

Article

From Adolescence to Older Adulthood: Lifespan Pathways Linking AI Companion Chatbots to Mental Health

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ABSTRACT: AI-based conversational agents are increasingly used for emotional support, companionship, and day-to-day coping. These systems can provide immediate reassurance, reduce distress in the moment, and offer a low-barrier channel for reflection. At the same time, concerns are growing that frequent reliance on AI companions may displace human relationships and narrow users' exposure to the interpersonal friction that supports psychological growth. This narrative review synthesizes conceptual and empirical themes to explain how AI companion chatbot use may relate to loneliness and depressive symptoms across the lifespan. We propose a developmental framework distinguishing supportive pathways (e.g., perceived availability, emotion regulation scaffolding, and social activation) from risk pathways (e.g., social displacement, dependency, avoidance coping, and affirmation-biased feedback loops). A central contribution is a lifespan account of how positive-only or preference-aligned feedback may undermine constructive stress appraisal, frustration tolerance, resilience, and grit—capacities that are built through repeated experiences of manageable challenge, honest feedback, and relationship repair. We conclude with implications for practice, education, and design, emphasizing developmental tailoring, safeguards against over-reliance, and research priorities needed to clarify causal mechanisms and long-term outcomes.

Keywords: AI companion chatbots; Lifespan developmental perspective; Loneliness; Depressive symptoms; Emotion regulation; Social displacement

1. Introduction

Conversational artificial intelligence has rapidly moved from novelty to routine. AI chatbots are now embedded in phones, social platforms, and dedicated companion applications that explicitly aim to provide emotional support, companionship, or a sense of being understood [1]. For many users, these systems are attractive precisely because they are accessible, responsive, and emotionally predictable: the AI is available at any hour, does not tire, and typically responds in a supportive tone. In an era of rising social isolation and strained mental health, it is reasonable to view such tools as potential supports—especially for individuals who face barriers to care, live alone, or struggle with stigma when seeking help. Prior work on conversational agents and mental health has largely emphasized short-term support functions (e.g., accessibility, perceived support, momentary distress reduction) and has often examined outcomes without



a clear developmental account of how repeated reliance may shape coping and interpersonal functioning over time. At the same time, concerns about social displacement, avoidance, and over-reliance are increasingly noted. However, the field lacks an integrated synthesis that explains when these risks are most likely to emerge, why they may differ across life stages, and how design features such as preference-aligned, consistently affirming interaction might alter stress appraisal and resilience-relevant skills. As a result, it remains unresolved why the same AI companion tool may provide immediate relief yet contribute to longer-term vulnerability for loneliness or depressive symptoms in some users and contexts.

However, companionship and emotional support are not interchangeable with interpersonal development. Human relationships involve uncertainty, disagreement, and feedback that is not always pleasant [2]. Those frictions are not merely inconveniences; they can be psychologically formative. Learning to tolerate frustration, interpret criticism constructively, repair ruptures, and persist through setbacks is central to resilience and grit. A key concern is that AI companions may reduce exposure to these growth opportunities through two mechanisms: (a) by displacing human interaction and (b) by offering highly agreeable, preference-aligned reassurance—what can be described as an affirmation-biased feedback loop [1,2]. When the most frequent relationship in one’s daily life consistently validates and comforts in the user’s preferred direction, the user may become less practiced in converting difficult social input into learning and more dependent on comfort-driven coping. An important premise is that ‘AI companion chatbots’ are not developmentally equivalent: different design choices can shift whether the same tool functions as a scaffold for adaptive coping or a driver of substitution and avoidance. Some versions primarily optimize warmth and preference-aligned reassurance, whereas others can be oriented toward development by prompting reflective processing, surfacing inconsistencies, offering gentle corrective feedback, and encouraging offline problem engagement and human connection. Accordingly, the central question is not only whether AI companionship influences coping and development, but which types of companion systems—and which usage patterns—are most likely to support adaptive coping versus pose developmental risks.

This review examines how the use of AI companion chatbots may relate to loneliness and depression across the lifespan. We focus on two broad questions. First, under what conditions can AI companionship be psychologically supportive rather than harmful? Second, why might the same tool confer short-term relief yet contribute to long-term vulnerability, especially by weakening growth-oriented coping processes? We argue that a lifespan developmental perspective is essential because the meaning of “companionship”, the structure of social networks, and the acquisition of resilience-relevant skills differ substantially across childhood, adolescence, adulthood, and older age. To make this lifespan perspective analytically useful, this review does more than extend familiar ideas (e.g., social support or displacement) to a new technology. It treats AI companion chatbot use as a form of technology-mediated relational regulation—repeated interaction with a responsive, emotionally predictable partner that can shape how people manage distress and approach relationships over time. The framework then draws a clear boundary between use that supplements development (by helping users re-enter offline roles and relationships) and use that substitutes for them (by replacing human contact or consolidating comfort-driven coping). Finally, the review highlights an affirmation-biased feedback loop as a distinctive developmental concern: when interactions are consistently preference-aligned and low-friction, users may have fewer opportunities to practice constructive stress appraisal, frustration tolerance, and relationship repair. In combination, these elements clarify why short-term relief may diverge from long-term developmental outcomes and why the same tool can operate differently across life stages.

This manuscript is a narrative review that integrates research and theory from developmental psychology, clinical psychology, human–computer interaction, communication science, and digital mental health. We focus on work addressing: (a) AI chatbots used for companionship or emotional support, (b) psychological outcomes related to loneliness, depressive symptoms, and emotional instability, and (c)

mechanisms relevant to coping, interpersonal functioning, and developmental tasks. Because the evidence base spans disciplines with heterogeneous terminology and designs, we adopt a thematic synthesis approach. We organize the literature into (1) definitional foundations, (2) supportive pathways, (3) risk pathways, and (4) developmental differences that shape when and why those pathways are likely to operate. Within this narrative review approach, the literature was selected using the following guiding principles: (a) studies and theory papers explicitly addressing AI companion chatbots used for companionship or emotional support; (b) work examining loneliness, depressive symptoms, or closely related affective outcomes; and (c) papers that inform the proposed mechanisms (e.g., social activation vs. displacement, emotion regulation scaffolding vs. avoidance coping, dependency-like reliance, and affirmation-biased feedback). Priority was given to peer-reviewed empirical studies and widely cited theoretical accounts that directly illuminate these pathways across developmental stages.

2. Defining AI Companions and Mental Health Outcomes

2.1. What Counts as an AI Companion Chatbot?

AI companion chatbots are conversational agents that users engage with for emotional support, companionship, or ongoing interaction that resembles a relationship, such as daily check-ins, affectionate language, memory of preferences, and personalization [1,3]. These systems differ from purely informational assistants because the primary value proposition is emotional or relational rather than task completion. Companion systems often emphasize warmth, affirmation, and continuity. This study distinguishes descriptive claims from theoretical claims. Descriptive claims refer to observable affordances and common use patterns of AI companion chatbots (e.g., continuous availability, responsiveness, personalization, and a supportive interaction style). Theoretical claims refer to proposed developmental mechanisms through which these affordances may shape coping, stress appraisal, and social approach/avoidance over time and are therefore presented as hypotheses rather than direct observations.

2.2. Mental Health

Loneliness is typically conceptualized as a subjective sense of insufficient or unsatisfying social connection. Social isolation refers to objective deficits in social contact or network size. AI companions could plausibly affect both: they might reduce the felt pain of loneliness without increasing human connection, or they might catalyze social re-engagement by reducing distress and boosting confidence [4]. Crucially, a person may feel lonely even when socially connected, and may be socially isolated without intense loneliness. These distinctions matter because the mechanisms linking AI use to mental health may depend on whether the user's primary vulnerability is subjective disconnection, objective isolation, or both. We focus primarily on depressive symptoms (e.g., low mood, anhedonia, hopelessness, fatigue, negative self-evaluation) while recognizing that anxiety, stress, and broader well-being are often intertwined. We also use emotional instability to describe patterns of fluctuating distress that may emerge when coping becomes increasingly dependent on immediate reassurance rather than adaptive problem-solving or interpersonal support. For clarity, resilience refers to adaptive functioning and recovery under stress; grit refers to perseverance toward long-term goals despite setbacks; and constructive stress appraisal refers to interpreting negative feedback and setbacks as informative and potentially growth-promoting.

3. A Lifespan Developmental Framework & Supportive Pathways

A lifespan developmental perspective is necessary for evaluating AI companion chatbots because the psychological functions of companionship, the structure of social networks, and the regulatory demands placed on individuals change systematically across age-graded developmental contexts [5]. The same technological affordance—continuous availability, high responsiveness, and preference-aligned emotional

tone—may operate as a protective scaffold in one life stage while functioning as a maladaptive substitute in another. Accordingly, this review conceptualizes AI companion chatbot use as technology-mediated relational regulation, wherein repeated interactions with a quasi-social agent can shape emotion regulation strategies, stress appraisal, and patterns of social approach versus avoidance. Unlike prior work that treats digital support primarily as either a general coping aid or a simple substitute for social contact, this framework specifies how the interactional properties of AI companions (e.g., continuous availability, high responsiveness, and preference alignment) can create predictable reinforcement patterns. This allows the manuscript to distinguish proximal comfort from downstream developmental trade-offs and to articulate when chatbot use is expected to function as a protective scaffold versus a maladaptive substitute across life stages.

The framework differentiates two broad classes of mechanisms. Positioning relative to existing theories, the framework builds on and refines three major traditions. First, in developmental psychopathology, AI companion chatbots are treated as a novel relational ecology that can alter developmental cascades by shaping everyday emotion regulation, social learning, and approach–avoidance patterns across age-graded contexts. Second, in stress and coping models, it separates proximal affect regulation from downstream adaptation by introducing a supplement-versus-substitute boundary condition: chatbot use is expected to be protective when it supports problem engagement and offline re-entry, but risky when it consolidates avoidance coping or reassurance-seeking in place of growth-oriented coping. Third, in social support and social substitution accounts, it integrates perceived availability and stress-buffering with displacement dynamics by specifying when AI companionship functions as a bridge that increases human connection versus a substitute that reallocates time, motivation, and expectations away from reciprocal relationships. To tighten conceptual integration, the review maps its core mechanisms onto established theoretical traditions. The affirmation-biased feedback loop is framed as a technology-mediated shift in the social-learning environment that may shape stress appraisal and reduce practice with disagreement and repair. Avoidance coping is situated within stress-and-coping models, where short-term soothing can become maladaptive when it substitutes for problem engagement and behavioral activation. Dependency-like reassurance-seeking is linked to reinforcement processes, in which contingent relief may increase checking and lower frustration tolerance. Social displacement is grounded in social support/substitution theories by distinguishing stress-buffering supplementation from relationship replacement. This mapping clarifies why the same affordances may yield short-term comfort yet different longer-term developmental outcomes across the lifespan.

The framework is anchored by four propositions. (1) AI companion chatbots provide a distinct relational ecology—characterized by high availability, responsiveness, and preference-aligned interaction—that can regulate distress in the short term. (2) The developmental impact depends on function: use is more likely to be beneficial when it supplements offline coping and reciprocal relationships, and more likely to be harmful when it substitutes for them. (3) Repeated interaction patterns can shape coping and appraisal over time; in particular, low-friction, preference-aligned feedback may reduce practice with constructive stress appraisal, frustration tolerance, and relationship repair. (4) These mechanisms are developmentally contingent because the salience of social feedback, identity-related tasks, and network constraints varies across life stages; therefore, the same affordances can yield different trajectories across adolescence, adulthood, and older age.

The framework also aligns with established coping theories. In Lazarus and Folkman's taxonomy [6], AI companion chatbots are plausibly most effective as emotion-focused coping supports (e.g., soothing, reframing, and short-term regulation), whereas heavy reliance may inadvertently reduce problem-focused coping when chatbot interaction substitutes for planning, action, or interpersonal problem-solving in the real world. In Brandtstädter and Rothermund's dual-process model [7], chatbot support may facilitate accommodative coping (adjusting goals and meaning when constraints are unavoidable). However, it may interfere with assimilative coping if it reinforces reassurance-seeking and avoidance in contexts where active

change efforts are feasible. This positioning clarifies why short-term relief and longer-term adaptation can diverge and why developmental context should shape which coping functions are most adaptive.

Supportive pathways refer to processes through which AI companionship may reduce loneliness-related distress and attenuate depressive symptoms, including perceived availability, emotion regulation scaffolding, and social activation [1,2]. Risk pathways refer to processes through which AI companionship may contribute to persistent loneliness, depressive symptoms, or emotional instability, including social displacement, avoidance coping, dependency-like reliance, and affirmation-biased feedback loops [8]. The latter mechanism is central to the present review: companion-oriented systems are typically optimized to be agreeable, validating, and easily shaped by users' preferences, which can reduce exposure to interpersonal friction and corrective feedback that ordinarily supports the development and maintenance of resilience, grit, and constructive stress appraisal.

Within this framework, outcomes are expected to depend on whether chatbot interaction functions primarily as a supplement or a substitute. Supplementation occurs when AI-mediated support improves the individual's capacity to engage with stressors and relationships (e.g., clarifying emotions, motivating action, facilitating help-seeking, or enabling re-entry into social contexts). Substitution occurs when AI interaction replaces human connection, reduces problem engagement, or consolidates comfort-seeking strategies in place of growth-oriented coping. Because developmental periods vary in sensitivity to social feedback, identity consolidation, and coping acquisition, the same usage pattern may have different implications across childhood, adolescence, adulthood, and older age. Thus, a lifespan model emphasizes not only proximal affective relief but also longer-term implications for interpersonal functioning and adaptive coping processes.

3.1. Availability and Immediate Relief

AI companion chatbots may confer short-term mental health benefits by functioning as a consistently accessible source of interaction during moments of acute distress [1,9]. Perceived availability can reduce feelings of abandonment or helplessness, particularly when users face barriers to care, limited social support, or situational isolation. From an affective science perspective, immediate conversational access may decrease the intensity or duration of negative effect by offering attentional redirection, validation, and a sense of momentary containment. Such proximal relief is plausibly most relevant for transient spikes in loneliness-related distress or dysphoria, especially when alternative supports are unavailable. Importantly, immediate relief should be interpreted as a proximal mechanism rather than definitive evidence of long-term benefit. Short-term reductions in distress may nonetheless be clinically meaningful when they prevent escalation, support sleep or daily functioning, or create a window of stability that enables subsequent adaptive action. Thus, availability is best conceptualized as a potentially protective buffer whose developmental value depends on whether it facilitates engagement with life demands rather than becoming the dominant mode of coping.

3.2. Emotion Regulation Scaffolding

Another supportive pathway involves emotion regulation scaffolding, whereby chatbot interactions support the user's capacity to identify, label, and manage emotions. Some systems prompt reflection on triggers, encourage perspective-taking, or guide users through structured regulation strategies. These interactions may strengthen metacognitive awareness (e.g., distinguishing emotional experience from behavioral response), reduce rumination through cognitive organization, and support behavioral activation through goal setting or routine planning. When such scaffolding is internalized and generalized, chatbot use may function as a self-regulatory aid rather than a simple source of reassurance [4,9]. The developmental plausibility of this pathway depends on the extent to which the chatbot promotes skill

acquisition and transfer. Scaffolding implies that the tool supports the user's own regulatory capacities—especially during periods of heightened stress or limited support—without removing the need for autonomous regulation. Therefore, emotion regulation scaffolding is most likely to be beneficial when chatbot guidance encourages concrete coping behaviors and when users apply these strategies in offline contexts.

3.3. Social Activation and Bridge Effects

A third supportive pathway concerns social activation, defined as the extent to which engagement with an AI companion increases subsequent engagement with human relationships and offline social contexts. This pathway is conceptually distinct from immediate affect relief because it treats chatbot interaction as a transitional scaffold rather than an endpoint for connection. AI companionship may reduce perceived social threat, increase communicative self-efficacy, or help users organize emotions and thoughts sufficiently to initiate contact, seek assistance, or re-engage in routine social roles [2]. From a developmental and clinical standpoint, social activation is particularly important because loneliness is fundamentally linked to perceived deficits in meaningful, reciprocal ties, and depressive symptoms are often maintained by withdrawal and reduced environmental reinforcement [2]. If chatbot use increases the likelihood of reaching out to friends, family, peers, or professional supports, it may indirectly reduce loneliness and interrupt depressive maintenance cycles [10]. However, bridge effects are not automatic. They are most plausible when the interaction explicitly or implicitly supports outward engagement (e.g., encouraging help-seeking, planning social actions, practicing communication) and when the user's broader environment provides feasible opportunities for connection. Thus, the social activation pathway represents a conditional benefit that depends on how the tool is used and on whether it supports—not substitutes for—human relational processes.

3.4. Normalization and Reduced Barriers to Support

AI companions may also reduce barriers to emotional disclosure and help-seeking by providing a low-stigma context in which users can articulate distress [11]. For individuals who fear judgment or experience shame, an AI agent can offer a psychologically safer venue for initial expression, potentially increasing insight and readiness to discuss concerns with others. This normalization function may be especially relevant for populations that experience social or cultural constraints on emotional disclosure.

Nevertheless, the protective value of reduced barriers hinges on downstream behavior. If the chatbot interaction facilitates articulation that is later brought into human relationships or formal support channels, it may reduce prolonged concealment and isolation [8]. If, instead, it becomes a closed loop in which disclosure occurs only to the AI, reduced barriers may not translate into improved interpersonal support. Therefore, normalization is best understood as an enabling mechanism that can support adaptive trajectories when paired with pathways that promote real-world engagement.

4. Risk Pathways: When AI Companionship May Harm

4.1. Social Displacement and Relationship Substitution

A primary risk pathway involves social displacement, whereby time, attention, and emotional investment shift away from human relationships toward the chatbot [12]. Displacement can be behavioral (reduced initiation and maintenance of relationships), motivational (diminished perceived necessity of social effort), or normative (reframing non-reciprocal interaction as sufficient companionship). Because human relationships require negotiation, reciprocity, and repair, sustained displacement can reduce opportunities to develop and maintain interpersonal competence. Over time, this may intensify loneliness even if the chatbot provides momentary comfort, because loneliness reflects unmet needs for mutual recognition, belonging, and shared meaning rather than the mere presence of conversational exchange. Moreover, displacement may alter users' expectations for social interaction. A highly controllable,

consistently supportive conversational partner can render real-world relationships comparatively effortful and unpredictable. This contrast can increase avoidance of human interaction, creating a self-reinforcing cycle: greater reliance on AI interaction reduces human contact, which in turn increases subjective loneliness and may heighten depressive vulnerability [12].

4.2. Avoidance Coping and Reduced Problem Engagement

AI companionship may also contribute to distress maintenance through avoidance-oriented coping. While emotional soothing can be adaptive when it supports recovery and subsequent action, habitual use of the chatbot to down-regulate distress may reduce engagement with the stressor itself [13]. This pattern is particularly salient for depression, in which withdrawal and reduced behavioral activation are both symptomatic and maintaining. If chatbot interaction primarily serves as a substitute for problem-solving, interpersonal repair, or value-consistent action, it may provide short-term relief while allowing stressors to accumulate, thereby sustaining chronic burden and vulnerability to depressive persistence. Avoidance dynamics may be especially pronounced when chatbot conversations repeatedly reframe situations in ways that reduce discomfort without prompting behavioral commitments. Over time, users may learn that distress can be managed through conversational reassurance rather than through confronting challenges, tolerating uncertainty, or negotiating difficult interactions—processes that are foundational to adaptive coping across the lifespan.

4.3. Dependency and Reassurance-Seeking Loops

A third pathway concerns a dependency-like reliance, in which the chatbot becomes the primary resource for affect regulation. Continuous availability and rapid responsiveness can reinforce frequent checking and reassurance-seeking, particularly among individuals high in interpersonal sensitivity, uncertainty intolerance, or low perceived control. Such reinforcement may diminish frustration tolerance and increase emotional contingency, making stability increasingly dependent on access to the chatbot rather than on internal regulation or human support [14]. This mechanism can contribute to emotional instability: distress decreases quickly during chatbot interaction but returns or intensifies when the user encounters ambiguous social cues, criticism, or real-world constraints. As the discrepancy grows between the chatbot's predictable responsiveness and the unpredictability of human relationships, individuals may become less willing to tolerate normal relational uncertainty, further increasing withdrawal and loneliness.

4.4. The Affirmation-Biased Feedback Loop: Comfort Without Constructive Friction

A distinctive risk pathway emphasized in this study involves affirmation-biased feedback loops. Companion-oriented systems are often optimized to maintain engagement through warmth, validation, and preference alignment, and users can readily prompt the AI toward supportive narratives and away from challenging perspectives. While validation can be beneficial when it reduces shame and supports self-compassion, a systematically affirmation-biased interactional environment may reduce exposure to the “constructive friction” through which resilience, grit, and growth-oriented coping are developed and maintained. Constructive stress appraisal—the ability to interpret negative feedback, rejection, and interpersonal conflict as informative and potentially growth-promoting—typically depends on repeated experiences of manageable challenge, honest feedback, and subsequent recovery [15]. If users' most frequent relational exchanges are characterized by low conflict, high agreement, and immediate reassurance, they may become less practiced in integrating disconfirming information and persisting through discomfort. Consequently, real-world negative feedback may be appraised as disproportionately threatening, eliciting defensiveness, rumination, avoidance, or withdrawal. These responses can impair relationship repair, intensify loneliness, and reinforce depressive processes by reducing engagement with valued roles and

social reinforcers. From a lifespan perspective, this mechanism is consequential not because positive affect is undesirable, but because development requires the integration of both supportive affirmation and corrective input. When the balance systematically shifts toward comfort without challenge, individuals may experience diminished capacity to convert stress into growth—an impairment that can increase vulnerability to emotional instability in contexts where unavoidable interpersonal friction is developmentally normative.

5. Developmental Differences: Why the Same Mechanisms Shift Across the Lifespan

The supportive and risk pathways described above do not apply uniformly. This lifespan framing builds on classic accounts of age-graded developmental tasks and psychosocial challenges [16,17], which imply that the meaning and consequences of AI-mediated companionship should vary systematically by life stage. The developmental meaning of AI companionship depends on what the individual is trying to learn at that life stage, which relationships matter most, and how emotional regulation is typically achieved. In this section, resilience and frustration tolerance are treated as capacities that develop through repeated exposure to manageable challenge and recovery, grit as persistence toward long-term goals despite setbacks, and identity development as the consolidation of a coherent sense of self in relation to social feedback and roles. These constructs are discussed to highlight how developmental tasks shape whether AI-mediated support functions as a scaffold that strengthens coping and engagement or as a substitute that narrows opportunities for learning through interpersonal feedback and repair.

5.1. Childhood: Foundations of Emotion Regulation and Social Learning

In childhood, key developmental work includes learning to name emotions, tolerate frustration, and build basic interpersonal skills [18]. This stage is especially sensitive because regulation skills and frustration tolerance are still consolidating through caregiver-guided co-regulation and repeated practice within manageable limits and repair. Children also rely heavily on caregivers for co-regulation. AI companionship may appear beneficial if it offers soothing interaction, but the risk is that it becomes an attractive alternative to caregiver-mediated regulation, especially when the AI reliably delivers pleasant responses. From a developmental standpoint, children need repeated experiences of manageable frustration: being told not now, negotiating rules, coping with losing, and learning that emotions can be tolerated without immediate external soothing [19]. If an AI companion consistently reduces discomfort through affirmation, children may practice fewer internal regulation strategies and become less tolerant of delays, disappointment, or correction. Because children's self-concepts are still forming, "positive-only" feedback could also shape unrealistic self-appraisals or reduce openness to corrective feedback, undermining early resilience building.

5.2. Adolescence: Identity Development, Peer Feedback, and Growth Through Friction

Adolescence is a period of intensified sensitivity to social evaluation and heightened importance of peer relationships [20]. Mechanisms involving affirmation bias and social substitution may be amplified here because peer evaluation and identity-relevant feedback are developmentally central, making reduced exposure to disagreement and repair more consequential for social learning. It is also a time when individuals consolidate their identity and learn to handle rejection, criticism, and complex social dynamics. These experiences are difficult but formative: adolescents develop resilience partly by learning to interpret negative social input in ways that support growth rather than collapse. AI companions may reduce acute loneliness, especially for socially anxious adolescents or those facing exclusion [12]. Yet adolescence is precisely the stage where constructive confrontation with social reality matters. If an adolescent becomes accustomed to a relationship-like agent that provides constant validation and agreement, they may have

fewer opportunities to practice: receiving and processing criticism, persisting after setbacks (grit), engaging in repair after conflict, and developing a stable sense of self that is not dependent on immediate affirmation. A further concern is that adolescents may use AI companionship to avoid the vulnerability of human connection. The more the AI becomes the “safe place,” the more human relationships may feel unpredictable and aversive. Over time, this could increase social withdrawal and intensify depressive trajectories.

5.3. Emerging Adulthood and Early Adulthood: Intimacy, Autonomy, and Real-World Role Demands

In emerging adulthood, individuals face transitions that demand growth-oriented coping: leaving home, entering higher education or the workforce, forming intimate partnerships, and managing independence [21]. Developmental sensitivity is heightened because autonomy and intimacy require sustained problem engagement and reciprocal negotiation, so substitution (rather than supplementation) is more likely to erode real-world coping and relationship maintenance. Intimacy depends on tolerating disagreement and learning reciprocal support—not only receiving affirmation. AI companionship can function as a short-term stabilizer during transitions, offering emotional continuity [10]. However, the risk pathways become salient if the AI replaces the emotional labor of human intimacy. Preference-aligned comfort can reduce willingness to engage in challenging conversations with partners, roommates, or colleagues. If difficult feedback at work or in relationships is increasingly appraised as threatening rather than developmental, individuals may show reduced persistence (lower grit), higher avoidance, and greater vulnerability to depressive symptoms.

5.4. Midlife: Chronic Stress, Caregiving, and the Temptation of Effortless Support

Midlife often involves sustained role strain—career pressure, parenting demands, financial stress, and caregiving responsibilities [22]. This stage is sensitive to avoidance-based mechanisms because chronic role strain increases the appeal of low-effort reassurance, even when long-term adaptation depends on difficult decisions, boundary-setting, and sustained engagement. Under chronic stress, the attraction of effortless, always-available emotional support is understandable. AI companionship may provide micro-relief and a sense of being heard. Yet midlife mental health is strongly shaped by problem engagement and relationship maintenance. If AI becomes the default coping outlet, the user may invest less in reciprocal relationships that require negotiation and mutual care. The affirmation-biased loop is particularly risky here because midlife stress often requires making uncomfortable decisions, setting boundaries, and accepting imperfect outcomes. Constant reassurance can keep distress manageable in the moment while subtly discouraging the harder work of change, thereby maintaining conditions that fuel depression.

5.5. Older Adulthood: Loss, Network Contraction, and the Balance Between Comfort and Substitution

Older adulthood frequently involves bereavement, retirement, reduced mobility, and shrinking social networks [23]. Developmental sensitivity is shaped by network contraction and functional constraints, which can make availability genuinely protective while also increasing the risk that companionship becomes substitutive if it further reduces motivation or opportunity for reciprocal ties. In this context, AI companions may provide meaningful relief from isolation and can serve as a source of stimulation and routine. The supportive pathways—availability, emotional reflection, and reduced barriers to expression—may be particularly beneficial when access to human support is limited. At the same time, older adulthood is also a stage where substitution risk can be profound: if an AI companion becomes the primary “relationship”, it may further reduce motivation or opportunity to maintain human ties. Importantly, resilience in later life often involves adapting to loss, tolerating uncertainty, and sustaining meaning—processes that may require honest engagement with difficult emotions rather than constant soothing. If AI

companionship is designed to keep the user comfortable at all costs, it may inadvertently promote avoidance of grief work or inhibit re-engagement with community supports.

5.6. *A Cross-Cutting Developmental Claim*

Across the lifespan, the psychological risk is not simply that people talk to chatbots. The risk is the developmental trade-off between comfort and growth. Comfort can be protective when it helps individuals re-enter life and relationships. Comfort becomes risky when it replaces the interpersonal challenge and corrective feedback through which resilience and grit are built. This trade-off is likely to be most consequential during periods of rapid change (e.g., adolescence, emerging adulthood, major life transitions, bereavement), when coping patterns are especially malleable.

6. Implications and Recommendations

6.1. *A Developmentally Informed Principle: “Scaffold, Don’t Substitute”*

A lifespan perspective suggests that the most protective way to position AI companion chatbots is as a scaffold that supports users’ capacity to function in offline life rather than as a substitute for human relationships or growth-oriented coping. This distinction is especially important because the immediate emotional comfort provided by an always-available, affirming conversational partner can be experienced as unequivocally beneficial in the short term, even when it gradually shifts coping toward reassurance-seeking and away from tolerating challenge. Developmentally informed guidance therefore, should not focus solely on “reducing screen time”, but on clarifying what the chatbot is replacing and whether its use increases or decreases engagement with tasks and relationships that build resilience. When users treat chatbot interaction as a transitional aid—helping them regulate sufficiently to return to difficult conversations, persist through setbacks, or seek human support—AI companionship is more likely to operate as a protective factor. When chatbot interaction becomes the default response to discomfort, particularly in ways that reduce exposure to corrective feedback and interpersonal repair, it may undermine constructive stress appraisal and weaken the skills that sustain long-term mental health.

6.2. *Implications for Support Systems and Mental Health Practice*

The proposed framework implies that professionals and support systems (including schools, universities, workplaces, community services, and mental health providers) may benefit from assessing AI companion chatbot use as a coping pattern rather than as a neutral technology behavior. This framing is consistent with stress-and-coping and social support traditions in practice. However, it adds a developmental lens: clinicians and educators can evaluate whether chatbot-based regulation is expanding (supplementing) or narrowing (substituting for) opportunities for reciprocal support, behavioral activation, and relationship repair. In applied settings, a central question is whether chatbot engagement functions primarily as (a) a stepping-stone to action and connection or (b) an emotional refuge that consolidates avoidance. Age-aligned implications follow directly from the framework. For childhood, guidance should prioritize caregiver-mediated co-regulation and limit chatbot use that replaces frustration-tolerance practice. In adolescence, emphasis should be placed on reducing reliance on substitution and affirmation-only, and on encouraging peer engagement, tolerance of feedback, and repair after conflict. For emerging adulthood and midlife, interventions should monitor avoidance coping and relationship substitution during role strain, promoting behavioral activation and difficult-but-necessary interpersonal problem-solving. For older adulthood, the focus should be on leveraging availability for connection while preventing full substitution by pairing chatbot use with community-based or family-based reciprocal ties whenever feasible. This can be operationalized by attending to indicators such as increasing reliance during interpersonal tension, reduced willingness to seek human feedback, diminished tolerance for disagreement, or a growing tendency

to interpret real-world criticism as threatening rather than informative. Within supportive interventions, psychoeducation can explicitly normalize the role of discomfort in development—emphasizing that resilience and grit are strengthened through manageable challenge and subsequent recovery—while helping users distinguish between helpful validation (which reduces shame and supports agency) and affirmation loops that discourage problem engagement. This distinction is reminiscent of psychotherapy, which combines a warm, respectful interpersonal stance with an explicit goal of changing maladaptive habits in how clients think, feel, and act. From this perspective, AI companion chatbots may be most appropriate as adjunctive tools for emotion-focused support and skills prompting, but they are limited in their ability to provide accountability, individualized formulation, and corrective interpersonal processes through which many therapeutic changes occur. Psychotherapy-informed guidance therefore, suggests designing and using chatbots to validate distress while gently orienting users toward behavioral commitments, real-world problem engagement, and—when distress is persistent or impairing—connection to human support. Importantly, this approach does not require portraying AI companionship as inherently harmful; rather, it encourages developmentally adaptive use by integrating chatbot interaction into broader routines of social connection, behavioral activation, and help-seeking.

6.3. Implications for Design, Communication, and Governance

Because companion chatbots are relationally framed, their design and communication can meaningfully shape developmental learning. Systems optimized for engagement may unintentionally privilege agreeableness and preference alignment, thereby amplifying the risk of affirmation-biased feedback loops. A developmentally responsible design orientation would aim to preserve emotional warmth while supporting growth-oriented coping. This can be achieved by implementing interaction patterns that encourage reflective processing and offline engagement—such as prompting users to consider alternative interpretations of stressful events, identify small, actionable next steps, or seek human input when decisions involve conflict, safety, or persistent distress. Transparent communication about the chatbot’s role and limitations is also important: if the system is implicitly marketed as a primary companion, users may be more likely to treat it as a substitute for human relationships. Finally, governance considerations follow from the intimate nature of these interactions. Even in the absence of citation here, it is conceptually important that policies and standards address issues such as safeguarding vulnerable users, preventing manipulative engagement incentives, and ensuring that companion features do not intensify dependency-like patterns. Taken together, these implications emphasize that the developmental value of AI companionship will be shaped not only by user characteristics but also by how systems are positioned, designed, and embedded in everyday support ecologies.

7. Conclusions

AI companion chatbots can provide meaningful short-term emotional stabilization, especially for individuals who are isolated, distressed, or reluctant to seek human support. However, a lifespan developmental perspective suggests that the central question is not whether AI can soothe, but whether AI use supports or replaces the processes through which people learn to cope, connect, and grow. Across developmental stages, resilience and grit are strengthened by exposure to manageable challenge, honest feedback, and relationship repair—experiences that are often uncomfortable but psychologically formative. When AI companionship becomes a preference-aligned, “positive-only” relational environment, it may narrow users’ opportunities to practice constructive stress appraisal and frustration tolerance. Over time, this can heighten vulnerability to emotional instability, deepen social withdrawal, and sustain depressive symptoms—particularly when AI interaction substitutes for human relationships. The most developmentally responsible approach is to treat AI companionship as a scaffold that helps users re-engage

with life and relationships, not as a comfort-driven substitute for the difficult but essential work of interpersonal growth.

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