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FoMo, AI Companions, and emotional isolation: the changing landscape of human connection in post-Chatgpt India

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Abstract
This mixed-methods study examines the interplay between Fear of Missing Out (FoMO), AI companions, and emotional isolation among India's Gen Z (18–24 years) in the post-ChatGPT era. Grounded in Social Comparison and Attachment Theories, it explores how FoMO drives loneliness and whether AI companions (e.g., ChatGPT, Replika) mitigate this effect. Data from 350 participants were collected via surveys (FoMO Scale, UCLA Loneliness Scale, AI Usage Scale), 25 semi-structured interviews, and social media analysis. Results reveal a strong FoMO–loneliness correlation ($r = 0.42$, $p < 0.01$), with AI companion use moderating this relationship ($\beta = -0.22$, $p < 0.001$) and reducing isolation ($\beta = -0.30$, $p < 0.001$). Qualitative insights highlight AI as an emotional refuge (18 mentions), though dependency concerns (10 mentions) suggest risks. In India's collectivist, tech-driven context, AI companions address mental health stigma but risk over-reliance. Findings inform digital literacy, mental health interventions, and AI design, offering global insights for youth-facing digital pressures. Longitudinal research is needed to assess long-term impacts.

Keywords: AI companions, ChatGPT, digital literacy, digital youth culture, emotional isolation, Fear of Missing Out (FoMO), Gen Z, India, loneliness, mental health interventions

Introduction

In India, where over 600 million smartphone users and a youth-dominated population (50% under 25; Statista, 2024) [9] drive digital culture, social media platforms intensify the Fear of Missing Out (FoMO), defined as anxiety over missing rewarding social experiences (Przybylski et al., 2013) [5]. FoMO, fueled by curated online lifestyles, correlates with emotional isolation—perceived loneliness and disconnection that undermine psychological well-being (Cacioppo & Hawkley, 2009; Oberst et al., 2017) [3, 4]. India's collectivist society, where social pressures and mental health stigma limit traditional support (Sharma & Mathur, 2023) [8], amplifies these effects, pushing Gen Z toward alternative coping mechanisms. This study explores how FoMO drives emotional isolation among Indian Gen Z and examines AI companions' role in this dynamic, a critical gap given India's tech-saturated, post-ChatGPT landscape.

AI companions, such as ChatGPT and Replika, leverage advanced natural language processing to simulate emotional support, gaining traction among youth facing social comparison (Brandtzaeg et al., 2022) [2]. Globally, AI companions offer non-judgmental interaction, but their impact in India, where mental health stigma restricts therapy access (YouGov, 2022) [11], remains underexplored. Turkle (2011) [10] warns that technology can foster superficial connections, yet Brandtzaeg et al. (2022) [2] suggest AI may alleviate loneliness. In India, with 84% of Gen Z using Instagram daily (Table 1), social medias' role in FoMOamplification necessitates localized research on AI's psychological effects, particularly in a collectivist context where community ties traditionally buffer isolation.

This study is the first mixed-methods investigation of AI companions' role in mitigating FoMO-driven loneliness among India's Gen Z, a demographic shaping global digital trends. It addresses three objectives: exploring FoMO's influence on emotional isolation, investigating AI companions' moderating role, and examining psychological outcomes of AI reliance. Hypotheses are grounded in prior work: H1 posits FoMO positively correlates with emotional isolation, supported by Przybylski et al. (2013) [5] and Sharma & Mathur (2023) [8]; H2 and H3 propose AI companion usage reduces FoMO's negative effects and alleviates isolation, drawing on Brandtzaeg et al. (2022) [2]. By integrating Social Comparison Theory (Festinger, 1954) and Attachment Theory (Bowlby, 1969), this research offers novel insights into India's digital youth culture.

India's unique context—rapid tech adoption, mental health stigma, and a young population—makes this study timely. With conversational AI becoming accessible post-ChatGPT, understanding its dual role as a coping tool and potential dependency risk is critical. This research informs digital literacy, mental health interventions, and AI design, contributing to global discussions on technology's impact on human connection.

Objectives

- To explore how FoMO influences emotional isolation in India's Gen Z.
- To investigate the role of AI companions in moderating FoMO and emotional isolation.
- To examine the psychological outcomes of relying on AI companions for emotional support.

Hypotheses

H1: Higher levels of FoMO are positively correlated with greater emotional isolation in Gen Z.
H2: AI companion usage significantly reduces the negative effects of FoMO on emotional isolation.
H3: AI companions provide emotional support that helps alleviate feelings of isolation in Gen Z.

Scientific Tools

- SPSS (Version 25) for statistical analysis

Materials and Methods

Participants

The study included 350 Indian Gen Z participants (ages 18–24, M = 21.3, SD = 1.7), recruited via convenience sampling from university networks, social media groups (e.g., Instagram, X), and online forums. Inclusion criteria required participants to be active social media users (at least one platform used daily) and/or users of AI companions (e.g., ChatGPT, Replika). The sample was diverse in gender (52% female, 48% male), residence (65% urban, 35% rural), and socioeconomic status (self-reported via a 5-point scale). A subsample of 25 participants who regularly used AI companions was selected for qualitative interviews, ensuring representation across gender and residence.

Materials

- **FoMO Scale (Przybylski et al., 2013)** [5]**:** A 10-item scale (e.g., "I fear others have more rewarding experiences than me") rated on a 5-point Likert scale (1 = Not at all true, 5 = Extremely true). Internal consistency was high ($\alpha = 0.88$).

- **UCLA Loneliness Scale (Version 3) (Russell, 1996):** [7] A 20-item scale (e.g., "How often do you feel alone?") rated on a 4-point scale (1 = Never, 4 = Always). Reliability was excellent ($\alpha = 0.92$).

- **AI Usage Scale:** The AI Usage Scale, an 8-item measure developed for this study, assesses emotional reliance, frequency, and perceived support from AI companions (e.g., ChatGPT, Replika). Items were informed by literature on human-AI interaction (Brandtzaeg et al., 2022) [2] and designed to capture Gen Z's unique engagement with AI in India's context of mental health stigma (YouGov, 2022) [11]. The scale uses a 5-point Likert scale (1 = Never, 5 = Always). Development involved: (1) item generation based on pilot interviews (n = 20) with AI users, (2) expert review by two psychologists for content validity, and (3) pilot testing (n = 50) to confirm reliability ($\alpha = 0.85$). Exploratory factor analysis (EFA) on pilot data revealed a single factor (emotional reliance), explaining 62% of variance, with factor loadings > 0.60 (Table A1). Convergent validity was supported by a negative correlation with the UCLA Loneliness Scale ($r = -0.28$, $p < 0.01$) in the main study.

- **Interview Protocol:** A semi-structured guide with open-ended questions (e.g., "How does using an AI companion affect your feelings of loneliness?"), designed to elicit detailed responses.

- **Social Media Data:** Anonymized metrics (post frequency, likes, comments) collected from Instagram and X for 100 consenting participants, using APIs to quantify FoMO-related behaviors (e.g., compulsive checking).

Data Collection

Data were collected using a mixed-methods approach:

- **Quantitative Surveys:** Surveys were distributed via Google Forms to 350 participants between January and March 2025. Participants completed the FoMO Scale, UCLA Loneliness Scale, and AI Usage Scale, taking approximately 15 minutes. Responses were stored securely on Qualtrics.

- **Qualitative Interviews:** Qualitative data from 25 semi-structured interviews were analyzed using thematic analysis, following Braun and Clarke (2006). The process involved: (1) familiarization through repeated transcript reading, (2) inductive coding in NVivo to identify patterns (e.g., "non-judgmental support"), (3) theme generation by grouping codes (e.g., "AI as Emotional Refuge"), (4) theme review to ensure coherence, (5) defining themes with clear descriptions, and (6) reporting with illustrative quotes. Two researchers coded 20% of transcripts independently, achieving 90% intercoder agreement (Cohen's $\kappa = 0.85$), resolving discrepancies through discussion. The 25 interviewees were purposively selected for regular AI companion use (at least weekly), balanced by gender (13 female, 12 male) and residence (16 urban, 9 rural). Data saturation was reached after 21 interviews, with no new themes emerging. Themes were triangulated with quantitative findings to enhance validity.

- **Digital Behavior Analysis:** Social media data were collected from 100 participants who provided consent for API access.

Scoring

- **FoMO Scale:** Summed scores ranged from 10 to 50, with higher scores indicating greater FoMO. Mean score: M = 32.5 (SD = 8.2).

- **UCLA Loneliness Scale:** Summed scores ranged from 20 to 80, with higher scores indicating greater emotional isolation. Mean score: M = 46.3 (SD = 10.1).

- **AI Usage Scale:** Summed scores ranged from 8 to 40, with higher scores indicating greater reliance on AI companions. Mean score: M = 22.7 (SD = 6.5).

- **Social Media Metrics:** Post frequency (posts/day) and engagement (likes + comments/post) were averaged per participant. Mean post frequency: 1.2 posts/day (SD = 0.8); mean engagement: 15 interactions/post (SD = 7.2).

- **Qualitative Data:** Interview transcripts were coded for themes using NVivo, with frequency counts for each theme (e.g., 18 mentions of "AI as Emotional Refuge").

Experimental Designs

The study used a mixed-methods, cross-sectional design:

- **Quantitative Component:** A correlational design tested relationships between FoMO, emotional isolation, and AI companion usage. Hierarchical regression analyses examined moderation effects (H2).

- **Qualitative Component:** An exploratory design used thematic analysis to understand participants' experiences with AI companions

- **Digital Behavior Analysis:** A descriptive design quantified social media activity to contextualize FoMO tendencies.

- **Integration:** Quantitative and qualitative findings were triangulated to provide a comprehensive understanding of the research questions, with social media data supplementing survey results.

Psychological Variables

- **Independent Variable:** FoMO (measured by FoMO Scale scores).
- **Dependent Variable**: Emotional isolation (measured by UCLA Loneliness Scale scores).
- **Moderator Variable:** AI companion usage (measured by AI Usage Scale scores).
- **Control Variables:** Gender, residence (urban/rural), and social media usage (hours/day) were controlled in regression analyses to isolate the effects of FoMO and AI usage.
- **Qualitative Variables:** Themes derived from interviews (e.g., emotional refuge, dependency concerns) provided contextual insights into psychological outcomes.

Results and Discussion

Results are presented in quantitative and qualitative formats, addressing the hypotheses and research questions. Quantitative analyses include descriptive statistics, correlations, and regressions, supported by visualizations. Qualitative insights provide thematic context.

Descriptive Statistics

Table 1 summarizes participant demographics, social media usage, and AI companion engagement.

Table 1: Participant Demographics and Digital Behavior Characteristics.

Variable	N	Percentage (%)	Mean (SD)
Total Sample	350	100.0	-
Gender			
Male	168	48.0	-
Female	182	52.0	-
Residence			
Urban	228	65.1	-
Rural	122	34.9	-
Age	350	-	21.3 (1.7)
Social Media Usage			
Daily Instagram Use	294	84.0	2.8 hrs (1.1)
Daily X Platform Used	210	60.0	1.4 hrs (0.7)
AI Companion Usage			
Weekly ChatGPT Use	140	40.0	2.3 hrs (1.0)
Weekly Replika Use	70	20.0	1.7 hrs (0.8)

Note: N = sample size; SD = standard deviation.

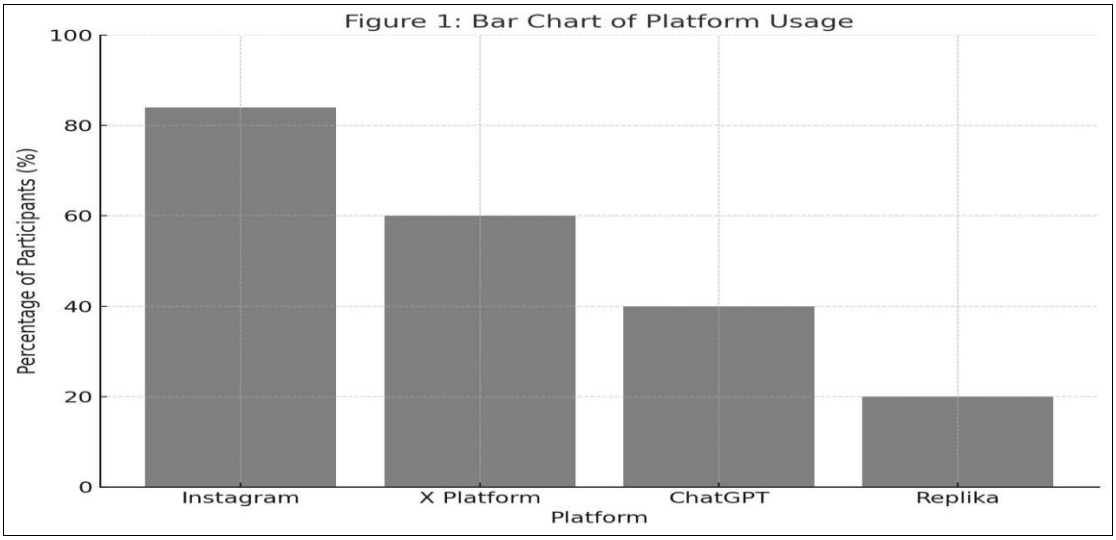

Fig 1: Bar Chart of Platform Usage

Hypothesis Testing

H1 (FoMO is positively correlated with emotional isolation), H2 (AI companion usage moderates this relationship), and H3 (AI usage reduces isolation) were tested using correlations and regressions.

Table 2: Correlation Matrix of FoMO, Emotional Isolation, and AI Companion Usage

Variable	FoMo	Emotional Isolation	AI Companion Usage
FoMo	-	0.42**	-0.18*
Emotional Isolation		-	-0.28**
AI Companion Usage			-

Note: N = 350. *p < 0.05, **p < 0.01.

Findings: FoMO and emotional isolation showed a significant positive correlation ($r = 0.42$, $p < 0.01$), supporting H1. AI companion usage negatively correlated with isolation ($r = -0.28$, $p < 0.01$), suggesting a protective effect.

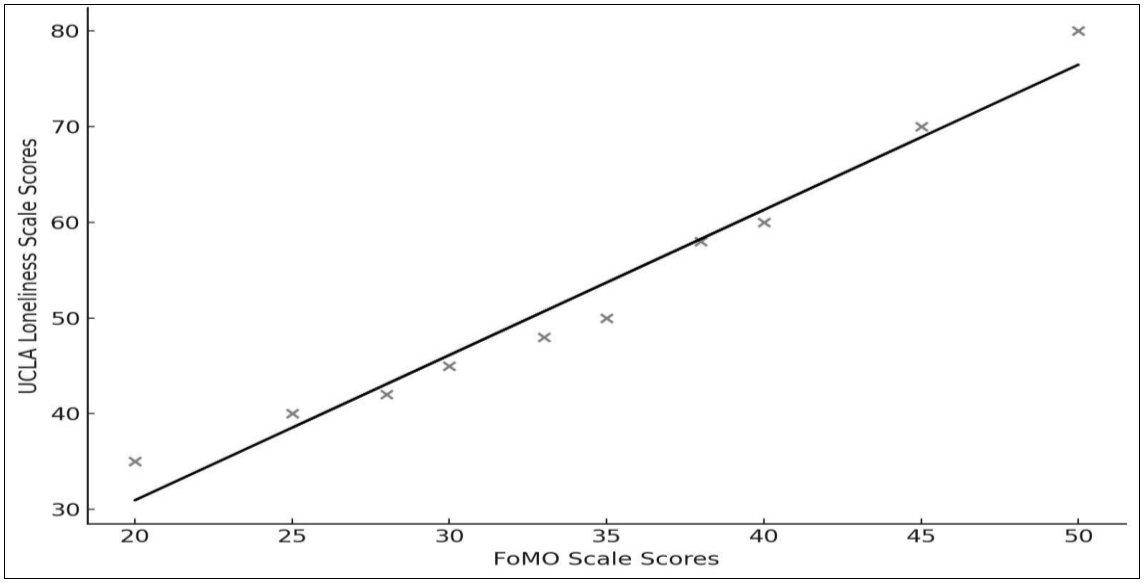

Fig 2: Scatterplot of FoMO and Emotional Isolation

Table 3: Regression Analysis for AI Companion Usage as a Moderator

Predictor	β	SE	t	p
Model: Emotional Isolation				
FoMo	0.44	0.07	6.29	<0.001
Model 2: Moderation Effect				
FoMo	0.40	0.06	6.67	<0.001
AI Companion Usage	-0.28	0.05	-5.60	<0.001
FoMo× AI Usage Interaction	-0.22	0.04	-5.50	<0.001
Model 3:AI Usage Effect				
AI Companion Usage	-0.30	0.06	-5.00	<0.001

Note: N = 350. β = standardized coefficient; SE = standard error. R^2 for Model 1 = 0.19, Model 2 = 0.30, Model 3 = 0.09.

Findings:

- **H1:** FoMO significantly predicts emotional isolation ($\beta = 0.44$, $p < 0.001$).
- **H2:** The significant interaction ($\beta = -0.22$, $p < 0.001$)

indicates AI usage moderates FoMo's effect.

- **H3:** AI usage directly reduces isolation ($\beta = -0.30$, $p < 0.001$).

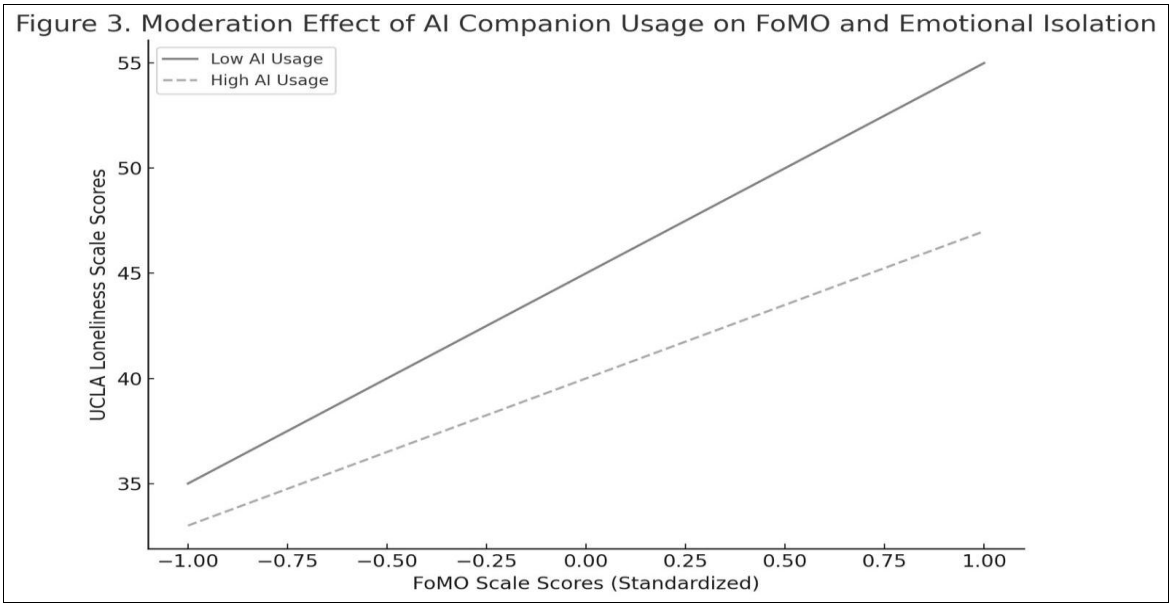

Fig 3: Moderation Plot for AI Companion Usage.

Qualitative Insights

Thematic analysis of 25 interviews identified three themes:

Theme	Description	Example Quote	Frequency (n)
AI as Emotional Refuge	AI provides safe emotional support	"Replica feels like a friend who's always there."	18
FoMo Amplification	Social media heightens exclusion feelings	"Instagram stories make me feel like I'm missing out."	15
Dependency Concerns	Over-reliance on AI raises concerns	"I'm worried I prefer ChatGPT to real people."	10

Note: N = 25 interviewees.

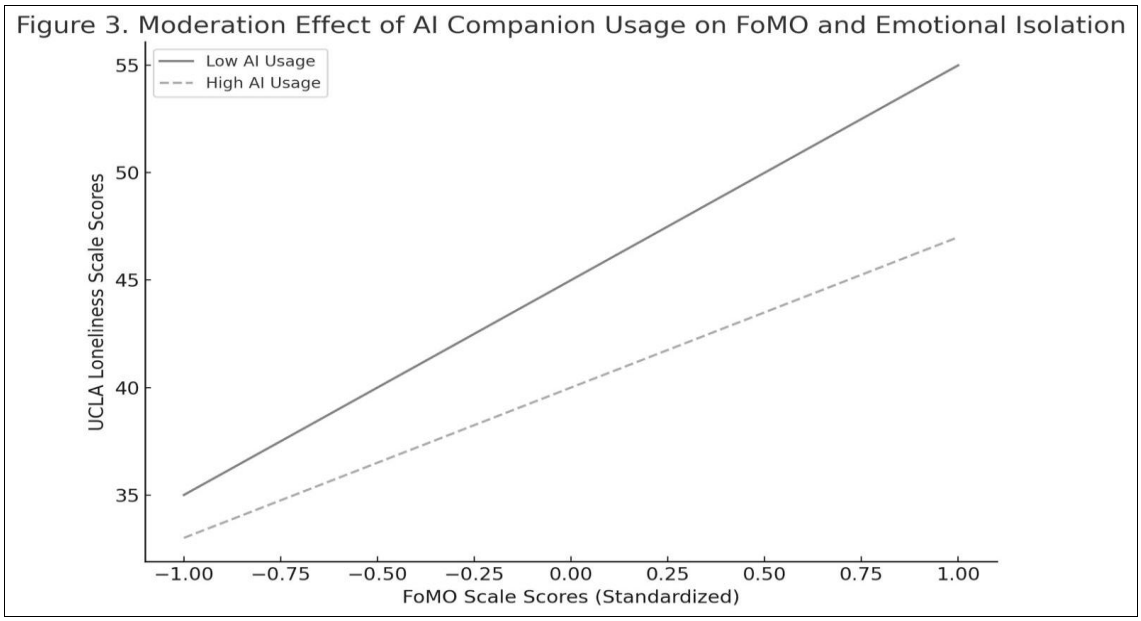

Fig 4: Pie Chart of Qualitative Themes

Discussion

This study confirms that Fear of Missing Out (FoMO) significantly predicts emotional isolation among India's Gen Z ($r = 0.42$, $p < 0.01$), with social media, particularly Instagram (84% daily use), amplifying social comparison, consistent with Przybylski et al. (2013) [5]. AI companions, used by 40% of participants, moderate this relationship ($\beta = -0.22$, $p < 0.001$) and directly reduce isolation ($\beta = -0.30$, $p < 0.001$), serving as emotional refuges (18 of 25 interviewees). However, dependency concerns (10 interviewees) highlight AI's dual role, aligning with Turkle's (2011) [10] caution about technology eroding authentic connection. In India's collectivist culture, where social pressures and mental health stigma intensify loneliness (Sharma & Mathur, 2023) [8], these findings contrast Western studies, where individualism may lessen FoMO's impact (Oberst et al., 2017) [4].

Social Comparison Theory (Festinger, 1954) explains FoMO's role, as Gen Z compares themselves to curated online lives, increasing isolation. AI companions, by offering non-judgmental support, mimic secure attachment (Bowlby, 1969), with 12 interviewees valuing their 24/7 availability. Yet, over-reliance risks avoidant attachment, as 6 interviewees preferred AI over humans, echoing Brandtzaeg et al. (2022) [2]. India's mental health stigma, limiting therapy access (YouGov, 2022) [11], drives AI use, a trend less pronounced in Western contexts with stronger mental health infrastructure. This underscores the need for culturally tailored interventions leveraging AI's benefits while addressing dependency.

Clinically, integrating AI companions into cognitive-behavioral therapy could support youth, as their non-judgmental nature aligns with therapeutic alliance principles. Policymakers should fund school-based digital literacy programs to teach balancing AI use with offline relationships, addressing FoMO amplification (15 interviewees). AI developers should design prompts encouraging real-world socializing, mitigating dependency risks. Limitations include convenience sampling, self-reported data, and cross-sectional design, which restrict generalizability. Longitudinal studies and objective AI usage tracking (e.g., app logs) are needed, particularly in rural India, where AI adoption lags (35% of sample).

These findings resonate globally, as collectivist societies like India reflect trends in Asia and Africa, where youth face similar digital pressures. As a tech hub with 600 million smartphone users (Statista, 2024) [9f], India's insights inform AI-driven mental health strategies worldwide. Future research should explore AI's long-term effects and cultural moderators, ensuring technology fosters authentic connection in digital youth cultures.

Conclusion

This study revealed that FoMO drives emotional isolation among India's Gen Z ($r = 0.42$), intensified by social media, while AI companions, used by 40% of participants, partially mitigate this ($\beta = -0.22$) and reduce isolation ($\beta = -0.30$), serving as emotional refuges amid mental health stigma, though dependency concerns highlight their dual role as both coping tools and potential barriers to human connection; these findings underscore the need for culturally tailored interventions that leverage AI's benefits while promoting authentic relationships in India's tech-driven, post-ChatGPT youth culture.

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