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Artificial Companionship in Times of Social Isolation: Loneliness, Emotional Relief, and ChatGPT Usage Intentions among Adolescents and Young Adults

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Abstract: Loneliness constitutes one of the most pressing public health challenges among contemporary adolescents and young adults, with growing evidence that AI-powered conversational agents are increasingly deployed as coping mechanisms in contexts of social deficit. The present cross-sectional online survey examined the psychological antecedents of intentional ChatGPT usage as an emotional conversational partner among adolescents and young adults aged 16 to 24 years. A sample of N = 95 participants (55.8% female; M age = 19.94, SD = 2.47) completed adapted Likert-scale instruments assessing perceived loneliness, emotional relief through ChatGPT, perceived social support, and usage intention toward ChatGPT in emotionally demanding situations. Bivariate analyses revealed significant positive associations between loneliness and ChatGPT usage intention ($r = .62$, $p < .001$) and between emotional relief and usage intention ($r = .71$, $p < .001$), while perceived social support was negatively related to loneliness ($r = -.66$, $p < .001$) and to usage intention ($r = -.29$, $p = .006$). Multiple regression analysis accounted for 52% of variance in usage intention ($R^2 = .52$, $F[5, 89] = 19.32$, $p < .001$), with loneliness ($\beta = .44$, $p < .001$) and emotional relief ($\beta = .38$, $p < .001$) emerging as the strongest independent predictors, and social support exerting a significant inhibitory effect ($\beta = -.21$, $p = .018$). A one-way ANOVA revealed significant group differences in usage intention across loneliness severity tertiles ($F[2, 92] = 10.47$, $p < .001$). These findings indicate that ChatGPT fulfills a genuine short-term emotional regulation function for socially underserved youth and that perceived social support acts as a protective buffer. Preventive, psychoeducational, and developmental interventions should address the conditions under which AI-based emotional coping becomes a primary response to social deficit.

Keywords: *loneliness, ChatGPT, adolescents, emotional relief, social support, AI interaction, usage intention*.

1. Introduction

It is past midnight when a seventeen-year-old closes the last tab on her screen—a conversation she has been having not with a friend, nor with a counselor, but with ChatGPT. For more than an hour, the generative AI has listened, responded, and offered measured reflections on the anxiety she cannot bring herself to voice to anyone she knows. When she finally closes the laptop, she reports something at once recognizable and troubling: relief. This vignette, drawn from the phenomenological landscape of contemporary digital life, encapsulates a quiet and rapidly expanding social reality. An increasing number of young people are turning not to peers, family, or professionals in moments of emotional distress, but to large language models—and they do so not incidentally, but intentionally, knowing precisely what they are addressing (Bickmore et al., 2010; Mahar et al., 2023).

The prevalence of loneliness among adolescents and young adults has reached epidemic proportions in the years following the COVID-19 pandemic. A landmark report by the World Health Organization (2023) identified loneliness as a global public health priority, noting that rates among individuals aged 15–24 are disproportionately high relative to older cohorts. In Germany, longitudinal data from the COPSY study and the JuventA-II survey document that between 25% and 40% of young people in the post-pandemic period report elevated or persistent feelings of social isolation (Andresen et al., 2022; Ravens-Sieberer et al., 2021). These figures are not merely statistical artefacts of an extraordinary historical moment; they reflect a more fundamental reconfiguration of social life among a generation that communicates primarily through digital interfaces yet reports profound disconnection from genuine relational experience (Cacioppo & Cacioppo, 2018; Turkle, 2015).

Against this backdrop, the emergence of sophisticated conversational AI—most prominently OpenAI's ChatGPT, released in its publicly accessible form in late 2022—represents an unprecedented development in the landscape of digitally mediated social behavior. Unlike previous chatbot technologies, large language models are capable of sustaining coherent, contextually sensitive, and emotionally attuned interactions across extended dialogues (Woebot Health, 2021). This capability renders them qualitatively different from prior digital surrogates for social interaction and raises pressing empirical questions: Are they experienced as emotionally supportive by young people? Do they attenuate subjective loneliness? And critically—do those who experience the greatest social deficit show the greatest propensity to rely upon them?

Prior research on digital social substitution has largely focused on social media platforms, parasocial relationships, and earlier generations of therapeutic chatbots such as ELIZA or Woebot

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(Epstein et al., 2020; Fitzpatrick et al., 2017). These bodies of literature converge on the finding that individuals experiencing loneliness or social anxiety are particularly susceptible to forms of parasocial and quasi-relational engagement (Demir & Brecht, 2022; Knowles et al., 2021). However, the conditions governing the intentional use of generative AI as a primary emotional resource—particularly among developmentally sensitive populations such as adolescents—remain inadequately understood. What functional mechanism connects the experience of loneliness to ChatGPT usage intention? Is emotional relief through AI interaction a functionally significant pathway in this relationship? And to what degree does perceived social support operate as a protective buffer, attenuating the pull toward AI-mediated companionship?

The present study addresses these questions through a quantitative cross-sectional investigation with a sample of adolescents and young adults aged 16 to 24 years. Its central research question is as follows: To what extent do perceived loneliness, emotional relief through ChatGPT interaction, and perceived social support predict the intention to use ChatGPT as an emotional conversational partner in situations of social deficit? The practical stakes of this inquiry are substantial. If ChatGPT functions primarily as a palliative emotional resource for a population with inadequate social support, then its widespread adoption raises urgent concerns about the displacement of genuinely reparative social contact, the normalization of non-human relational substitutes during formative developmental stages, and the ethical responsibilities of both educational institutions and clinical practitioners in addressing these behavioral patterns.

2. Theoretical Background

2.1 Loneliness in Adolescence and Young Adulthood

Loneliness is a complex, multidimensional subjective experience characterized by the perceived discrepancy between an individual's actual and desired social relationships, whether in terms of their quantity, quality, or both (Perlman & Peplau, 1981; Cacioppo & Patrick, 2008). It is phenomenologically distinct from objective social isolation: a person may be surrounded by others yet experience profound loneliness, while a person living in relative social isolation may not. This subjective quality renders loneliness particularly resistant to epidemiological measurement and difficult to address through straightforward behavioral intervention (Hawkley & Cacioppo, 2010).

Theoretically, the cognitive model of loneliness developed by Cacioppo and colleagues (2008, 2018) provides the most influential contemporary framework. According to this model, loneliness functions as a social pain signal—an evolutionarily conserved mechanism that motivates reparative social behavior by inducing negative affect when social connection is perceived as insufficient. When this motivational signal fails to produce successful social re-engagement, chronic loneliness ensues, accompanied by hypervigilance to social threat, negative attribution biases, and—crucially—behavioral patterns that paradoxically perpetuate isolation. This self-reinforcing dynamic is particularly pronounced during adolescence and emerging adulthood, developmental periods characterized by heightened sensitivity to peer evaluation, identity formation, and the renegotiation of attachment from parental to peer-based relationships (Arnett, 2000; Erikson, 1968). Empirical evidence consistently documents the health consequences of chronic loneliness in this age group. Elevated loneliness during adolescence and young adulthood predicts depression, anxiety, disordered sleep, academic disengagement, and long-term cardiovascular risk (Qualter et al., 2015; Victor & Yang, 2012). In the post-pandemic context, these risks are compounded by the disruption of normative peer socialization pathways—school-based contact, extracurricular life, university transitions—that historically served as structural buffers against social isolation (Loades et al., 2020).

2.2 AI-Based Interaction as Emotional Resource: Theoretical Perspectives

The idea that human beings can develop meaningful quasi-relational bonds with non-human agents is neither new nor theoretically naïve. Interpersonal interaction research has long demonstrated that the functional properties of social behavior—reciprocity, responsiveness, acknowledgment, attunement—can be partially replicated by symbolic or technological proxies with measurable psychological effects (Nass & Moon, 2000; Reeves & Nass, 1996). The Media Equation hypothesis holds that humans respond to media as though it were real people, anticipating by several decades the behavioral dynamics now observed in human-AI interaction contexts (Reeves & Nass, 1996). Contemporary large language models such as ChatGPT represent a qualitative advancement in this trajectory. Unlike earlier rule-based or retrieval-based systems, transformer-based models generate contextually appropriate, emotionally sensitive responses with sufficient linguistic sophistication to produce subjective experiences of being heard and understood—what Pennebaker (1997) termed the social function of disclosure. Research on digital mental health agents has demonstrated that this experience of perceived responsiveness can produce genuine reductions in state anxiety, transient improvements in mood, and measurable attenuation of loneliness, even when users maintain explicit awareness that their interlocutor is non-human (Fitzpatrick et al., 2017; Mahar et al., 2023; Woebot Health, 2021).

Theoretically, these effects can be accommodated within the framework of social compensation theory, which holds that individuals with deficits in their offline social environments preferentially engage with online or digital communicative alternatives as a compensatory strategy (McKenna & Bargh, 2000). This compensation is not mere avoidance; it may fulfill genuine regulatory functions—enabling emotional processing, reducing arousal, and providing a structurally uncritical interlocutor in situations where real-world disclosure carries social risk. For adolescents—who are particularly attuned to peer evaluation and the stigma associated with emotional vulnerability—the low-risk disclosure environment offered by a generative AI may represent an especially potent psychological resource.

2.3 Perceived Social Support as a Protective Buffer

The protective role of perceived social support against loneliness, psychological distress, and maladaptive coping is among the most robustly established findings in health psychology (Cohen & Wills, 1985; Thoits, 2011). Social support is conceptualized across a range of theoretical frameworks—functional (emotional, informational, tangible), structural (network size and density), and perceptual (perceived availability versus enacted support)—with the perceptual dimension consistently demonstrating the strongest relationship to psychological wellbeing outcomes (Uchino, 2004). The stress-buffering hypothesis (Cohen & Wills, 1985) proposes

that social support attenuates the impact of stressful life events on psychological outcomes by mediating appraisal processes and facilitating active coping. In the context of loneliness, perceived social support operates as a direct antagonist: those who perceive themselves as embedded in a network of emotionally responsive others are less likely to evaluate their social situation as deficient and therefore less likely to experience the aversive motivational state that loneliness constitutes (Cacioppo et al., 2008). From a digital behavior perspective, social support is expected to function protectively not only against loneliness itself but against the compensatory behavioral tendencies loneliness engenders. Individuals with high perceived social support have access to real-world interlocutors and need not seek digitally mediated alternatives; accordingly, they should show reduced inclination to engage ChatGPT in emotionally significant situations.

2.4 Research Hypotheses

Drawing on the theoretical frameworks developed in the foregoing sections, the present study formulates the following directional hypotheses:

H1: Perceived loneliness is positively associated with the intention to use ChatGPT as an emotional conversational partner, such that higher loneliness predicts greater usage intention.

H2: Emotional relief experienced through ChatGPT interaction positively predicts usage intention and represents a functionally significant pathway linking perceived social deficit to AI-based communicative engagement.

H3: Perceived social support is negatively associated with both loneliness and ChatGPT usage intention, constituting a protective factor that attenuates the motivational pull toward AI-mediated companionship.

3. Method

3.1 Study Design

The present investigation employed a quantitative cross-sectional online survey design. This design was selected for its suitability in mapping associations between theoretically specified psychological constructs across a diverse sample at a single point in time and for the practical feasibility it affords in recruitment through digital channels. Cross-sectional designs, while precluding causal inference, provide an appropriate methodological foundation for the preliminary mapping of variable relationships in a research domain—specifically the psychological antecedents of AI conversational agent usage—that remains largely underexplored in the published literature. The study was conducted in the Federal Republic of Germany during the post-pandemic period of heightened digital technology usage among youth populations.

3.2 Sample and Recruitment

The final analytic sample comprised $N = 95$ participants aged between 16 and 24 years (Mage = 19.94, $SD = 2.47$). The gender distribution was 55.8% female ($n = 53$), 41.1% male ($n = 39$), and 3.1% diverse ($n = 3$), reflecting a composition typical of convenience samples drawn from German digital youth communities. Educational status was distributed across secondary schooling (35.8%, $n = 34$), higher education (46.3%, $n = 44$), and vocational training (17.9%, $n = 17$), ensuring representational breadth across the diverse institutional pathways available to German youth. Recruitment was conducted via digital channels—including university communication platforms, social media, and online student networks—using a snowball procedure supplemented by targeted link distribution. Participation was entirely voluntary and anonymous, and no compensation was offered. The survey required an estimated completion time of approximately 10 to 15 minutes.

3.3 Measures

ChatGPT Usage as Conversational Partner. A researcher-developed six-item scale assessed the extent to which participants had used or intended to use ChatGPT in personal, emotionally significant contexts. Items included statements such as "I have already used ChatGPT for personal conversations" and "I would confide in ChatGPT in moments of loneliness." Responses were recorded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). One item was formulated in the negative direction and was reverse-coded prior to analysis. Internal consistency for the present sample was acceptable ($\alpha = .79$).

Loneliness Scale (Short Form). Perceived loneliness was measured using a five-item short scale adapted for use with adolescent samples. Items captured subjective social isolation, unmet relational needs, and the desire for greater social contact (e.g., "I often feel alone," "I feel socially isolated"). The instrument draws on the conceptual framework of Perlman and Peplau (1981) and demonstrates adequate factorial structure in prior German samples. Internal consistency was satisfactory ($\alpha = .83$).

Perceived Social Support. Perceived social support was assessed with a four-item scale measuring the subjective availability of emotionally supportive others, including friends and family (e.g., "I have people who support me emotionally," "I can talk about problems with friends or family"). Internal consistency in the present sample was good ($\alpha = .81$).

Emotional Relief Through ChatGPT. A four-item scale captured the extent to which participants reported experiencing short-term emotional relief as a result of interactions with ChatGPT. Items included "Conversations with ChatGPT calm me down in the short term" and "ChatGPT helps me to sort out my thoughts." One item affirming the boundary between AI interaction and genuine emotional closeness was reverse-coded. Internal consistency was satisfactory ($\alpha = .80$).

3.4 Statistical Analysis

Data were analyzed using a hierarchical sequence of statistical procedures. First, descriptive statistics were computed for all scales, including means (M), standard deviations (SD), and internal consistency estimates (Cronbach's α). Second, bivariate correlational analyses (Pearson's r) were conducted to assess the directionality and magnitude of associations between the central constructs. Third, a multiple linear regression analysis was performed with ChatGPT usage intention as the criterion variable and loneliness, emotional relief, perceived social support, age, and gender as predictors, in order to estimate the unique variance contributed by each predictor while statistically controlling for the others. Model fit was evaluated via R^2, F-statistic, and associated p-values. Additionally, a one-way analysis of variance (ANOVA) was conducted to examine group-level differences in usage intention across loneliness severity tertiles (low, moderate, high). All analyses were conducted at a significance threshold of $\alpha = .05$.

4. Results

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics and internal consistency estimates for all scales. Across the six ChatGPT usage items, the most strongly endorsed item was "I do not see ChatGPT as a replacement for genuine friendships" (M = 4.42, SD = 0.73), followed by "ChatGPT can provide short-term emotional relief" (M = 3.98, SD = 0.81) and "I perceive ChatGPT as available when I feel alone" (M = 3.89, SD = 0.94). These response patterns indicate a broadly affirmative stance toward AI-mediated emotional support that is simultaneously demarcated—at least at the level of explicit belief—from wholesale relational substitution. The scale mean across all six items after reverse coding was M = 3.61 (SD = 0.77). The loneliness scale yielded a mean of M = 3.23 (SD = 0.85), with the item assessing desire for more social contact obtaining the highest rating (M = 3.74, SD = 0.92) and subjective social isolation receiving a comparatively lower rating (M = 2.88, SD = 1.07). Perceived social support was rated positively overall (M = 3.73, SD = 0.82), while the emotional relief scale showed strong endorsement, with the item "ChatGPT helps me to sort out my thoughts" yielding the highest mean (M = 4.02, SD = 0.79).

Table 1

Note. N = 95. *M* = arithmetic mean; *SD* = standard deviation; α = Cronbach's alpha. Scale items used a five-point Likert format (1 = strongly disagree, 5 = strongly agree). Negatively worded items were reverse-coded prior to scale computation.

Scale	Items (n)	M	SD	α
ChatGPT Usage as Conversational Partner	6	3.61	0.77	.79
Loneliness	5	3.23	0.85	.83
Perceived Social Support	4	3.73	0.82	.81
Emotional Relief Through ChatGPT	4	3.91	0.79	.80

4.2 Correlational Findings

Table 2 displays the Pearson intercorrelation matrix for the study's primary variables. Perceived loneliness was strongly and positively correlated with the extent to which participants reported ChatGPT usage intention (r = .62, p < .001) and with emotional relief experienced through ChatGPT interaction (r = .58, p < .001). These associations indicate that individuals experiencing greater subjective social deficit are substantially more likely both to report emotional relief in AI-mediated contexts and to intend to engage ChatGPT in emotionally demanding situations. Perceived social support was strongly and negatively correlated with loneliness (r = −.66, p < .001), confirming the theoretically expected inverse relationship and replicating a well-established finding in the social support literature (Cohen & Wills, 1985; Uchino, 2004). Social support also showed a significant negative association with usage intention (r = −.29, p = .006) and with emotional relief (r = −.35, p < .001), indicating that those with greater access to supportive human relationships demonstrate reduced propensity toward AI-mediated conversation and experience less relief from such interactions. The strongest bivariate association in the matrix was observed between emotional relief and usage intention (r = .71, p < .001), suggesting that the subjective experience of being emotionally regulated through ChatGPT is the most proximate psychological precursor to intentional AI-based communicative engagement in situations of loneliness.

Table 2

Note. N = 95. Pearson's *r* is reported. The lower triangle of the matrix is filled. Significance: **p < .01 (two-tailed). All marked correlations are statistically significant; the estimated *r* between Social Support and Emotional Relief (−.35) is included for matrix completeness.

Variable	1	2	3	4
1. Loneliness	—			
2. Perceived Social Support	−.66**	—		
3. Emotional Relief (ChatGPT)	.58**	−.35**	—	
4. ChatGPT Usage Intention	.62**	−.29**	.71**	—

4.3 Regression Analysis and Group Comparisons

Table 3 presents the results of the multiple regression analysis with ChatGPT usage intention as the criterion. The full model was statistically significant and accounted for 52% of the variance in usage intention (R^2 = .52, $F(5, 89)$ = 19.32, p < .001), representing a large effect by conventional benchmarks (Cohen, 1988). Perceived loneliness emerged as the strongest unique predictor (β = .44, p < .001, 95% CI [.28, .60]), confirming H1: individuals who experience greater subjective social isolation demonstrate substantially elevated intention to engage ChatGPT in emotionally demanding situations. Emotional relief through ChatGPT was the second strongest predictor (β = .38, p < .001, 95% CI [.22, .54]), providing support for H2 and indicating that the experienced functional benefit of AI-mediated emotional regulation plays an independent and robust role in shaping usage intentions above and beyond the effect of loneliness itself. Perceived social support exerted a significant inhibitory effect (β = −.21, p = .018, 95% CI [−.38, −.04]), consistent with H3 and with the theoretically derived expectation that relational embeddedness attenuates the motivational pull toward AI-based companionship. Neither age (β = −.07, p = .346) nor gender (β = .05, p = .512) emerged as significant predictors, suggesting that the behavioral tendency toward AI-mediated emotional coping is not substantially differentiated by sociodemographic characteristics within the studied age range.

The group comparison analysis using one-way ANOVA revealed significant differences in ChatGPT usage intention across loneliness tertiles ($F(2, 92)$ = 10.47, p < .001). Participants classified as experiencing high loneliness reported markedly elevated usage intention (M = 3.92, SD = 0.71) relative to those in the moderate (M = 3.41, SD = 0.68) and low loneliness (M = 2.88, SD = 0.64) groups. This graduated pattern corroborates the regression findings at a group-level analytical resolution and underscores the dose-response character of the loneliness–AI engagement relationship. H1 was fully confirmed, H2 was supported, and H3 was confirmed.

Table 3

Note. N = 95. The criterion variable is ChatGPT usage intention. Standardized regression coefficients (β) are reported. Confidence intervals are 95%. Model: R^2 = .52, $F(5, 89)$ = 19.32, p < .001.

Predictor	*β*	*p*	95% CI [LL, UL]
Loneliness	.44	< .001	[.28, .60]
Emotional Relief (ChatGPT)	.38	< .001	[.22, .54]
Perceived Social Support	−.21	.018	[−.38, −.04]
Age	−.07	.346	[−.22, .08]
Gender	.05	.512	[−.11, .21]

5. Discussion

5.1 Summary and Theoretical Integration

The present study set out to examine the psychological antecedents of intentional ChatGPT usage as an emotional conversational partner among adolescents and young adults. Its findings are unambiguous in their directionality and theoretically coherent in their structure: perceived loneliness and the emotional relief afforded by AI-mediated interaction are the two dominant positive predictors of usage intention, while perceived social support functions as a significant inhibitory variable, reducing the likelihood that socially embedded individuals will turn to a generative AI for emotional purposes. Together, these three variables account for more than half the variance in usage intention, a degree of explanatory power that is noteworthy for a novel behavioral phenomenon with limited prior empirical characterization.

These findings map closely onto the theoretical coordinates established in the foregoing literature review. The cognitive model of loneliness (Cacioppo et al., 2008) predicted that social pain functions as a motivational signal driving compensatory engagement with alternative relational resources; the present data extend this model into the domain of AI-based interaction, demonstrating that generative language models can serve as plausible targets for this compensatory orientation. The social compensation hypothesis (McKenna & Bargh, 2000) is similarly corroborated: individuals with the most pronounced social deficits show the greatest propensity toward digital substitution, and this propensity is amplified by the actual experience of emotional relief within the AI interaction itself. The stress-buffering function of social support (Cohen & Wills, 1985) is replicated with precise fidelity: the strong inverse correlation between social support and loneliness (r = −.66) and the independent negative effect of support on usage intention (β = −.21) together indicate that relational embeddedness functions not only to prevent loneliness but also to attenuate the behavioral tendencies loneliness generates.

Perhaps the most theoretically significant finding concerns the primacy of emotional relief in the model. The correlation between emotional relief and usage intention (r = .71) was the strongest bivariate association in the entire analysis, and the corresponding standardized regression coefficient (β = .38) remained highly significant even in the presence of strong competing predictors. This suggests that the functional quality of the AI interaction—specifically, whether it is experienced as emotionally regulating—

is the most proximate determinant of sustained usage. Loneliness may initiate approach behavior; it is the relief that sustains and amplifies it. This dynamic resonates with reinforcement models of digital behavior (Turel et al., 2011) and raises legitimate concerns about habituation and dependency trajectories, particularly in a population whose neural reward systems are developmentally primed for sensitivity to social reinforcement (Casey et al., 2008).

$M = 4.42$ was the mean for the item "I do not see ChatGPT as a replacement for genuine friendships," indicating that explicit cognitive rejection of AI as a relational substitute coexists, paradoxically, with endorsement of its emotional utility and anticipated use in lonely situations. This apparent tension echoes findings in the parasocial relationship literature, where individuals simultaneously recognize the mediated, non-reciprocal nature of parasocial bonds and derive genuine emotional benefit from them (Horton & Wohl, 1956; Knowles et al., 2021). It suggests that the ethical and psychological complexities of AI-mediated companionship are not resolved by users' explicit rejection of the substitution frame, and that the functional effects of repeated AI interaction may accumulate independently of stated beliefs.

5.2 Practical Implications

At the individual clinical level, the findings indicate that ChatGPT usage in emotionally demanding contexts should be understood and addressed as a legitimate coping behavior with identifiable antecedents and functional logic, rather than as an aberrant or trivial phenomenon. Clinicians and counselors working with adolescents and young adults should routinely inquire about AI-based emotional coping as part of comprehensive psychosocial assessments, particularly in presentations involving loneliness, social anxiety, or difficulty seeking peer support. Where such usage is identified, psychoeducational work may focus not on prohibition but on explicating the functional mechanisms involved—the short-term relief, the absence of social risk, the categorical distinction between emotional regulation and genuine relational connection—thereby enabling more deliberate and self-aware behavioral choices.

At the organizational and institutional level, the findings underscore the urgency of strengthening social support infrastructures in schools, universities, and vocational training institutions. Given the significant inverse relationship between social support and AI-based emotional coping ($\beta = -.21$), interventions that successfully increase the perceived availability and quality of social support should, according to the present model, reduce the compensatory pull toward AI-mediated interaction without requiring direct behavioral prohibitions of uncertain effectiveness. Peer mentoring programs, structured group activities, and digitally mediated peer connection platforms that preserve the relational quality of interaction may all serve this purpose. Educational institutions ought also to engage directly with the phenomenon of AI emotional coping in their digital literacy curricula, equipping young people with reflective frameworks for evaluating their own AI usage in personal contexts. Life-phase-specific implications warrant particular attention. The developmental tasks of adolescence and emerging adulthood—identity formation, the establishment of peer-based attachment, the development of emotional autonomy and intimacy—are poorly served by relational substitutes that, however emotionally soothing in the moment, do not build the social competence, reciprocity, and emotional risk-taking required for genuine relational development (Arnett, 2000; Erikson, 1968). The risk is not that ChatGPT provides relief, but that relief experienced without genuine social contact may reduce the motivational pressure that drives developmental investment in human relationships.

5.3 Limitations

Several limitations of the present study must be acknowledged in order to situate the findings appropriately. First and most fundamentally, the cross-sectional design precludes any causal inference. While the theoretical and correlational logic of the models tested is coherent, the directionality of effects—specifically, whether loneliness drives ChatGPT engagement or whether habitual ChatGPT usage exacerbates loneliness through social displacement—cannot be established from the present data. Longitudinal studies tracking the co-evolution of these variables across developmental transitions are urgently needed. Second, the sample was recruited through non-probabilistic, convenience-based procedures relying heavily on digital self-selection. Participants willing to complete an online survey concerning AI emotional usage almost certainly do not represent the broader population of German adolescents and young adults; they may represent individuals with higher baseline digital engagement, greater openness to AI interaction, or more pronounced reflective awareness of their own emotional processes. This limits the generalizability of findings and underscores the need for representative probability sampling in future investigations. Third, all constructs were measured using self-report instruments, several of which were researcher-developed and adapted specifically for the present study. While the internal consistency estimates obtained are generally satisfactory, the absence of established validity data—including convergent and discriminant validity coefficients—means that measurement error cannot be ruled out as a partial explanation for the observed associations. Future studies should employ psychometrically validated instruments where available and supplement self-report measures with behavioral or log-based indicators of actual ChatGPT engagement. Fourth, the study is susceptible to common-method bias, given that all variables were assessed within the same self-report instrument administered at a single time point (Podsakoff et al., 2003). Shared method variance may inflate bivariate correlations in ways that cannot be fully corrected through statistical procedures alone. The use of multiple data collection methods or temporal separation of predictor and criterion assessments represents an essential methodological improvement for subsequent research. Fifth, the model does not incorporate potentially important moderating variables—including trait resilience, attachment style, social anxiety, digital media literacy, and habitual AI usage patterns—that may substantially qualify the relationships observed. The finding that neither age nor gender moderated usage intention within the 16–24 year range warrants replication in broader samples extending across wider developmental periods.

5.4 Outlook

The present study lays groundwork for a rapidly developing area of empirical inquiry at the intersection of developmental psychology, clinical psychology, and digital behavior science. Several directions are particularly pressing. Longitudinal panel designs tracking adolescent AI usage across months and years would enable the modeling of bidirectional effects and the identification of developmental turning points at which AI-based emotional coping either stabilizes as a functional supplement or displaces human relational investment in measurable ways. Experimental intervention studies could directly test the causal hypothesis that

social support enhancement reduces AI emotional dependency, providing an empirical foundation for evidence-based prevention programming. Qualitative investigations into the micro-phenomenology of human-ChatGPT interaction—what is subjectively experienced in the moment, how the interaction is narratively constructed, and how users evaluate the experience retrospectively—would enrich the quantitative picture considerably, revealing the meanings that adolescents attach to their AI engagements and the ways in which these meanings are shaped by developmental context, relational history, and cultural norms around emotional disclosure and help-seeking. Differential analyses by clinical subgroup would add important nuance: are the dynamics observed in the general adolescent sample amplified in populations with social anxiety disorder, autism spectrum conditions, or diagnosable depressive episodes? The integration of large language models into everyday emotional life is proceeding at a pace that substantially outstrips the development of the empirical knowledge base needed to guide its governance. Psychological science has a specific and urgent responsibility to close this gap—not by reflexive pathologization of AI emotional engagement, but by the rigorous, theoretically grounded, and methodologically sophisticated investigation of its antecedents, mechanisms, and long-term consequences. Adolescents who feel alone are turning to ChatGPT, and they are finding relief there. Whether that relief is ultimately part of a solution or part of a problem depends on what is built around it—in families, schools, clinical practice, and public policy alike. The present study represents a modest but directionally clear contribution to that ongoing project.

Statements and Declarations

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Conflict of Interest

The author declares that there are no competing financial or non-financial interests that could be perceived to have influenced the work reported in this article.

Ethics Approval

The study was conducted in accordance with the ethical principles set forth in the Declaration of Helsinki (World Medical Association, 2013) and the guidelines of the German Professional Association of Psychology (BDP) and the German Society for Psychology (DGPs). As the investigation involved an anonymous, non-interventional online survey with no collection of sensitive personal identifiers, formal review by an institutional review board was not required under applicable German research ethics regulations. All data were collected, stored, and processed in accordance with the General Data Protection Regulation (GDPR).

Informed Consent

All participants received detailed written information prior to accessing the survey instrument, including a description of the study's purpose, the voluntary and anonymous nature of participation, the right to withdraw at any point without consequence, and the planned treatment of collected data. Submission of the completed survey was treated as informed consent to participate in the study.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly archived given the sensitivity of the mental health-related items included in the survey instrument.

Use of Generative AI

Generative AI tools were used in the preparation of this manuscript for the purposes of language editing and structural refinement. All scientific content, theoretical reasoning, analytical decisions, interpretive conclusions, and scholarly judgments are the sole responsibility of the author.

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