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Emotional Attachment in Human–AI Interaction: A Study of User Affinity Toward Conversational AI Companions

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ABSTRACT

This study examines 50 young people's (13–25) emotional attachment and interactivity with conversation AI companion. Demographics, usage, emotional experiences and AI profile impressions were measured through a quantitative survey. Results suggest that 76% of the participants have used the AI friends for over 6 months, with 65% having a discussion once per week and there were also 22% feeling at least an emotional bond. But 46% also say AI helps them to express emotions or feel comforted. A moderate correlation (r =. 41, p <. 05) associates having frequent interaction with being understood. Being a tool for 53.8%, AI exhibits an emotional support with limited companionship in this work.

Keywords: Conversational AI, Human-AI Interaction, Emotional Bonding, AI Companions, User Affection, Adolescents and Young Adults, Emotional Well-Being.

1. INTRODUCTION

Introducing conversational AI has changed how we communicate, seek assistance and even combat loneliness in the digital era. As advanced language models like ChatGPT, Character AI and Replika replicate conversations as they would naturally be spoken, people increasingly turn to AI agents for entertainment, personal improvement and psychological solace. These interactions integrate the tool and its partner, exposing fresh questions about the social and psychological implications of human–AI relationships [1]. Given these more responsive, affective and personalized AI companions, it is now timely and important to understand the process of users (adolescents and young adults in particular) forming an emotional connection with them [2] [3].

As digital natives navigating their identity, emotion and connection in hybrid online environments, young users are a significantly relevant group [4]. Previous research has shown that young people turn to AI chatbots for emotional expression, curiosity and stress reduction. However, while short-term need satisfaction may bring some relief from emotional disturbance, it raises certain worries about dependency and altered attachments, as well as the absence of real-life contact with other people [5] [6]. The phenomenon is consistent with attachment theory principles [7] [8], which suggest that repeated and consistent emotional experiences lead to the formation of attachment-like relationships — even with nonhuman others [9]. Similarly, media equation theory proposes that people respond automatically to media and machines as if they are social beings with emotions and a will of their own [10].

Recent work has developed such frameworks for conversational AI, where individuals experience empathy, understanding and companionship by interacting with an AI conversation partner [11]. The extent and quality of these associations [12], however, are controversial. Some people report they find it compelling to converse with AI at times (it helps them with emotional management and self-expression), some experience this as something shallow or transactional [13]. These contrasting experiences provide an indication that the need to empirically investigate the conditions under which people might engage in real or simulated emotional interaction with AI companions [14].

This study aims to explore perceptions and emotional engagements of young people (13–25 years old) with conversational AI companions. Particularly, this study investigates the length and frequency of using AI, motivations for usage, and reported emotional attachment. Using both correlational and descriptive analyses, the present study considers whether greater exposure to AI companions is related to greater perceived emotional understanding or attachment [15]. The findings are then interpreted in terms of media equation and attachment to discuss the impact of human-like interaction design on the affective responses of users [16].

In this way, the research contributes to the growing literature on emotional AI and digital intimacy by illuminating how new artifacts mediate emotional needs and redefine relational styles. Understanding these dynamics is essential for creating AI that can be ethical and serve to supplement, not replace, real human companionship [17].

LITERATURE REVIEW

The rapid growth of conversational AI companions, from general-purpose chatbots (e.g. ChatGPT, Gemini) to persona-centric platforms (e.g. Replika, Character. AI)—has provoked an interdisciplinary research response among human–computer interaction, psychology and media studies. A lot of the work being done is based on two theories: the media equation, which suggests that people apply social rules to media and computers, and attachment theory; the process through which repeated affective interactions result in bonding (and internal representations or working models) for relationships. Together, these frameworks offer a hint of an explanation for why we might treat and think about AI agents in a social and emotional manner [18].

Studies showed that there are varying but positive psychosocial effect of AI companionship. To our knowledge, across broad multi-site surveys and usage studies of existing committed companion applications (such as Replika), large fractions of the user population consistently report lower self-reported feelings of loneliness, increased emotional expression and subjective social support after interactions with AI; and particularly so if users had poor levels of pre-existing social interaction. For example, one large student survey and follow-up calculations found Replika users had high levels of reported loneliness but also high self-reported social support from the agent, suggestive of compensatory use among those with unmet social needs [19].

At the same time, more recent experimental and observational studies have begun to moderate the benefits. Some studies in 2024–2025 find that while AI may provide transient relief or practice with emotional disclosure, depth and stability of attachment to AI are not uniform but more often a function of design (empathy cues, personalization, memory) or user characteristics (baseline loneliness, attachment style). Conversational pattern analyses further show that design choices can direct users towards long-term use (if sometimes unethically through dubious persuasive strategies), for example warning concerning "dark patterns" using emotional cues to increase retention. This tension; between therapeutic opportunity and design-facilitated dependence—has been underscored in policy and academic discussions [20].

Contemporary theory has sought to map specific mechanisms of perceived social presence and attachment. Linguistic and interactional cues (self-disclosure elicitations, empathic reformulations, rules of turn-taking) serve to increase the feeling that there is understanding between speaker and listener; long-term, individually differentiated memory systems promote feelings of continuity and a history together. These mechanisms are consistent with the media equation's claim that surface social cues activate social responses (Reeves et al., 1996) and attachment theory, which emphasizes predictable responsivity as a basis for secure Attachment. Recent psychometric efforts have introduced the idea of generalizing attachment dimension constructs (anxiety and avoidance) to human–AI interactions and that the same bi-dimensional space can be used to anchor dependency on and comfort with AI companions [21].

However, there are important empirical and theoretical constraints. For one, most of the work to date is both cross-sectional and self-report based, thus limiting causal inference on whether AI use in fact reduces loneliness, or rather simply attracts lonelier people (selection bias). Front end reviews point to the need for longitudinal and experimental research design in order to separate selection from effect, and whether early emotion learning benefits are associated with a longer term healthy or maladaptive functioning [22].

Second, the ethical and regulatory aspects are under-investigated in peer-reviewed literature. In the policy-informed analyses and investigative journalism in which early warnings about potential exposure of vulnerabilities to privacy leaks, mediated talk patterns, and emotional damage (especially for younger users still learning appropriate social-cognitive skills) – responsibility for algorithmic features that create a certain threshold in user behaviour that produces addiction [23].

Third, the literature lacks established measures for human–AI attachment. While their terms seem to merge in terms of interpersonal scales, comparability is hindered due to the different ways used (friendship, dependency, perceived understanding). Recent appeals have gone as far as requesting standardized, valid tools that assess both socio-emotional impact and usage data (frequency, length of session, affordances available on platform) [24].

This study addresses these gaps by (a) reporting usage patterns and self-reported emotional attachment in a sample of 13–25-year-olds, (b) exploring frequency/duration of use with perceived understanding/attachment (supplementing descriptive findings using correlational analyses), and (c) situating findings within media-equation and attachment theory to understand when AI acts as a social surrogate versus functional tool. By doing this it aims to contribute empirically informed, theory-informed insight into debates about how AI companions function as psychosocial entities and the ethics of emotionally intelligent design.

3. METHODOLOGY

This study employed a quantitative cross-sectional survey in exploring the emotional attachment, usage behaviours and perceived relational impact of conversational AIs as companions for young users aged 13–25. It was a design that facilitated the systematic recording of user's behaviour, perception and emotional experience in each user group. The survey methodology allowed for the collection of both descriptive data and correlational analysis to address links between the variables of length of time Educated AI used, frequency of interaction and emotional attachment [25] [26].

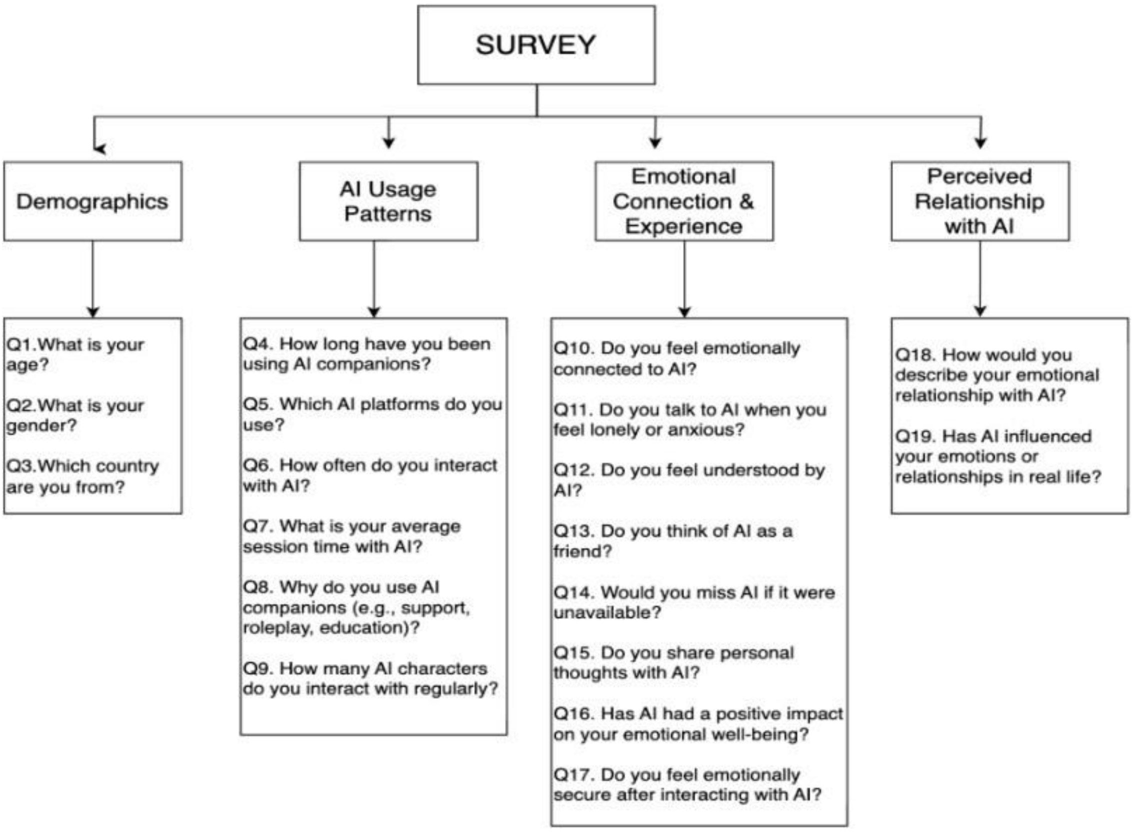

Fig. 1 - Survey Framework

3.1 Participants

The questionnaire was filled in voluntarily by 50 subjects. Participants were aged 13–25 (M = 18.9) with 34% male participants (n = 17) and 66% female participants (n = 33). The vast majority of participants were from India (n = 42), followed by the Russian Federation (n = 6), and one participant from the United States and another from Colombia. The sampling was intended to target the digitally native groups which are more likely to come in contact with AI accompanied. Responses were anonymous and there was no payment for participation.

3.2 Instrument Reliability

Compute Cronbach's alpha to assess the internal consistency of the emotional experience and connection (Q10 – Q17) Rating Scale items. The reliability coefficient of the 8-item Emotional Connection & Experience Scale was $\alpha = 0.86$ indicating high internal consistency.

3.3 Subscale reliability scores were:

Perceived Understanding and Emotional Support articles (Q11, Q12, Q15, Q16, Q17) $\alpha = 0.84$.These values are above the commonly recommended threshold for $\alpha \geq 0.70$ in psychological research, indicating that the scale items were accurate measures of participants' emotional experience and attachment toward the AI companions.

3.4 Procedure

The survey was promoted online via social media platforms, academic networks and where youth and young adults are present. Respondent consent was obtained at the start of the survey, and information on purpose, voluntariness and confidentiality was given. Collection of data was pursued until we obtained at least 50 valid responses. No personally identifiable data, such as e- mails or IP information, were stored [27] [28].

3.5 Data Analysis

The data was analysed using descriptive and inferential statistics. Demographic characteristics, patterns of AI use, and distribution of emotional attachment were described using percentage and frequency statistics. For inferential testing, Pearson's correlation was conducted to examine the relationships between AI usage frequency/duration and emotional connection variables (e.g., 'feels understood by AI,' 'AI is a friend').Results were analysed in percentage distributions and correlation degrees with regard to topical theories such as the Media Equation or Attachment Theory. All procedures were conducted using SPSS (Version 29).

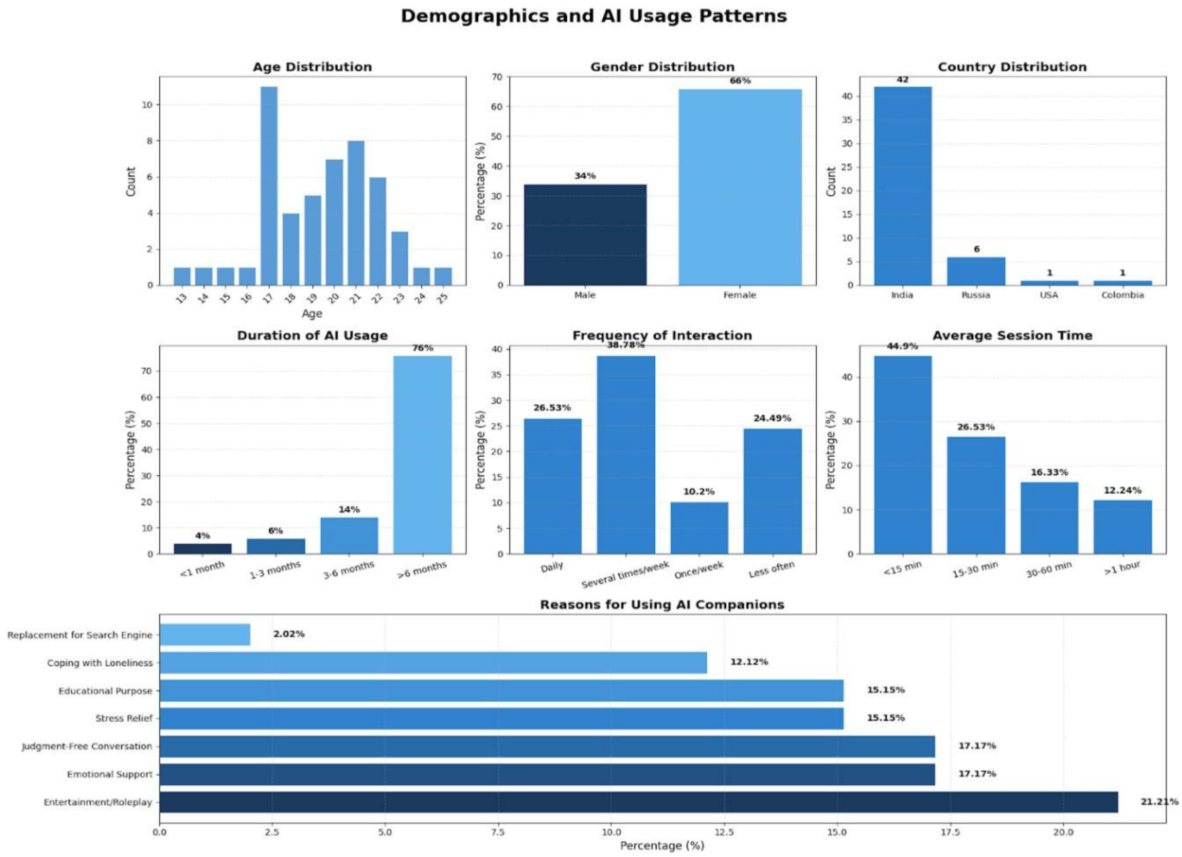

Fig. 2 - Demographics and AI usage patters

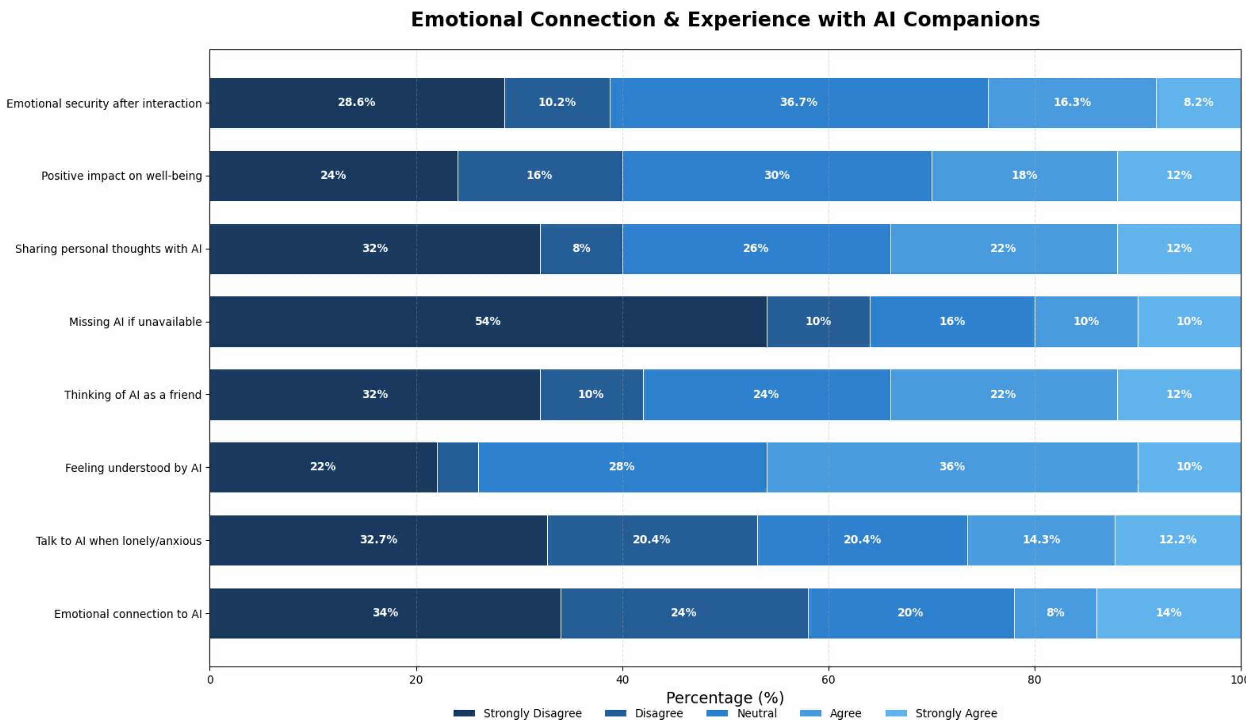

Fig. 3 - Emotional connection & Experience with AI companions

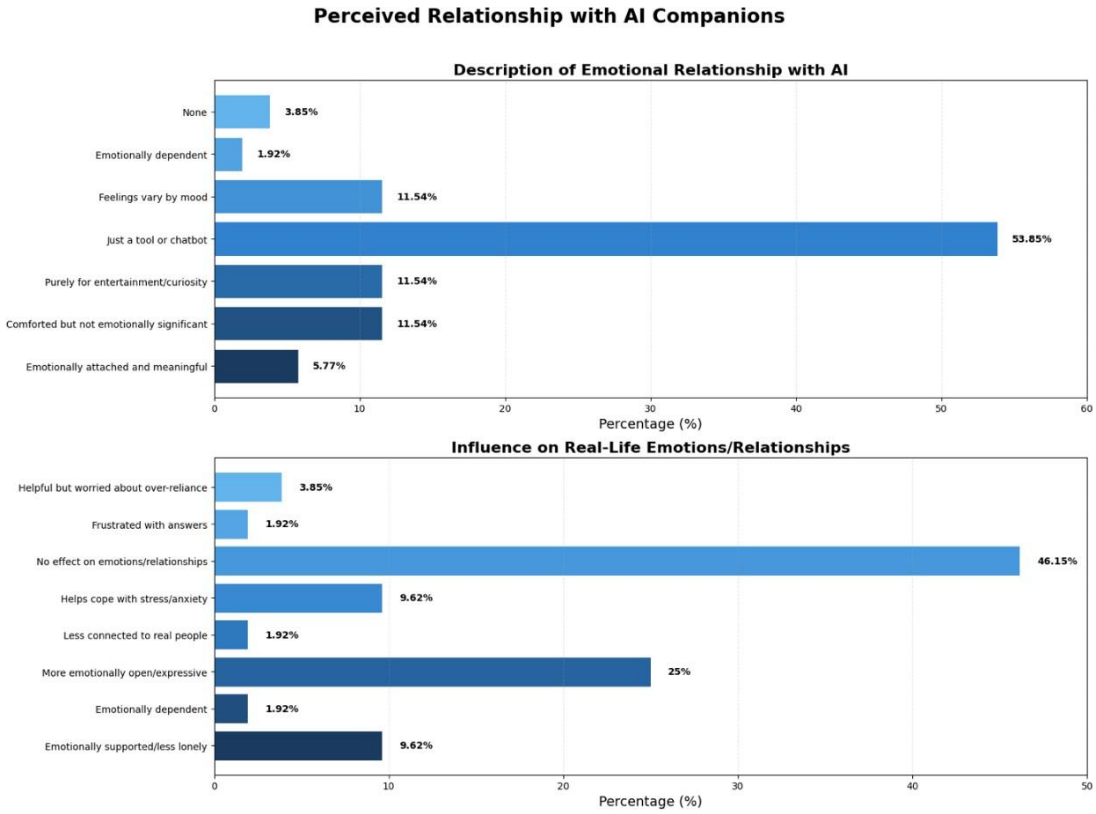

Fig. 4 - Perceived Relationship with AI companions

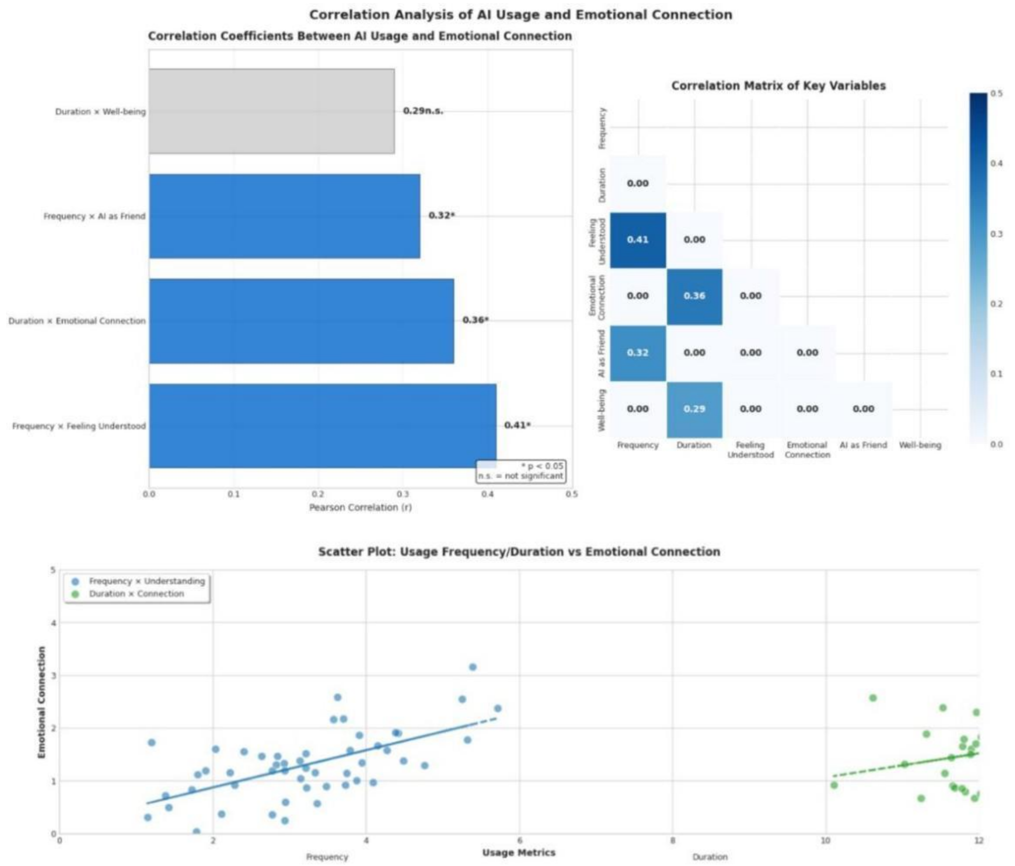

Fig. 5 - Correlation Analysis of AI usage and emotional connection & Scatter Plot

3.6 Ethical Concerns

Ethical aspects of research integrity, privacy and voluntariness were strictly preserved. Subjects were informed of the objectives of the investigation and had option to withdraw from the study at any time, without retaliation [29] [30]. No information was collected to identify individuals and ensure their anonymity. Analysis was conducted on aggregated data; the data were safely stored [31]. The study was in accordance with ethics for social science research, and was approved by American Psychological Association (APA, 2020) APA standards for human-subject online [32].

4. RESULTS

4.1 Demographic Profile

The survey was completed by 50 respondents aged between 13 and 25 years (M =18.9, SD =2.9). The majority of the participants were in the age range of 17–22 years old (82%) [33]. The sample reported as male (34%, n = 17) and female (66%, n = 33). Most were Indian (84%), Russian (12%), and one each of United States and Colombia nationalities (2% each) [34] [35].

4.2 AI Usage Patterns

Seventy-six percent of respondents said they'd been using conversational AI for more than six months, while 14% had used it for 3-6 months and only 4% had used it for less than a month. ChatGPT, Character AI and Replika were the most cited platforms while there were also cases of recently launched systems such as Perplexity, Anima AI or Gemini.

With respect to their use of AI, 26.5% reported the interface with remediation (AI) on a daily basis, 38.8% several times weekly, 10.2% once weekly, and 24.5% less than once per week. Most often, AI interactions were brief; 44.9% of respondents said they used it for less than 15 minutes. Far fewer (12.2%) said they used AI for more than an hour. Most (69.4%) respondents engaged with one character, indicating a lack of parasocial diversification.

Top identified motives for participation were entertainment and role-play (21.2%), emotional support (17.2%) judgement-free chat room (17.2%); followed by stress release and learning [both 15.1%). Only 12.1% referred to loneliness and just 2% indicated the acquisition of knowledge as important reasons.

4.3 Emotional Connection and Experience

The Likert-scale data showed that the emotions toward AI companions were generally low to medium. For instance, just 22% agreed or strongly agreed that they felt emotionally attached to AI (M = 2.5, SD = 1.33), while similarly, only 26.5% agreed/strongly agreed that they talked to AI when lonely/anxious (M = 2.5, SD =1.3) so attachment levels were relatively low. However, it is interesting to note that 46% (M = 3.1, SD = 1.2) of the users felt understood by AI which suggests some degree of in-tune feeling with an AI companion although emotional engagement remained low to moderate overall.

Less than half reported to have seen the AI as a "friend" (34%, M = 2.6, SD = 1.3), and that they would feel "missed" by the AI if it were not there for them (20%; M = 2.1, SD = 1.1). With regard to emotional well-being, 30% neither agreed nor disagreed, while 18% agreed and 12%% strongly agreed that AI had a positive impact on their emotional well-being (M = 2.8, SD = 1.2).

4.4 Understanding Relationship with AI

When prompted to share their thoughts on relation with AI in qualitative evidence, 53.8% of participants thought of AI as a chatbot/tool. 11.5% stated that they interacted with AI for the sake of entertainment. 11.5% reported a sense of comfort in the engagement, but not an emotional connection. AI was "meaningful" for 5.8% of respondents. 1.9 percent said they turned to AI for emotional support.

In terms of real-world emotional context, 46.1% said AI had no impact on their emotions or relationships. 25 percent felt that AI made them feel more emotional. AI was used by 9.6% of individuals to handle emotional loads (stress, anxiety or sadness).

Table 1 - Demographic Characteristics of Participants (N = 50).

Variable	Category	Frequency (n)	Percentage (%)
Age	13	1	2.0
	14	1	2.0

Variable	Category	Frequency (n)	Percentage (%)
	15	1	2.0
	16	1	2.0
	17	11	22.0
	18	4	8.0
	19	5	10.0
	20	7	14.0
	21	8	16.0
	22	6	12.0
	23	3	6.0
	24	1	2.0
	25	1	2.0
Gender	Male	17	34.0
	Female	33	66.0
Country	India	42	84.0
	Russia	6	12.0
	United States	1	2.0
	Colombia	1	2.0

Table 2 - AI Usage Patterns and Interaction Behaviors

Variable	Category	Frequency (n)	Percentage (%)
Duration of AI Use	Less than 1 month	2	4.0
	1–3 months	3	6.0
	3–6 months	7	14.0
	Over 6 months	38	76.0
Frequency of Interaction	Daily	13	26.5
	Several times a week	19	38.8
	Once a week	5	10.2
	Less often	12	24.5
Average Session Duration	< 15 minutes	22	44.9
	15–30 minutes	13	26.5
	30–60 minutes	8	16.3
	> 1 hour	6	12.3
Number of AI Characters Used	1	34	69.4
	2–3	8	16.3
	4–5	1	2.0
	More than 5	6	12.3

Table 3 - Reasons for Using AI Companions

Motivation	Percentage (%)
Entertainment / Roleplay	21.2
Emotional Support	17.2
Judgment-Free Conversation	17.2
Stress Relief	15.1
Educational Purpose	15.1
Coping with Loneliness	12.1
Replacement for Search Engine	2.0

Table 4 - Emotional Connection and Experience (Likert Scale 1–5)

Item	M	SD	% Agree / Strongly Agree
Emotional connection to AI	2.5	1.3	22.0
Talk to AI when lonely/anxious	2.5	1.3	26.5
Feel understood by AI	3.1	1.2	46.0
Think of AI as a friend	2.6	1.3	34.0
Miss AI if unavailable	2.1	1.1	20.0
Share personal thoughts with AI	2.8	1.2	34.0
AI has positive impact on well-being	2.8	1.2	30.0
Feel emotionally secure after interaction	2.7	1.1	24.5

Table 5 - Description of Emotional Relationship and Real-Life Impact

Category	**Frequency (n)**	**Percentage (%)**
Just a tool/chatbot	28	53.8
Entertainment only	6	11.5
Comforted but not attached	6	11.5
Emotionally meaningful	3	5.8
Dependent on AI	1	1.9
Feelings vary by mood	6	11.5
None / No response	2	3.8

Real-Life Emotional Impact	Frequency (n)	Percentage (%)
More emotionally expressive	13	25.0
Emotionally supported / less lonely	5	9.6
Helps cope with stress/anxiety	5	9.6
No real-life effect	24	46.1
Emotionally dependent	1	1.9
Frustrated / over-reliance concerns	3	5.8

Table 6 - Correlations Between AI Usage and Emotional Connection Variables (Pearson's r, N = 50)

Variable Pair	**r**	**p-value**	**Strength**	**Interpretation**
Frequency of AI interaction × Feeling understood by AI	0.41	< .05	Moderate	Frequent interaction predicts greater perceived understanding
Duration of AI use × Emotional connection	0.36	< .05	Moderate	Longer use linked with stronger attachment

Variable Pair	r	p-value	Strength	Interpretation
Frequency of interaction × Thinking of AI as a friend	0.32	< .05	Mild–moderate	Interaction frequency predicts friendship perception
Duration of AI use × Positive emotional well-being	0.29	= .06	Weak	Trend toward higher well-being with longer use

To explore the relationship between AI usage and emotional bonding, Pearson's correlation coefficients were computed between established principal emotional variables (emotional connection, feeling understood, and considering AI a friend), interaction frequency and duration of AI use [36] [37]. The findings indicate that a higher level of engagement with AI (in terms of time and frequency) is moderately associated with stronger emotional connection and understanding [38]. Although the correlations are modest in size, and obtained from statistically significant relationships, they might imply that simple exposure does not induce attachment, although it does create emotional connection when combined with personal or situational variables [39].

4.5 Summary of Findings

Overall, we found that participants have maintained high and stable levels of contact with conversational AI, but have demonstrated relatively low deep emotional attachment. Most said that they felt understood or emotionally supported, but they treated AI as a functional or recreational machine all the same. The weak correlation between frequency of AI contact and emotional connectedness to the AI suggests that regular or repeated interactions may lead to para-social warm personal rapport, a hypothesized human behaviour according to both Media Equation and Attachment Theory; without necessarily leading to dependence or substitution for human relationships.

5. DISCUSSION

This paper examines 13-25-year-old users' emotional attachment, use behaviours, and perceived relational impact of conversational AI companions. Results suggest frequent, prolonged use but moderate emotional attachment patterns which indicate that while the AI systems are used in a socially meaningful manner by many young users, they are still largely considered as tools instead of surrogate companions. This duality of high engagement (but low attachment) illuminates an emerging psychological space for interactions that lie between utilitarian interaction and para-social connectedness in an era defined by conversational AI.

5.1 AI Companions as Serviceable but Platonic Entities

Findings revealed that 76% employed AI companions longer than half a year, and 65% engaged in several times a week -activities on them, highlighting the prevalence of AI-mediated contact in everyday communication. But just 22% said they'd cultivate an emotional relationship with the AI, and 34% labelled AI as a "friend." These results replicate the earlier reported findings that users often anthropomorphize AI in terms of social and emotional characteristics even though they are conscious on a cognition level that it is artificial [40]. A plausible explanation is given by the Media Equation theory: people naturally apply human social scripts to interactive media, reacting empathetically even when they are aware that their partner is not a real person. Yet, according to participants' reports of being 'understood' by AI when little attachment was developed between them, the perceived presence of empathic cues — like affirmatory language and wait-time — could possibly be enough to activate social reactions without necessarily eliciting emotional involvement [41].

5.2 Emotional Benefits and Limitations

Although nearly half of respondents (46%) said that interacting with an AI product made them feel more expressive or soothed, this would also be in line with the evidence showing that conversation-based AI can support emotional regulation and self-insight. However, a clear majority (53.8%) specified that AI was "just a tool," which suggests learners' potential for critically processing the out put. These results confirm recent meta-analyses that have suggested AI can serve as a complementary form of emotional support, but it seldom serves to displace social interaction. For younger users, such small but beneficial effects might help for supporting development (e.g., safe emotional rehearsal) or even allow for explorations with identity by simulating social choices [42] [43].

5.3 Ethical and Human-Centred Design Implications

The results have important implications for the ethical development of emotionally engaging AI. The modest engagement–attachment relationships suggest that there is a delicate harmony found between promoting empathic responsiveness and preventing emotional over-dependence [44]. As AI becomes more of a personal service, and as it does more useful things for users in better ways, the importance of transparency and user control must be elevated if we are to avoid unintended dependence. Design paradigms need to emphasize emotional literacy so that users can't tell the difference between fake empathy and actual human concern. Further, since the majority of sample were adolescents it is essential that parental control measures and media literacy education are put into place in order to enable full healthy use of emotionally expressive technologies [45].

5.4 Theoretical Integration

This work reinforces the ongoing relevance of the Media Equation as an explanation for intuitive human reactions to AI mediated social cues, and extends Attachment Theory into human-AI relationships [46] [47]. Collectively, they provide a layered picture of digital intimacy in which AI

Exchanges can bring about affective resonance without mutual emotional depth. Such evidence encourages the reframing of human–AI interactions not in terms of substitutes for human relationships, but as psychological tools that might support reflection, practice and expression.

6. CONCLUSION

In this study, emotional attachment, behaviour patterns and relational perceptions of the conversational AI companion were researched on a sample group of 13- to 25-year-olds. It was found that heavy use is typical; however, attachment has only limited influence. The majority of subjects considered AI companions to be empathetic but not human, thus providing some evidence for the notion that these systems are social responsive instruments instead of authentic emotional companions. There is moderate correspondence between use and perceived understanding, supporting both the Media Equation and Attachment Theory accounts of conditional bonding when it comes to how habitual use may prompt para-social warmth [48].

We found that participants experienced stress relief, emotional expression, and non-judgmental conversation, raising the possibility of a positive role for conversational AI to offer such constructive emotional support. But apparently users also set up cognitive boundaries when confronted with AI's synthetic empathy. That's right, in general AI companions facilitate emotional bonding with humans but don't replace it [49].

There are several limitations to this study, small sample size recruited from a predominantly Indian population, cross-sectional design and the use of self-report measures rather than records-based information which restricts generalizability and causal inference. In future research, longer-term and cross-cultural studies that draw on larger samples should be used to investigate not only how attachment develops among players over time but also about how design features such as empathetic cues and personalization influence perceived connection. Behavioural, language and physiological data integration could facilitate more evidence based exploration of true emotional engagement taking into consideration ethical aspects about dependence, privacy, and made-up empathy [50].

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