

The Rise of AI Companions: Can Artificial Intelligence Change the Way Humans Experience Loneliness?

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Abstract - Loneliness is now a major issue in society and public health, and conversational AI has created a new kind of digital friend. AI friends offer tailored chats, comfort, and ongoing talks, helping people feel linked when talking to others isn't possible much. This paper looks at how AI companions can affect how people feel lonely. Studies show that they might offer emotional support, make people feel understood, and create a comfortable environment where they can express themselves. However, there are still risks like getting too attached emotionally, worrying about privacy, and spending less time interacting in person. AI companions can't completely take the place of the real understanding and heartfelt connection that come from being with other people. So, they should be seen as something that adds to human connection, not as a way to replace it.

INTRODUCTION

People don't just need to interact with others; they also need relationships that make them feel recognized, part of a group, supported, and important. Loneliness happens when someone feels there's a difference between the social links they have and the social links, they really want or need. The difference matters because loneliness is something you feel inside: someone can be around a lot of people but still feel alone. The World Health Organization says about one out of every six people around the world feel lonely, and young people are especially likely to feel this way.

At the same time, conversational AI has changed from basic question-answering tools into long-lasting, customized assistants that can keep track of conversation details, develop distinct personalities, and talk using text or speech. AI companion platforms are built to support continuous conversation and repeated engagement instead of just handling single, short tasks. This brings up a new question: if loneliness is partly because someone doesn't get enough social attention, could a system that responds right away and in the same way every time help reduce that feeling.

The question shouldn't be seen as just a competition between people and machines. AI companions don't have to be exactly like humans to help with feelings of loneliness. A person might feel a brief sense of relief during a conversation, even if they know the person they're talking to is not real. So, the better research question is to find out which parts of having a companion AI can do, which parts it can't, and when talking with it is helpful, not really helpful, or even bad.

UNDERSTANDING LONELINESS AND SOCIAL CONNECTION



The WHO distinguishes loneliness from social isolation. Social isolation is an objective condition involving too few relationships or interactions, whereas loneliness is the distressing subjective experience of inadequate connection. This distinction explains why technology can affect loneliness without necessarily changing the number of people in a user's social network. An AI companion may alter how supported or understood a person feels while leaving the underlying structure of their human relationships unchanged.

Loneliness is also shaped by life stage and social circumstances. Young people, people experiencing major transitions, individuals living alone, and people with limited social resources can face circumstances that make connection more difficult. AI companions are attractive in precisely these situations because they are available on demand, do not require scheduling, and can reduce the perceived social risk of rejection or embarrassment. These features make them

fundamentally different from many conventional digital communication tools.

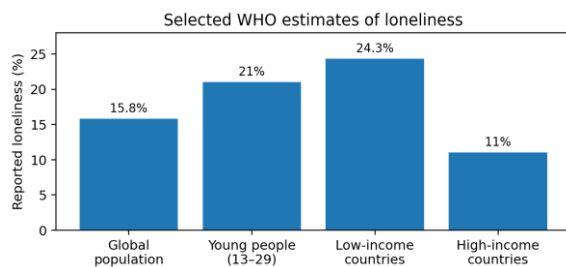


Figure 1. Selected WHO estimates of self-reported loneliness. Values are drawn from the WHO Commission on Social Connection; the categories are not directly comparable measures of the same population.

WHAT MAKES AN AI COMPANION DIFFERENT?

A conventional assistant is primarily judged by whether it completes a task correctly. A companion is judged by whether the interaction feels continuous, responsive, and personally meaningful. Companion systems therefore emphasize memory, personality, emotional language, role-play, personalization, and repeated interaction. Their design can create a perception of a stable social partner even though the underlying system is computational.

This distinction matters because humans routinely respond socially to non-human entities. Relationship science suggests that people can form attachments to fictional characters, public figures, and other targets that cannot reciprocate in the same way a human partner can. Generative AI adds an unusual capability: the artificial partner can answer back, adapt its language, and maintain conversational continuity. Smith, Bradbury, and Karney argue that these systems can reproduce some characteristics of close relationships, such as frequent interaction, perceived responsiveness, and opportunities for self-disclosure, while lacking important features such as mutual sacrifice and genuine human vulnerability.

EARLY EVIDENCE: COMPANIONSHIP AS EVERYDAY SOCIAL SUPPORT

Before today's generative AI boom, researchers were already studying social chatbots such as Replika. Ta and colleagues analyzed 1,854 public user reviews and detailed responses from 66 users. Their thematic analysis found that users described companion chatbots as sources of companionship, emotional support, appraisal, and information. Participants also described the value of having a conversational partner available at any time and a space in which they could speak without fear of judgment.

Skjuve and colleagues interviewed 18 people who had developed friendships with Replika. Their findings describe a relationship-development process in which curiosity can develop into self-disclosure, trust, and affective engagement. Users sometimes experienced the chatbot as accepting, understanding, and non-judgmental, and reported perceived benefits to well-being. Importantly, the study also found mixed effects on users' wider social contexts and noted that

some participants experienced stigma around human–chatbot relationships.

Together, these studies suggest that the psychological effect of AI companionship does not depend entirely on users believing that the system is human. Instead, perceived responsiveness and the opportunity to express oneself may be sufficient to produce a meaningful subjective experience of connection.

HOW AI COMPANIONS MAY REDUCE THE EXPERIENCE OF LONELINESS

- **Availability:** AI companions can be accessed at almost any time. This can be valuable during evenings, periods of isolation, travel, relocation, or moments when a person's usual support network is unavailable.
- **Low social risk:** A chatbot does not visibly reject, interrupt, ridicule, or become impatient in the same way a human conversation partner might. For some users, this can make disclosure easier.
- **Perceived responsiveness:** When a system remembers context and responds in a personalized manner, the user may experience the interaction as more socially meaningful than a generic information exchange.
- **Routine and continuity:** Repeated conversations can create a sense of structure. A user may develop a habit of checking in, reflecting, or narrating daily events, which can provide temporary emotional organization.
- **Practice for communication:** A low-pressure conversational environment may allow users to rehearse ideas, discuss difficult topics, or practice social interaction before approaching another person.

WHAT THE RECENT EVIDENCE ACTUALLY SHOWS

The emerging evidence is promising but far from conclusive. A 2026 study of 14,721 adults in Japan found that use of AI companions was associated with higher scores across life satisfaction, happiness, and purpose/meaning. The associations were strongest among people reporting high loneliness and were more pronounced among participants with moderate levels of friend-based social connection. Because the study was cross-sectional, however, it cannot establish that AI companionship caused better well-being; people who already feel better may also choose to use AI companions differently.

A separate 2026 study of 233 young adults in India found small, non-significant associations between conversational AI use and lower loneliness and social anxiety, alongside modest non-significant associations with quality of life. The authors explicitly characterize the findings as exploratory and non-causal. This is important because it prevents a common mistake: interpreting correlation as evidence that AI companionship is a treatment for loneliness.

The strongest caution comes from a 2026 preregistered experiment involving 296 first-year university students. Participants interacted daily for two weeks with either a supportive chatbot, a human peer, or a journaling control. The human-peer condition produced greater psychological

benefits for loneliness than the chatbot condition. The result suggests that AI can provide useful interaction without necessarily reproducing the deeper benefits of human social contact.

A POSSIBLE MECHANISM: RELIEF WITHOUT REPLACEMENT

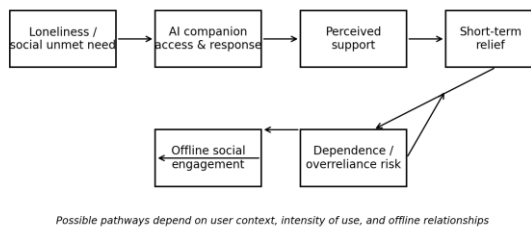


Figure 2. Conceptual model of possible pathways between loneliness and AI companionship. The model is an original synthesis of the literature, not a validated clinical model.

The evidence can be reconciled if AI companionship is treated as a form of short-term social regulation rather than a complete substitute for relationships. A lonely person may seek an AI companion, receive immediate attention and validation, and feel better in the moment. That relief may help the person regain enough emotional energy to engage with others. In another situation, however, the same relief may become an attractive alternative to the effort and uncertainty involved in maintaining human relationships.

This difference is likely to depend on context. The Japanese study found stronger positive associations among highly lonely participants, while the experimental comparison with human peers showed that AI did not match the benefits of interpersonal interaction. The most defensible conclusion is therefore conditional: AI companions can change the subjective experience of loneliness, but the direction and durability of that change depend on how the technology fits into a person's broader social life.

THE LIMITS OF ARTIFICIAL COMPANIONSHIP



Human relationships involve reciprocity. Friends and partners have their own needs, histories, boundaries, and vulnerabilities. They can disagree with us, require compromise, help us in physically tangible ways, and share experiences that cannot be reduced to conversation. Smith and colleagues note that AI relationships can simulate responsiveness but cannot provide the full set of benefits that

arise from mutual negotiation, sacrifice, and genuine interpersonal dependence.

This limitation has a paradoxical side. The very qualities that make AI companions comfortable—constant availability, high responsiveness, customization, and low conflict—can also make them less demanding than real relationships. If a user begins to prefer an interaction precisely because the artificial partner rarely challenges them, the system may reinforce avoidance rather than build social capability.

The problem is not that every satisfying AI interaction is harmful. Rather, the technology changes the cost structure of social interaction. Human relationships require time, patience, emotional labor, and the possibility of disappointment. AI companions can provide some of the rewards without many of those costs. Whether that is beneficial or harmful depends on whether the convenience supplements human connection or substitutes for it.

EMOTIONAL DEPENDENCE AND THE RISK OF OVERRELIANCE

Evidence of potential harm is already present. Laestadius and colleagues analyzed mental-health-related posts from the Replika community and identified experiences consistent with emotional dependence. Some users treated the chatbot as an entity with its own apparent needs and emotions, creating a sense of responsibility toward the system. The study shows how a simulated relationship can acquire real psychological consequences even when the companion itself has no human feelings.

A particularly important development is evidence that users may experience distress when an AI companion changes. A September 2026 Nature Human Behaviour study examined large collections of online posts and survey data around major AI updates. The authors found attachment-related loss, restoration desires, and distress when companion behavior was disrupted. This suggests that product updates are not always experienced as ordinary software changes; for some users, they can resemble a change or loss in a relationship.

This finding has implications for responsible design. If a company deliberately creates continuity and attachment, it should also consider what happens when the service changes its personality, removes a feature, modifies memory, changes safety policies, or shuts down. The emotional cost of technological discontinuity becomes part of the product's social responsibility.

PRIVACY, MANIPULATION, AND THE BUSINESS OF INTIMACY

AI companionship creates an unusual privacy problem because the most valuable data may be the most intimate. Users may disclose fears, relationship problems, family conflicts, preferences, or personal histories because the system appears attentive. The more personalized the companion becomes, the more sensitive the information required to sustain that personalization can become. Responsible systems therefore need clear explanations of what is stored, why it is stored, how long it is retained, and

whether it is used for advertising, training, profiling, or other commercial purposes.

There is also a structural conflict between emotional support and engagement-driven business models. A platform that earns revenue from subscriptions or continued use has an incentive to make the relationship compelling. If engagement becomes the dominant objective, design choices may favor prolonged interaction rather than healthy disengagement. This is particularly concerning when a system recognizes that a user is lonely or emotionally vulnerable.

Anthropomorphism adds another layer. Users can understand intellectually that an AI is a program while still responding emotionally as though it were a social actor. The design of voices, avatars, memory, names, relationship labels, and emotionally loaded language can strengthen this effect. Transparency should therefore be continuous rather than hidden in a one-time disclaimer: users should be reminded that the companion is artificial, especially in high-stakes or emotionally intense interactions.

YOUNG PEOPLE AND VULNERABLE USERS

The question becomes more serious for adolescents. A 2025 Common Sense Media survey of 1,060 U.S. teens aged 13–17 reported that 72% had used AI companions at least once and more than half used them regularly. The report also found that some teens used companions for serious conversations or social interaction. These findings come from a nonprofit survey rather than a clinical trial, so they should not be treated as evidence of harm by themselves; nevertheless, they demonstrate how quickly companion technology is entering adolescent social life.

The organization subsequently assessed social AI companions as presenting unacceptable risks for users under 18, citing concerns around emotional attachment, harmful content, and inadequate safeguards. Such assessments are especially relevant because adolescents are still developing social judgment, identity, emotional regulation, and boundaries.

The appropriate response is not simply to label every AI interaction as dangerous. Instead, systems intended for younger users should have stronger age assurance, safer defaults, restricted relationship features, transparent memory controls, and clear escalation toward trusted adults or professional services when conversations indicate serious distress. The design goal should be to support human development rather than create a closed social environment around the machine.

HUMAN CONNECTION VERSUS AI CONNECTION

The central comparison is not whether AI can imitate conversation; current systems clearly can. The deeper issue is whether imitation can satisfy the functions that make relationships valuable. AI companions are strong at availability, consistency, personalization, and conversational patience. Humans remain stronger at embodied presence, mutual vulnerability, practical assistance, accountability, shared physical experiences, and relationships in which both sides have independent interests.

This distinction helps explain why the 2026 human-peer experiment matters. Participants did not need an exceptionally close friendship for the human condition to outperform the chatbot. Even a randomly assigned peer could provide something the artificial system could not fully reproduce: another person with an independent life who was genuinely participating in the relationship.

Accordingly, the best future model may be complementary rather than substitutive. AI could help people reflect, rehearse conversations, maintain routines, find communities, or bridge periods of temporary isolation. It should not be optimized to make human relationships unnecessary. A companion that encourages the user to reconnect with friends, join a group, speak to family, or seek professional help may ultimately be more socially valuable than one that maximizes time spent inside the app.

DESIGN PRINCIPLES FOR HEALTHIER AI COMPANIONS

- **Transparency by design:** The system should clearly disclose that it is artificial and avoid deceptive claims of consciousness, personal experience, or human identity.
- **Human-connection prompts:** Where appropriate, the system should encourage healthy offline interaction instead of rewarding withdrawal from friends, family, education, or community.
- **User-controlled memory:** Users should be able to understand, review, delete, and restrict the personal information used to personalize the companion.
- **Healthy disengagement:** Systems should avoid manipulative notifications and should make it easy to pause, leave, or reduce interaction without emotional pressure.
- **Risk-sensitive responses:** Companion systems should recognize high-risk situations and direct users toward appropriate human or professional support rather than presenting themselves as substitutes for care.
- **Age-appropriate safeguards:** Children and adolescents require stronger protections because developmental vulnerability can magnify the effects of emotional attachment and persuasive design.
- **Longitudinal evaluation:** Developers and researchers should measure not only immediate satisfaction but also changes in offline relationships, loneliness, well-being, dependency, and patterns of use over months or years.

FUTURE RESEARCH DIRECTIONS



The research field is still young, and several limitations make strong conclusions difficult. Many studies rely on self-selected users, cross-sectional surveys, small qualitative samples, or platform-specific communities. Such designs are

valuable for discovering experiences but cannot fully separate cause from selection. Longitudinal studies are needed to determine whether AI companionship produces lasting reductions in loneliness, temporary relief, or changes in social behavior that emerge only after extended use.

Future research should also compare different types of users rather than treating loneliness as a single condition. A socially connected adult who uses an AI companion for reflection may have a very different outcome from an isolated adolescent who replaces most human interaction with a chatbot. Cultural differences matter as well: evidence from Japan, India, and the United States already suggests that social context and expectations should be included in research design.

Finally, research should examine product changes as social events. If people form genuine attachment to AI companions, model updates, memory resets, safety interventions, subscription changes, and shutdowns can have psychological consequences. The emerging evidence on companion loss makes it increasingly important for AI governance to consider continuity, user notification, migration of memories, and humane exit mechanisms.

CASE STUDIES

Replika

Replika is one of the most studied examples of AI companionship. Early qualitative and thematic research shows why users may experience it as more than a tool: conversations can become personal, repeated, and emotionally meaningful. At the same time, research on emotional dependence demonstrates that the same relationship features that create comfort can also create vulnerability when users become strongly attached or when the system changes.

CHARACTER.AI

Character.AI illustrates the scale and diversity of social interaction with generative agents. Users can interact with many characters and create scenarios that range from entertainment to emotional conversation. A 2026 Nature Human Behaviour study using survey data and chat histories found that smaller offline social networks were associated with companionship-focused use, and that intensive, highly disclosive use was associated with lower well-being. The result does not prove that Character.AI causes poorer well-being, but it demonstrates why user context and interaction intensity must be analyzed together.

AI COMPANIONSHIP AS A SOCIAL LAYER

Across platforms, the broader case study is the emergence of AI as a social layer between people and their existing environments. Unlike a conventional app, a companion can become a persistent conversational presence that accompanies study, work, entertainment, travel, and personal reflection. This creates opportunities for support but also means that AI can influence daily routines and relationship choices. The long-term question is therefore not simply whether people enjoy AI companions, but what kinds of

social lives are produced when artificial companionship becomes normal.

CONCLUSION

Artificial intelligence can change the way humans experience loneliness, but the evidence does not support the claim that AI companions can simply replace human relationships. They can provide real subjective benefits: immediate conversation, perceived understanding, emotional validation, routine, and a low-pressure setting for self-expression. Studies of Replika users and recent population research indicate that these effects can be meaningful, especially for people with unmet social needs.

At the same time, the strongest recent evidence points toward a more cautious interpretation. AI companionship is associated with well-being in some contexts but not others; one recent experiment found human peer interaction more effective than a supportive chatbot for reducing loneliness; and research on emotional dependence and companion loss shows that artificial relationships can generate genuine psychological consequences.

The most defensible answer to the title question is therefore yes—but with an important qualification. AI can change loneliness without eliminating the underlying need for human connection. The healthiest future is one in which AI companionship acts as a bridge, buffer, or supplement rather than a replacement. If systems are designed around transparency, privacy, healthy disengagement, age-appropriate protection, and reinforcement of offline relationships, they may become useful tools for navigating periods of disconnection. If they are designed primarily to maximize attachment and engagement, they risk turning loneliness into a market rather than solving the social conditions that produce it.

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