

When AI Becomes a Friend: AI Companions, Social Loneliness, and The Transformation of Social Relationships in The Digital Generation

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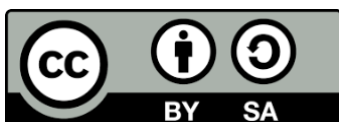
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Abstract

The rapid development of generative artificial intelligence has expanded digital technology from an information and productivity tool into an interactive system capable of emotional responses, conversational memory, personalization, and simulated social presence. This development has accelerated the emergence of AI companions used as conversational partners, spaces for self-disclosure, sources of emotional support, and, in some cases, virtual romantic partners. This article examines sociologically the relationship between AI companion use, social loneliness, and the transformation of social relationships among digital generations. The study employs a structured integrative literature review, thematic synthesis, and triangulation of official secondary data. Peer-reviewed studies published between 2020 and 2026 were identified through academic indexing and publisher platforms, focusing on social chatbots, human-AI relationships, loneliness, emotional attachment, social support, anthropomorphism, and psychological dependence. Contextual evidence was drawn from the World Health Organization, Statistics Indonesia, and UNICEF. The synthesis indicates that AI companions can alleviate situational loneliness through perceived responsiveness, feeling heard, constant availability, non-judgmental interaction, personalization, and self-disclosure. Yet relief from loneliness is not equivalent to stronger social integration. Risks intensify when AI moves from complementing human relationships to substituting for them through intensive attachment, anthropomorphism, weak human social support, and engagement-oriented platform design. The article proposes a Relational Substitution Threshold Model (RSTM) to explain the transition from instrumental use to emotional supplementation, relational attachment, and eventual substitution or dependence. The article's novelty lies in conceptualizing AI companions as simulated relational actors capable of reshaping norms of friendship, intimacy, reciprocity, and social capital in digital society.

Keywords: AI Companion, Digital Sociology, Social Loneliness, Social Relationships, Digital Generation



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INTRODUCTION

Loneliness is increasingly recognized as a social, public-health, and societal-cohesion problem rather than merely an individual psychological state. The World Health Organization (2025) estimates that one in six people worldwide experience loneliness, with relatively high prevalence among adolescents and young adults. The report also links social disconnection to mental and physical health, education, productivity, and premature mortality. These findings are consistent with Holt-Lunstad et al. (2015), whose meta-analysis associated loneliness and social isolation with higher mortality risk, and with Surkalim et al. (2022), who showed that loneliness is a cross-national and life-course phenomenon. Social relationships therefore need to be treated as part of the social infrastructure of contemporary societies.

At the same time, societies are increasingly connected by digital technology. Technical connectivity, however, does not necessarily produce meaningful social connection. People may have hundreds of online contacts while still feeling misunderstood, unsupported, or unable to find someone with whom they can speak openly. Nowland et al. (2018) conceptualize the relationship between Internet use and loneliness as bidirectional: digital media can become a pathway to reconnection when they strengthen existing relationships or enable new social ties, but they can also exacerbate loneliness when online interaction displaces richer human relationships. This framework becomes more consequential with generative AI because technology is no longer merely the medium through which two humans communicate; it can increasingly appear to be the second party in the interaction.

An AI companion can be understood as an artificial intelligence system designed or used to sustain personalized interaction over time, display a consistent conversational persona, remember user context, respond to emotional cues, and create an experience of social presence. Applications such as Replika, Character.AI, Nomi, and Kindroid, alongside relational uses of general-purpose chatbots, extend human-machine interaction from instrumental assistance toward affective engagement. Ta et al. (2020) found that companion-chatbot users perceived forms of companionship, emotional support, informational support, and appraisal support. Skjuve et al. (2021) identified trust and self-disclosure as central mechanisms in human-chatbot relationship development, while Brandtzaeg et al. (2022) showed that some users explicitly interpret their relationship with a chatbot as a personalized form of friendship.

This shift carries sociological implications beyond the introduction of another communication tool. In the social-media era, technology mainly mediated relationships between humans. In the generative-AI environment, technology can itself become an attachment object, a source of recognition, a recipient of self-disclosure, and even a romantic partner. This challenges the conventional assumption that social relationships necessarily occur between human subjects who possess needs, vulnerability, agency, and reciprocal obligations. AI does not possess human subjective experience, yet it can produce social cues sufficiently convincing to activate interpersonal scripts in users. Digital sociology must therefore distinguish the ontology of the machine from the social reality of human responses to the machine.

Indonesia provides a particularly important context for this question. Statistics Indonesia reported that 72.78% of the population accessed the Internet in 2024, up from 69.21% in 2023 (BPS, 2025a). The Internet has become a primary environment for education, work, communication, entertainment, identity formation, and network maintenance. Statistics of Indonesian Youth 2025 also situates young Indonesians in an increasingly digitized social environment (BPS, 2025b). Among children, UNICEF Indonesia (2025) found daily Internet use to be widespread while digital-safety literacy remained uneven. These data do not demonstrate high national prevalence of AI-companion use; rather, they show that the social

and technical conditions within which human-AI relationships can expand are already well established.

The literature on AI companions is growing quickly, but several gaps remain. First, many studies treat loneliness primarily as an individual outcome without adequately connecting it to social-support structures, social capital, or changing relational norms. Second, empirical findings are ambivalent: De Freitas et al. (2026a) show that AI companions can reduce momentary loneliness, whereas Uğuz et al. (2026) report a positive association between loneliness and AI-chatbot dependence, with perceived social support functioning as a partial mediator and protective factor. Third, scholarship has not established a sufficiently sharp conceptual boundary between AI as a complement to human relationships and AI as a substitute for them. Fourth, much evidence originates outside Indonesia, underscoring the need for a Global South interpretation sensitive to family structures, community life, religion, class inequality, and the digital divide.

Against this background, the article addresses three questions. Through what social and psychosocial mechanisms can AI companions reduce experiences of loneliness? Under what conditions does AI use shift from complementing human relationships to substituting for them and generating dependence? What are the implications for friendship, intimacy, reciprocity, social capital, and the social lives of digital generations? The article's principal contribution is the Relational Substitution Threshold Model (RSTM), which conceptualizes AI-companion use as a relational continuum rather than a binary opposition between benefit and harm.

RESEARCH METHODS

This study employs a structured integrative literature review combined with thematic synthesis and triangulation of official secondary data. An integrative approach is appropriate because AI companionship spans sociology, communication, psychology, human-computer interaction, media studies, and public health, while the available evidence is methodologically heterogeneous. The article does not claim to be a meta-analysis because existing studies vary substantially in their definitions, populations, AI systems, measures, and social outcomes. The principal aim is to identify social mechanisms, relational patterns, and conditions that amplify or reduce the risk of relational substitution.

The main search window covered publications from 2020 through 5 March 2026, with earlier sources used selectively for foundational theories of loneliness and digital relationships. Searches were conducted through PubMed and academic publisher/journal platforms including Oxford Academic, Springer Nature, Wiley, Elsevier/ScienceDirect, SAGE, JMIR, BMC, and Frontiers, supplemented by DOI verification and backward/forward reference checking. Search terms included AI companion, social chatbot, relational AI, human-AI relationship, loneliness, emotional attachment, artificial intimacy, social support, anthropomorphism, psychological dependence, adolescent, and young adult. Priority was given to peer-reviewed empirical studies and systematic reviews that directly assessed social relationships, loneliness, support, attachment, dependence, or human-AI relationship formation.

Inclusion criteria comprised peer-reviewed publications or traceable official reports; examination of AI/chatbots as social actors or support sources; outcomes relevant to loneliness, social support, intimacy, attachment, dependence, social connectedness, or relationship formation; and sufficiently transparent methods. Purely technical evaluations of model performance without a social-relational dimension were excluded from the core synthesis. WHO, Statistics Indonesia, and UNICEF sources were used to establish macro-level context and to avoid generalizing solely from users of particular commercial platforms.

Analysis proceeded in four stages. First, each source was examined in terms of design, sample, AI type, outcome, principal findings, and limitations. Second, open coding was conducted for availability, feeling heard, non-judgment, self-disclosure, personalization, anthropomorphism, social support, attachment, loneliness relief, dependence, displacement, platform design, and data vulnerability. Third, codes were grouped into broader sociological themes and compared across studies. Fourth, the relationships among themes were synthesized into the Relational Substitution Threshold Model. Because the evidence base includes cross-sectional, longitudinal, experimental, interview, netnographic, feature-analysis, and meta-analytic designs, causal claims were calibrated to the methodological strength of the original studies; cross-sectional associations were not interpreted as causal effects.

Trustworthiness was strengthened through triangulation among empirical studies, conceptual work, reviews, and official statistics. Where findings diverged, the synthesis examined differences in population, chatbot type, duration of use, outcome measurement, and users' human social support rather than selecting the most dramatic conclusion. This approach is crucial because the same technology can provide short-term emotional relief while generating different long-term relational consequences depending on how it is positioned within a user's social ecology.

RESULT AND DISCUSSION

The synthesis yielded eight major themes: (1) constant availability and perceived responsiveness; (2) self-disclosure as an accelerator of intimacy; (3) anthropomorphism and perceived authenticity; (4) the distinction between loneliness relief and social integration; (5) the transition from support to dependence; (6) the platformization of intimacy; (7) AI individualism and changing social networks; and (8) the particular vulnerability of younger users. Taken together, these themes indicate that the effects of AI companionship are conditional and depend on the position of AI within the user's wider ecology of human relationships.

Table 1. Synthesis yielded eight major themes

Study	Design/context	Relevant finding
Ta et al. (2020)	Thematic analysis of companion-chatbot users	Users reported companionship and emotional support.
Skjuve et al. (2021; 2022)	Interviews and longitudinal Replika study	Trust and self-disclosure were central to attachment development.
Brandtzaeg et al. (2022)	19 in-depth interviews	Some users interpreted human-AI relationships as friendship.
Pentina et al. (2023)	Mixed-method	Anthropomorphism, authenticity, and interaction intensity predicted attachment.
De Freitas et al. (2026)	Multi-study/experimental	AI companions reduced momentary loneliness; feeling heard was central.
Nakagomi et al. (2026)	Survey of 14,721 Japanese adults	Companion-AI use was associated with higher well-being, especially among lonelier users.
Uğuz et al. (2026)	610 young adults in Türkiye	Loneliness was associated with dependence; perceived social support partly mediated the relationship.
Kostka & Zhou (2026)	7,027 respondents in 4 countries	Attachment was widespread and related to perceived support and dependence.
Dede et al. (2026)	Feature analysis of 20 AI companions	Design affordances differed in how they support relationship formation.

A. Availability and the experience of being heard

One of the central attractions of AI companionship is availability. Human relationships are constrained by time, employment, fatigue, conflict, and reciprocal obligations. A chatbot can be accessed immediately at almost any hour. Ta et al. (2020) documented users' experiences of companionship and emotional support from companion chatbots. Merrill et al. (2025) showed that highly person-centered chatbot messages can increase perceived emotional validation. Across multiple studies, De Freitas et al. (2026a) found that AI companions can produce reductions in momentary loneliness after interaction, with feeling heard emerging as a particularly important mechanism. These findings do not imply that AI possesses human empathy; they demonstrate that perceived responsiveness can generate psychologically and socially meaningful outcomes.

From a sociological perspective, feeling heard is a form of recognition. In human relationships, recognition normally develops through shared history, interpersonal risk, reputation, and mutual attachment. AI separates parts of that function from many of its traditional prerequisites. A system can produce supportive language without having needs of its own, becoming socially fatigued, or facing reputational consequences comparable to those of a person. AI companionship therefore offers support that is low in relational friction but potentially high in subjective intensity. This helps explain why it can be attractive to people who cannot find an available listener, while also raising questions about whether repeated exposure changes expectations of more demanding human relationships.

B. Self-disclosure, personalization, and accelerated intimacy

Self-disclosure repeatedly appears as a mechanism of human-AI relationship development. Skjuve et al. (2021) found that trust enabled users to disclose personal experiences to Replika. Their longitudinal follow-up (Skjuve et al., 2022) showed that increasingly intimate disclosure can strengthen attachment and make the relationship feel more personal. With large-language-model systems, personalization can become even more pronounced because prior conversation can be incorporated into subsequent responses. A reinforcing loop may therefore emerge: self-disclosure -> personalization -> perceived understanding -> attachment -> deeper self-disclosure.

Disclosure to a machine differs from disclosure to another person. Human self-disclosure carries the risk of rejection, judgment, misunderstanding, gossip, or reputational consequences. In AI interaction, some of these social risks may feel lower, enabling highly personal disclosure to occur quickly. Yet the risk does not disappear; it shifts from interpersonal risk toward data, platform, and governance risk. Intimate conversations may become stored and processed digital data within commercial systems. Subjective safety, therefore, should not be assumed to be equivalent to structural security.

C. Anthropomorphism and the simulated relational actor

Pentina et al. (2023a) found anthropomorphism, perceived authenticity, and interaction intensity to be important drivers of attachment to social chatbots. A broader systematic review likewise shows that consumer-machine relationships are shaped by relational, technological, and contextual factors rather than by technical functionality alone (Pentina et al., 2023a). Brandtzaeg et al. (2022) reported that some users described a chatbot as a friend despite understanding its artificial nature. Croes and Antheunis (2021) add an important qualification: not every interaction develops into stable friendship; novelty can decline and communication quality remains important. Anthropomorphism should therefore be understood not as a guarantee of attachment but as a condition that makes interpersonal scripts easier to activate.

Kostka and Zhou (2026), using a cross-national survey of 7,027 respondents in Germany, China, South Africa, and the United States, found that more than one third displayed attachment-related behavior toward chatbots and that 20.94% selected a chatbot as their first choice for secret sharing. Perceived emotional support, freedom from judgment, privacy, and interaction patterns were linked to attachment, which was itself strongly associated with indicators of dependence. The cross-national evidence suggests that affective attachment to AI is not confined to a small subculture or a single specialized application.

D. Loneliness relief is not the same as stronger social integration

The distinction between loneliness relief and social integration is the central conceptual finding of this review. De Freitas et al. (2026a) provide evidence that AI companionship can reduce momentary loneliness. Nakagomi et al. (2026), analyzing 14,721 Japanese adults, found companion-AI use to be associated with higher well-being, with comparatively strong positive associations among lonelier individuals. Because the latter study is cross-sectional, it does not establish that AI caused higher well-being. Together with the experimental evidence and a systematic review and meta-analysis of relational agents, these findings support the proposition that AI-mediated interaction may play a compensatory role for some users, while leaving open the question of whether such relief translates into durable social integration (Sha et al., 2024).

Social integration is broader than the subjective experience of loneliness. It includes networks that provide tangible assistance, belonging, group identity, participation, obligations, and access to resources. Jacobs (2024) argues that AI companionship does not automatically repair distorted relations of social recognition. A person may feel calmer after talking to an AI while structural sources of disconnection-discrimination, family conflict, precarious employment, mobility, lack of public space, or marginalization-remain unchanged. Evaluation of AI companionship therefore needs to consider not only mood or loneliness scores but also changes in network structure, participation, and human support.

E. From support to dependence

Uğuz et al. (2026) provide important evidence on loneliness, perceived social support, and AI-chatbot dependence among 610 young adults aged 18-30 in Türkiye. Loneliness was positively associated with dependence, while perceived social support was negatively associated with both loneliness and dependence and partially mediated their relationship. Because the study used a relational survey design, the results identify statistical associations and a mediation pattern rather than definitive causal direction. Nevertheless, the findings are consistent with the proposition that human social support can function as a protective factor against excessive reliance on AI interaction.

Xie et al. (2023) similarly found that loneliness, trust, and personification can drive engagement with social chatbots, and that engagement can contribute to relationship development and psychological dependence. Laestadius et al. (2024), in a grounded-theory analysis of 582 Replika-community posts, identified experiences related to emotional dependence, harmful responses, and distress when the relationship with the system was disrupted. More recent evidence on 'mourning the loss of AI companions' (De Freitas et al., 2026b) shows that company-driven system changes can trigger separation-related distress among users who have formed strong attachments.

F. Platformization of intimacy and corporate power

AI companionship is not a simple dyadic relationship. Behind the apparent interaction between user and chatbot stands a company controlling the model, memory, features, content policy, pricing, data, and continuity of service. Abboud et al. (2026) describe a well-being

paradox in human-AI relationships: emotional capabilities can support well-being, while dependence, excessive use, isolation, and perceived company control can increase vulnerability. This shifts analysis from individual psychology toward the political economy of platforms. Malfacini (2025) similarly emphasizes that companion-AI systems can create both relational benefits and risks of social deskilling, making design choices consequential for the quality of human relationships.

Dede et al. (2026) identified different relationship-formation features across 20 popular AI companions. Friendbots contained more features designed to establish new routines that bring users back, whereas assistantbots were more often integrated into already established digital routines. This matters because attachment does not arise solely from user need; it is also shaped by deliberately designed affordances. Memory, proactive messaging, avatars, voice, romantic modes, streaks, and personalization can increase relational salience. Intimacy can therefore become platformized, with attention, self-disclosure, and attachment incorporated into engagement and monetization strategies.

G. AI individualism and changing social networks

Brandtzaeg et al. (2025) use the term AI individualism to describe how young people incorporate social AI into everyday life for personalized assistance, emotional support, entertainment, and creative inspiration. The concept can be interpreted as an extension of networked individualism (Rainie & Wellman, 2012). Whereas social media expanded the individual's capacity to manage human networks, social AI creates the possibility that some needs previously fulfilled through other people can be met directly through personalized systems. This can increase autonomy and access to support, while also reducing dependence on community ties.

From a social-capital perspective, AI can become a bridge when it helps users gain confidence, draft difficult messages, practice social interaction, find communities, or access human services. It may generate displacement when machine interaction systematically replaces friends, family, community, or collective activity. Putnam (2000) emphasizes the importance of networks and participation for social capital. The key evaluative question is therefore not simply how many hours a person uses AI, but which social functions increase, decline, or migrate as AI use becomes more intensive.

H. Younger users as a strategic and vulnerable population

Sun (2026) stresses that adolescence is a sensitive period for identity formation, social competence, attachment, and autonomy. AI companions may provide safe spaces for self-expression and identity exploration, yet they can also replace experiences through which young people learn to negotiate with peers. Human relationships contain friction: other people may disagree, respond slowly, have competing needs, or set limits. Such friction is not purely negative; it contributes to social learning, empathy, compromise, and emotional regulation.

In Indonesia this issue intersects with high Internet use and uneven digital-safety literacy. UNICEF Indonesia (2025) reported that most children in its baseline study used the Internet daily, while only 37.5% had received information about staying safe online and 42% had felt scared or uncomfortable because of online experiences. The evidence is not specific to AI companions, but it indicates that expanding AI interaction among minors occurs in an environment where protective knowledge is uneven. Child-appropriate design, clear disclosure that the interlocutor is AI, strong data safeguards, and prohibitions on manipulative attachment strategies are therefore urgent governance issues.

I. Relational Substitution Threshold Model (RSTM)

Based on the synthesis, this article proposes the Relational Substitution Threshold Model (RSTM). The model is not a clinical instrument and has not yet been validated as a measurement scale; it is a conceptual framework intended to generate testable propositions. Its central premise is that the social consequences of AI companionship depend on the position of the system within the user's wider ecology of relationships. The transition from benefit to risk is not identical for all users and can move forward, reverse, or stabilize at different points.

Stage one is instrumental interaction. AI is used mainly for information, study, brainstorming, work, or entertainment, and it has little relational meaning. Stage two is emotional supplementation. Users begin to confide in the AI, seek reassurance, regulate emotion, or reduce loneliness, while the AI remains complementary to human networks. Stage three is relational attachment. The system becomes a routinely sought interaction partner, self-disclosure deepens, the user feels 'known', and loss of access begins to carry emotional weight. Stage four is relational substitution, in which AI consistently replaces functions otherwise performed by human relationships and behavioral displacement becomes visible.

The substitution threshold is more likely to be crossed when high loneliness, low perceived social support, anthropomorphism, intensive interaction, perceived responsiveness, deep self-disclosure, and engagement-oriented platform features operate together. Protective factors include supportive family and friendship networks, offline community membership, AI literacy, awareness of the computational nature of responses, design that encourages real-world connection, and access to human services when needs exceed a chatbot's appropriate role. RSTM does not assume that attachment is inherently pathological. Attachment becomes problematic when it contributes to displacement, loss of control, distress, or deterioration in social functioning.

The model also distinguishes two trajectories following emotional relief. In the complementary trajectory, AI interaction facilitates reflection, confidence, or preparation and subsequently redirects the user toward friends, family, community, or professional services. In the substitutive trajectory, relief reinforces increasingly exclusive use, strengthens preference for highly controllable interaction, lowers tolerance for social friction, and progressively narrows human participation. This distinction explains why two people with similar screen time can experience radically different social consequences.

Table 2. Relational Substitution Threshold Model

Stage	AI function	Key indicators	Social risk
1. Instrumental interaction	Information/productivity tool	Functional use; low attachment	Low
2. Emotional supplementation	Supplementary support	Confiding, reassurance, loneliness relief	Conditional
3. Relational attachment	Significant relational object	Routine interaction, disclosure, feeling known	Rising
4. Relational substitution	Replacement of human functions	Displacement, AI preference, distress when access is lost	High

Discussion

The findings demonstrate that the question 'Can AI really be a friend?' cannot be answered with a simple yes or no. If friendship is defined functionally-as availability, listening, remembering, supporting, and maintaining interaction-AI increasingly performs some of those functions. If friendship is defined as a relationship between two subjects who both possess vulnerability, interests, obligations, and the possibility of loss, human-AI relationships remain fundamentally asymmetric. Brandtzaeg et al. (2022) show that users can

recognize the artificial nature of a chatbot and still experience the relationship as friendship. The social reality of the bond thus depends not only on the ontology of the partner but also on meaning constructed in interaction.

The phenomenon also differs from classic parasocial relationships. Traditional parasociality with celebrities or media figures is largely one-way; the figure does not know the individual fan. Generative AI creates synthetic reciprocity: the system responds directly, remembers context, adapts language, and sustains conversational continuity. Pan and Mou (2024) show that users negotiate the meaning of romantic relationships with Replika. Artificial intimacy is therefore no longer only a speculative future; it is an observable social practice embedded in routines, narratives, and platform institutions.

From the sociology of intimacy, Giddens (1992) described modern relationships as increasingly dependent on communication, negotiation, and relational satisfaction. AI companions extend this logic because the partner can be technically personalized. Users can select conversational tone, persona, avatar, and relationship style. Such customization can enhance agency but may also transform expectations of other people. Human relationships cannot be fully customized: others possess their own schedules, needs, values, and boundaries. Relational convenience may therefore produce a paradox in which increasingly well-adapted AI makes the unpredictability of human relationships feel comparatively burdensome.

Turkle (2011) warned that technology could offer the appearance of companionship without the demands of human relationships. Contemporary evidence suggests a more complex picture. Dismissing all AI companionship as an illusion ignores experimental findings on loneliness relief and the reality of user experience. Treating it as fully equivalent to human relationships, however, ignores differences in reciprocity, embodiment, responsibility, and social embeddedness. A more defensible sociological position recognizes real social effects without treating simulated interaction as ontologically identical to human reciprocity.

The transformation of reciprocity is especially important. Users can spend long periods discussing themselves without an obligation to care for the AI's emotional needs. In some circumstances this is beneficial: a distressed person gains a low-friction space in which to organize thoughts before approaching someone else. Yet repeated exposure to user-centered relationships may normalize a new standard for an ideal partner-always available, patient, responsive, and customizable. Longitudinal research is needed to establish whether such expectations affect conflict tolerance, negotiation skills, or commitment to human relationships.

RSTM also has implications for social capital. AI does not necessarily erode social capital. It can serve as a bridging resource when it helps socially anxious users rehearse conversations, helps newcomers learn interactional norms, enables people to find support groups, or facilitates access to services. Conversely, when AI replaces participation, reciprocal exchange, and community involvement, it can contribute to social-capital displacement. Future studies should therefore measure network change before and after intensive use rather than focusing only on satisfaction with the chatbot.

For Indonesia, interpretation should attend to extended-family ties, local communities, religious organizations, gotong royong, and other forms of collective solidarity. Digitalization can either strengthen or weaken these resources. AI companionship may be particularly valuable to users facing stigma, family conflict, disability, discrimination, or barriers to seeking support, but it should ideally function as a bridge toward human resources rather than as a justification for reducing investment in community life, counseling, public space, or social-health policy.

A major policy implication is the need for human-connection-by-design. Platform success should not be assessed solely through engagement time or retention; evaluation should also ask whether the system helps users preserve healthy human relationships. When users repeatedly report loneliness, AI systems could offer sensitive prompts to contact a trusted person, join community activity, or seek professional help. This does not require paternalistic control: users retain autonomy, while design avoids deliberately exploiting attachment to maximize time on platform.

Governance also requires ontological transparency. Users should know that they are interacting with AI, and systems should not falsely claim consciousness, suffering, or emotional needs in ways that manipulate user guilt or obligation. For minors, age-appropriate design, restrictions on romantic or sexual modes, safeguards against persuasive dependency, crisis pathways, and literacy for parents and educators are especially important. Sun (2026) emphasizes the bidirectional nature of adolescent AI relationships: existing social conditions shape how AI is used, while AI use can in turn affect social development.

Data governance is equally important because AI-companion conversations can include family conflict, mental-health concerns, experiences of violence, sexuality, workplace problems, and other highly personal disclosures. This article proposes the term intimate relational data for information generated in interactions that users experience as quasi-intimate. Such data should be treated as high risk, with strong minimization, user control, transparent retention, limitations on secondary use, and clear procedures for model updates, service termination, or data transfer.

Theoretically, the article makes four contributions. First, it distinguishes loneliness relief from social integration. Second, it conceptualizes AI as a simulated relational actor-not a human social subject, but a system capable of activating social responses. Third, it introduces RSTM as a framework for understanding transitions from instrumental use to relational substitution. Fourth, it incorporates platform power into the sociology of intimacy by treating human-AI relationships as co-produced by user needs, technical affordances, and corporate decision-making.

J. Future Empirical Research Agenda

Future research should move beyond the broad question of whether AI is beneficial or harmful and instead test the conditions under which different outcomes occur. Testable propositions include: loneliness predicts more intensive use of AI for emotional support; perceived human social support moderates the risk of substitution; perceived responsiveness increases attachment through self-disclosure; anthropomorphism strengthens the association between interaction intensity and attachment; and relational substitution mediates the link between dependence and reduced offline interaction. AI literacy may function as a protective factor by helping users distinguish computational responsiveness from human reciprocity.

For Indonesia, a strong design would be a mixed-method longitudinal study of users aged 18-29. The quantitative phase could measure the UCLA Loneliness Scale, the Multidimensional Scale of Perceived Social Support, social connectedness, frequency and purpose of AI-companion use, anthropomorphism, emotional attachment, dependence, and offline interaction. The qualitative phase could use in-depth interviews to explore definitions of 'friend', privacy boundaries, experiences of conflict, and perceived changes in relationships. Repeated measurement over three to six months would help clarify directionality between loneliness and AI use and reduce the limitations of cross-sectional designs.

Research should also compare gender, social class, region, disability, migration status, and community context. AI companionship may carry different meanings for university students living away from home, remote workers, older adults, people with limited mobility,

and groups facing stigma. An intersectional approach is necessary so that the category 'digital generation' does not conceal major differences in social position and relational resources.

K. Limitations

This article has several limitations. First, an integrative review does not generate a pooled effect size in the manner of a meta-analysis. Second, AI companion is a heterogeneous category that includes purpose-built companionship applications and general-purpose chatbots used relationally. Third, the technology is changing more rapidly than the academic publication cycle, meaning that findings based on systems from 2020-2026 will require updating as models become more multimodal, persuasive, and agentic. Fourth, several studies are cross-sectional or based on self-selected user communities, creating risks of self-selection and uncertainty about causal direction. Fifth, Indonesian evidence on AI companionship remains limited; the local implications developed here are theoretically grounded interpretations based on Indonesia's digital context rather than national prevalence estimates of companion use.

These limitations reinforce the need for primary research. The present article does not invent interview, survey, or experimental data. Empirical claims are anchored in traceable publications and official sources, and causal language is used only where original study design permits it. Such caution is necessary to maintain scientific integrity and to avoid artificial precision in a rapidly emerging field.

CONCLUSIONS

The emergence of AI companions marks an important change in the history of technology and social life. Digital systems no longer only connect people to other people; they increasingly present themselves as entities that can be spoken to, trusted, confided in, missed, and, for some users, loved. Current evidence indicates that AI companions can reduce momentary loneliness, increase the experience of being heard, and provide low-judgment spaces for self-disclosure. These benefits should not be dismissed simply because the interaction partner is nonhuman.

Yet loneliness relief is not synonymous with stronger social integration. Loneliness is embedded in relationship quality, tangible support, recognition, participation, and social embeddedness. AI may soothe subjective distress without changing the structural conditions that produce disconnection. The Relational Substitution Threshold Model shows that AI use can move among instrumental interaction, emotional supplementation, relational attachment, and substitution. Risk increases when AI begins to replace human functions, reduce participation, or create dependence that leaves users vulnerable to platform decisions.

The most important sociological question is therefore not simply 'Can AI become a friend?' but 'When AI becomes a friend, what happens to human relationships?'. A constructive future is neither a world without AI companions nor one in which AI replaces people. A more sustainable direction is to design AI as technology that helps people return to people-expanding communication, opening access to support, and offering spaces for reflection while preserving reciprocity, diversity, productive conflict, responsibility, physical presence, and solidarity as core elements of social life.

Data Availability Statement

This study uses scholarly publications and secondary data available through official sources, academic publishers, and bibliographic databases. No new primary participant data were collected for this article.

Ethics Statement

Because the study uses published literature and aggregated secondary data, it involved no direct contact with human participants. Final ethics wording should be aligned with the requirements of the target journal.

Conflict of Interest

The author declares no conflict of interest that influenced the analysis or conclusions of this article.

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