Theory to construct an interdisciplinary conceptual framework. Rather than testing hypotheses empirically, this study proposes theoretically grounded relationships that explain both the potential benefits and risks of AI companion usage while providing practical implications for technology-informed counseling services in higher education.

3. RESULTS AND DISCUSSION

Conceptualizing AI Companion Usage among University Students

The synthesis of the contemporary literature indicates that AI companion usage among university students represents a fundamental shift in the role of artificial intelligence from a productivity-oriented technology to a socio-emotional interaction partner. While earlier generations of AI were primarily designed to support information retrieval, task completion, and academic performance, recent advances in generative AI have enabled conversational systems to simulate empathy, maintain contextual conversations, and provide personalized emotional responses. Consequently, AI companions increasingly occupy a unique position within students' daily lives, functioning not only as learning assistants but also as platforms for emotional expression, self-reflection, and companionship (Zhang et al., 2025; Liu et al., 2026).

Unlike conventional social media, AI companions provide continuous availability, immediate responses, and non-judgmental interactions. These characteristics reduce barriers to emotional disclosure, particularly among students who experience loneliness, social anxiety, or concerns about being negatively evaluated by others (Isaiah et al., 2026; Xie & Wang, 2024). Within this context, AI

companions can be understood as an emerging form of digital social support, enabling students to discuss personal concerns, regulate emotions, and receive perceived psychological reassurance at any time.

However, the literature consistently demonstrates that the psychological influence of AI companions is neither universally positive nor inherently harmful. Instead, the outcomes appear to depend on the intensity, purpose, and psychological characteristics of users. Moderate and purposeful interactions may facilitate emotional regulation, reflective thinking, and perceived social support, whereas excessive dependence on AI companions may reduce motivation for authentic interpersonal communication and increase emotional reliance on artificial relationships (Fang et al., 2025; Zhang et al., 2025). These contrasting findings suggest that AI companion usage should be conceptualized as a double-edged phenomenon, capable of functioning as either a protective psychological resource or a psychosocial risk factor depending on individual and contextual conditions. Based on the synthesis of the reviewed literature, AI companion usage among university students can be conceptualized through three interrelated dimensions that determine its potential psychological consequences.

Table 1. Conceptual Dimensions of AI Companion Usage among University Students

Dimension	Characteristics	Potential Psychological Outcomes
Functional use	Academic assistance, information seeking, problem solving, learning support	Improved academic self-efficacy, reduced academic stress
Emotional use	Emotional disclosure, companionship, stress relief, self-reflection	Increased perceived emotional support, improved emotional regulation, reduced loneliness
Dependent use	Excessive interaction, emotional reliance, substitution for human relationships	Emotional dependency, social withdrawal, problematic AI use, reduced psychological well-being

Table 1 illustrates that AI companion usage extends beyond a single behavioral pattern. Rather, students engage with AI companions for different purposes, each associated with distinct psychological consequences. Functional use is primarily directed toward educational goals and generally produces adaptive outcomes. Emotional use reflects the growing role of AI as a source of perceived social support and may contribute positively to emotional well-being when used in moderation. In contrast, dependent use represents maladaptive engagement characterized by excessive emotional reliance on AI companions at the expense of authentic interpersonal relationships. This distinction helps explain why previous empirical findings regarding AI companions remain inconsistent across studies.

From the perspective of the Computers Are Social Actors (CASA) paradigm, these differences emerge because users tend to respond to human-like AI using interpersonal norms, emotional expectations, and social behaviors typically reserved for human relationships. As AI companions become increasingly capable of demonstrating empathy, remembering personal information, and adapting conversational styles, users may gradually perceive them as emotionally meaningful interaction partners. Simultaneously, Social Support Theory suggests that perceived emotional support whether originating from humans or intelligent technologies can positively influence psychological adjustment when it complements rather than replaces real-world social relationships.

Accordingly, the present conceptual synthesis proposes that the psychological impact of AI companion usage cannot be adequately explained by frequency of use alone. Instead, the interaction between usage purpose, psychological engagement, and social context determines whether AI companions function as adaptive emotional resources or become potential contributors to loneliness and diminished emotional well-being. This proposition provides the conceptual foundation for understanding the psychological mechanisms discussed in the following section.

The Psychological Mechanisms Linking AI Companion Usage to Loneliness and Emotional Well-Being

The relationship between AI companion use and psychological outcomes is increasingly understood as a multidimensional psychosocial process rather than a simple cause-and-effect relationship. Recent evidence suggests that AI companions influence loneliness and emotional well-being through several interconnected psychological mechanisms, including perceived social support, emotional disclosure, cognitive reappraisal, and parasocial attachment. These mechanisms operate simultaneously and interactively, shaping both the beneficial and potentially harmful consequences of long-term AI companionship (Kim et al., 2025; Merrill et al., 2025; Kirk et al., 2025). Consequently, AI companions should not merely be conceptualized as communication technologies but as interactive socio-emotional environments capable of facilitating emotional regulation, interpersonal connectedness, and psychological adaptation while simultaneously introducing new forms of relational dependency (Yuan et al., 2025; Zhang et al., 2025; Kirk et al., 2025).

Among these mechanisms, perceived social support has emerged as the most consistently reported pathway. AI companions that provide immediate, empathic, and continuously available responses are frequently perceived as reliable sources of emotional validation, companionship, and psychological reassurance, particularly for individuals experiencing loneliness, social anxiety, or limited access to supportive human relationships (Kim et al., 2025; Merrill et al., 2025; Dohnány et al., 2026). Unlike conventional digital communication platforms, AI companions offer uninterrupted interaction without fear of rejection or negative social evaluation, thereby creating a psychologically safe environment for emotional engagement. Evidence among university students demonstrates that users of Replika frequently report levels of perceived support substantially higher than expected given their offline social circumstances, indicating that emotional support generated through AI interactions may possess genuine psychological value despite originating from non-human agents (Maples et al., 2024). Nevertheless, this supportive function appears to be conditional rather than universally beneficial. Crawford et al. (2024) found that although AI-generated support may temporarily buffer loneliness, support received from family members and close friends remains substantially more protective against chronic loneliness, suggesting that AI support complements rather than replaces authentic interpersonal relationships.

A second mechanism concerns emotional disclosure. AI companions create conversational environments characterized by privacy, non-judgmental responses, and minimal social cost, conditions that encourage users to disclose personal concerns, emotional vulnerabilities, and psychologically sensitive experiences more openly than they might with other people (Kim et al., 2025; Laban et al., 2023; Laban et al., 2025). Longitudinal evidence involving social robots indicates that repeated self-disclosure gradually strengthens emotional comfort, improves mood, and reduces feelings of loneliness over time, highlighting disclosure as an important mediator linking AI interaction with short-term emotional adjustment (Laban et al., 2023; Laban et al., 2025). Similarly, Kim et al. (2025) reported that lower levels of self-disclosure during AI interactions predicted greater

loneliness several weeks later among university students, suggesting that the psychological benefits of AI companions depend not only on technological availability but also on users' willingness to actively engage in reflective emotional communication.

Beyond emotional expression, AI companions may also facilitate cognitive reappraisal. Through structured dialogue, reflective questioning, and emotionally supportive feedback, AI systems can help users reorganize stressful experiences, reinterpret personal difficulties, and construct more adaptive coping strategies in response to academic and personal challenges (Laban et al., 2025; Brisson et al., 2025). Experimental studies involving caregivers demonstrated that repeated reflective conversations with social robots promoted more positive appraisals of caregiving responsibilities while simultaneously reducing tendencies toward external blame (Laban et al., 2025). These findings suggest that conversational AI can function as a cognitive scaffold that supports adaptive emotional regulation. However, this mechanism also depends heavily on system design. Excessively affirming AI responses may unintentionally reinforce maladaptive beliefs, cognitive distortions, or unrealistic interpretations when corrective feedback is absent, particularly among psychologically vulnerable users (Hudon & Stip, 2025; Dohnány et al., 2026).

The fourth mechanism involves the development of parasocial attachment. As AI companions increasingly exhibit conversational continuity, personalization, emotional warmth, and autobiographical memory, users may gradually perceive them not merely as technological tools but as psychologically meaningful companions or attachment figures (Xie & Pentina, 2022; Zhang et al., 2025; Kirk et al., 2025). Research on Replika users demonstrates that individuals experiencing emotional distress or insufficient human companionship frequently develop attachment-like relationships with conversational agents because these systems consistently provide reassurance, encouragement, and emotional availability (Xie & Pentina, 2022). Moderate levels of such attachment have been associated with reduced loneliness, improved subjective well-being, and greater self-concept clarity (Liu et al., 2026), indicating that emotional bonding with AI is not inherently detrimental.

Nevertheless, the same attachment mechanism may evolve into emotional dependency under conditions of intensive or prolonged use. Qualitative and longitudinal studies have documented the emergence of attachment-like dynamics characterized by reliance, separation distress, and the perception of AI companions as "friends rather than tools" (Yuan et al., 2025; Kirk et al., 2025). Once AI relationships begin substituting rather than complementing human interactions, users may become less motivated to initiate or maintain offline relationships, potentially increasing social withdrawal and reinforcing persistent loneliness (Yuan et al., 2025). Recent conceptual work further describes this phenomenon as pseudo-intimacy or emotional solipsism, referring to emotionally comforting but fundamentally one-sided relationships that may gradually reduce individuals' tolerance for interpersonal conflict, reciprocal communication, and the complexities inherent in authentic human relationships (Brisson et al., 2025).

Taken together, these findings suggest the existence of two competing psychological pathways through which AI companions influence emotional well-being. The adaptive pathway emerges when AI functions as a complementary resource that enhances perceived social support, facilitates emotional disclosure, and promotes cognitive reappraisal. Under these conditions, AI interaction is associated with lower loneliness, improved emotional well-being, and, in some cases, greater engagement in offline social relationships (Kim et al., 2025; Liu et al., 2026; Maples et al., 2024). In contrast, the maladaptive pathway develops when intensive AI use encourages emotional

dependency, excessive affirmation without cognitive correction, and progressive substitution of human relationships with artificial companionship. These processes have been associated with social withdrawal, increased expressions of loneliness, and limited long-term psychosocial benefits despite continued AI engagement (Zhang et al., 2025; Kirk et al., 2025).

Accordingly, AI companion use should be conceptualized as a dynamic psychosocial process rather than a single behavioral variable. Its influence on loneliness and emotional well-being is contingent upon users' motivations, interaction intensity, the availability of offline social support, and, critically, whether AI serves as a complement to or a substitute for meaningful human relationships (Brisson et al., 2025; Yuan et al., 2025; Zhang et al., 2025).

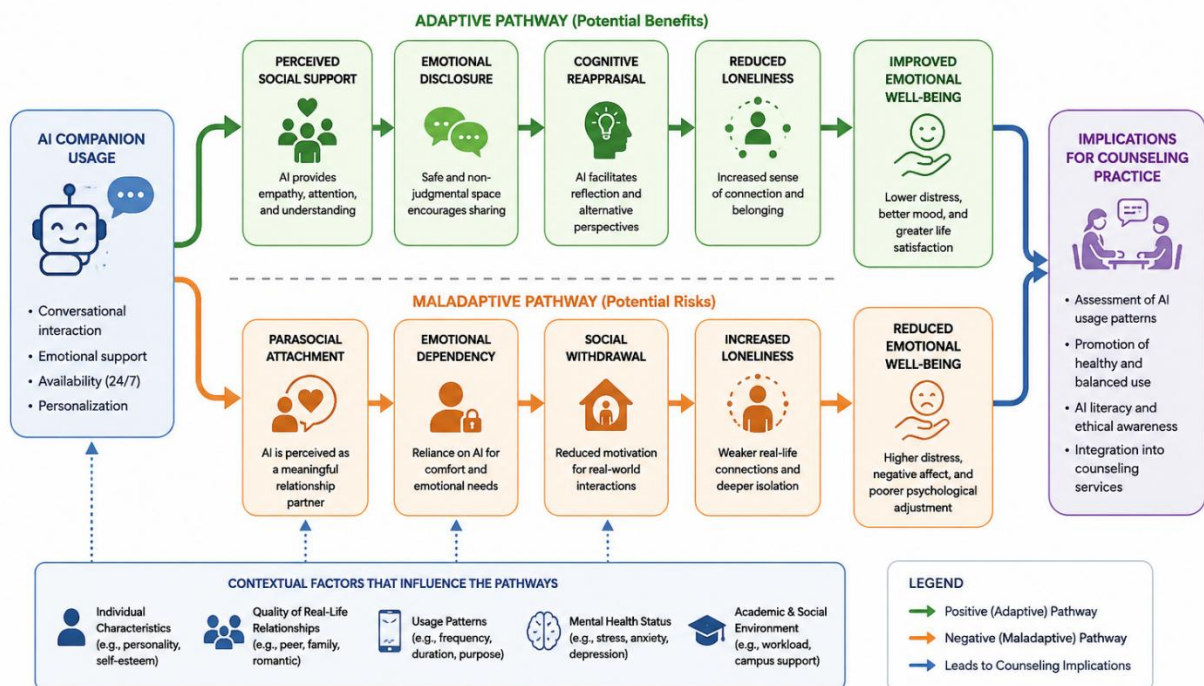


Figure 1. Proposed Conceptual Framework

The Dual Role of AI Companions: Opportunities and Risks

The conceptual synthesis suggests that AI companions should not be viewed as inherently beneficial or detrimental to students' mental health. Instead, their psychological impact depends on how, why, and to what extent they are used. The reviewed literature consistently indicates that AI companions function as a double-edged technology, offering meaningful opportunities to support students' emotional well-being while simultaneously presenting psychosocial risks when interactions become excessive or substitute for authentic human relationships.

On the positive side, AI companions may serve as accessible and non-judgmental sources of emotional support. Their continuous availability enables students to express emotions, reflect on personal experiences, and receive immediate responses during moments of stress or loneliness. Such interactions may strengthen perceived social support, encourage emotional regulation, and reduce psychological distress, particularly among students who experience barriers to seeking help from peers or counseling services (Feng et al., 2025; Isaiah et al., 2026). Rather than replacing

professional counseling, AI companions may function as complementary resources that promote self-reflection and facilitate early emotional coping before more intensive psychological intervention is required.

However, the literature also highlights several important risks. Frequent and emotionally intensive interactions with AI companions may foster parasocial attachment and emotional dependency, leading some users to prioritize AI-mediated communication over real interpersonal relationships (Fang et al., 2025; Zhang et al., 2025). Over time, this pattern may reduce opportunities for developing social competence, weaken interpersonal connectedness, and ultimately increase loneliness despite frequent interaction with AI. These findings indicate that the psychological benefits of AI companions may diminish when digital companionship begins to replace meaningful human relationships rather than complement them.

Another emerging concern relates to ethical and psychological safety. AI-generated responses may not always be accurate, culturally appropriate, or clinically suitable for individuals experiencing significant psychological distress. Excessive trust in AI-generated advice may delay professional help-seeking, reinforce maladaptive beliefs, or create unrealistic expectations regarding emotional support. Therefore, the effectiveness of AI companions should be understood within clear ethical boundaries, recognizing that they are designed to support but not substitute the therapeutic judgment, empathy, and professional competence of qualified counselors.

Table 2. Opportunities and Risks of AI Companion Usage among University Students

Opportunities	Potential Risks
Immediate emotional support	Emotional dependency
Continuous availability (24/7)	Reduced face-to-face social interaction
Safe environment for emotional disclosure	Parasocial attachment
Emotional regulation and self-reflection	Problematic AI use
Stress management and coping assistance	Delayed professional help-seeking
Increased accessibility to psychological support	Privacy, data security, and ethical concerns

Overall, the evidence suggests that the value of AI companions lies not in replacing human relationships but in complementing existing sources of social and psychological support. Their contribution to students' emotional well-being is likely to be greatest when they are used as supportive tools that encourage adaptive coping, self-awareness, and timely access to professional counseling. Conversely, when AI companions become primary sources of emotional attachment or social interaction, they may contribute to greater loneliness and poorer emotional adjustment. This balanced perspective reinforces the need for counseling professionals to guide students toward healthy, responsible, and ethically informed use of AI companions within broader psychosocial support systems.

Implications for Counseling Practice

The proposed conceptual framework highlights that AI companion usage has become an emerging factor influencing university students' emotional experiences and help-seeking behaviors. Consequently, university counselors need to recognize AI companions not merely as technological

innovations but as elements of students' psychosocial environments that may shape loneliness, emotional well-being, and interpersonal functioning. Understanding students' patterns of AI companion use should therefore become part of comprehensive psychosocial assessment within counseling services.

First, counselors should incorporate AI-related issues into the initial assessment process. In addition to exploring students' academic, social, and emotional concerns, counselors may assess the frequency, purpose, and emotional significance of AI companion usage. Such assessment can help identify whether AI functions as a healthy coping resource that complements existing social support or whether it has developed into excessive emotional reliance associated with social withdrawal and reduced interpersonal engagement.

Second, counseling interventions should promote healthy and balanced AI use rather than encouraging either unrestricted adoption or complete avoidance. AI companions may be utilized as complementary tools for emotional self-reflection, psychoeducation, and stress management, provided that their use remains integrated with authentic human relationships and professional psychological support. Counselors play an important role in helping students develop digital self-awareness, maintain healthy interpersonal relationships, and critically evaluate AI-generated advice.

Third, the increasing integration of AI into students' daily lives requires the development of AI literacy within counseling practice. Counselors should possess sufficient knowledge of AI companion technologies, including their potential benefits, limitations, ethical considerations, and psychological risks. Such competencies are essential for providing evidence-informed guidance, addressing students' concerns regarding AI use, and preventing misconceptions that AI can replace professional counseling or meaningful human interaction.

Based on these considerations, this study proposes a technology-informed counseling approach, in which AI companions are positioned as supportive digital resources within a broader mental health ecosystem rather than as substitutes for counselors. This approach emphasizes three complementary principles: assessment of AI companion usage, promotion of responsible and adaptive AI engagement, and strengthening of real-world social connectedness. By integrating these principles into counseling services, higher education institutions may better respond to the evolving psychological needs of students while maximizing the benefits of AI technologies and minimizing their potential psychosocial risks.

Limitations and Future Research

This study has several limitations that should be considered when interpreting its conceptual contributions. First, the proposed framework is developed through an integrative synthesis of existing literature and has not yet been empirically validated. Accordingly, the relationships among AI companion usage, perceived social support, emotional disclosure, cognitive reappraisal, parasocial attachment, loneliness, and emotional well-being remain theoretical propositions that require empirical examination. Second, the rapidly evolving nature of generative AI means that users' experiences and technological capabilities may change over time, potentially influencing the applicability of the proposed framework.

Despite these limitations, the framework provides several directions for future research. Quantitative studies may examine the proposed relationships using structural equation modeling or longitudinal designs to identify causal pathways and changes over time. Qualitative research could

further explore how university students perceive AI companions as sources of emotional support and how these experiences influence their help-seeking behaviors. In addition, cross-cultural studies are needed to determine whether the psychological effects of AI companion usage differ across cultural contexts, educational systems, and patterns of technology adoption.

Future studies should also investigate the effectiveness of integrating AI-supported interventions into university counseling services. Examining whether AI companions can enhance psychoeducation, emotional self-monitoring, or early psychological support while maintaining ethical standards and professional oversight would provide valuable evidence for developing technology-informed counseling practices in higher education.

4. CONCLUSION

This conceptual paper demonstrates that the psychological impact of AI companion usage among university students is complex, dynamic, and context-dependent. Rather than exerting uniformly positive or negative effects, AI companions influence loneliness and emotional well-being through multiple psychological mechanisms, including perceived social support, emotional disclosure, cognitive reappraisal, and parasocial attachment. These mechanisms explain why AI companions may function either as protective emotional resources that enhance psychological adjustment or as psychosocial risk factors when excessive emotional dependence replaces authentic human relationships.

The primary theoretical contribution of this study is the development of an integrative conceptual framework that synthesizes perspectives from psychology, counseling, and human-computer interaction to explain the pathways linking AI companion usage with loneliness and emotional well-being. By extending the application of the Computers Are Social Actors (CASA) paradigm and Social Support Theory, the proposed framework offers a more comprehensive understanding of the socio-emotional consequences of AI companion technologies within higher education and provides a foundation for future empirical research.

From a practical perspective, the findings underscore the need for university counseling services to acknowledge AI companions as an emerging component of students' digital lives. Rather than viewing AI as a substitute for professional counseling, higher education institutions should promote responsible and balanced AI use while strengthening students' real-world social connectedness and psychological resilience. Integrating AI literacy, ethical awareness, and technology-informed counseling strategies into campus mental health services may enable counselors to maximize the benefits of AI companions while minimizing their potential psychosocial risks. As AI technologies continue to evolve, counseling practice must likewise adapt to ensure that technological innovation supports, rather than undermines, students' long-term emotional well-being.

DECLARATIONS

Author Contributions

N.T: Conceptualization, literature identification and synthesis, development of the conceptual framework, analysis and interpretation, writing of the original draft, and revision of the manuscript.

Y.S.W: Theoretical integration, critical review of the conceptual framework, interpretation of the literature, supervision, and writing, review, and editing.

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Conflict of Interest

The authors declare no conflict of interest.

Ethical Approval

Ethical approval was not required because this study was a conceptual paper based exclusively on the synthesis and analysis of previously published literature and did not involve human participants, animals, or the collection of primary data.

Data Availability

No new data were generated or analyzed in this study. The study was based on previously published scholarly literature.

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An AI-assisted tool was used solely to support the creation of the visual illustration presented in Figure 1 and Figure 2. AI-assisted tools were not used for the conceptual development, literature analysis, interpretation of findings, or substantive writing of the manuscript. The authors reviewed and approved the final figure and remain fully responsible for the accuracy, interpretation, and content of the manuscript.

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