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Psychosocial Implications of Emotional Dependence on Artificial Intelligence among Adolescents in Awka, Anambra State

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ABSTRACT

The rapid integration of artificial intelligence (AI) into adolescent life has created new pathways for emotional interaction, raising concerns about psychosocial consequences. This study investigated the psychosocial implications of adolescents' emotional dependence on AI in Awka, Anambra State, Nigeria. The objectives were to examine the extent of adolescents' emotional dependence on AI, the psychosocial implications associated with adolescents' emotional dependence on AI and the factors responsible for adolescents' emotional dependence on AI. A descriptive survey design was employed. The study adopted a multi-stage sampling technique involving purposive selection of five holiday camps from a population of 1,658 adolescents (12-19 years), followed by total enumeration (census) of eligible participants within the selected camps. Based on the study's focus, only adolescents who owned or had access to smartphones were included, resulting in a final sample of 332 respondents. Data were collected using a validated instrument (PIEDAQ), with a reliability coefficient of 0.82. Descriptive statistics (frequency, percentage, mean and standard deviation) addressed the research questions. Findings revealed moderate emotional dependence on AI, with ChatGPT, Snapchat My AI and Character.AI reported as most frequently used. Reported psychosocial implications included reduced peer interaction, increased loneliness, diminished trust and academic disruption. The study concludes that while AI offers immediate comfort, overreliance threatens adolescents' psychosocial well-being, necessitating parental engagement, school counseling and responsible AI use policies.

Keywords: Adolescents, Artificial Intelligence, Emotional Dependence, Psychosocial Implications

INTRODUCTION

Adolescence is a critical stage of human development characterized by rapid physical, cognitive and psychosocial changes. During this stage, individuals form their identity, develop autonomy and seek meaningful interpersonal relationships (Steinberg, 2014). Erikson's (1968) psychosocial theory further emphasizes that adolescent identity formation requires meaningful human interaction. Emotional support is central to these developmental tasks, shaping adolescents' self-concept, coping ability and overall mental health. Traditionally, adolescents rely on parents, peers, teachers and community figures for such support (Wentzel, 2017). However, with the proliferation of digital technologies, the avenues through which young people seek emotional engagement are undergoing significant transformation.

Artificial Intelligence (AI), especially in the form of conversational agents, chatbots and virtual companions, has emerged as a novel source of emotional connection (Nass & Moon, 2000; Gonsalves, Roemmele & Gordon, 2023). Artificial Intelligence (AI) refers to the capability of machines or computer systems to perform tasks that typically require human intelligence, such as learning, reasoning, problem-solving, perception and language understanding. AI further refers to interactive computer-based systems designed to simulate human conversation and provide responses that mimic emotional understanding and support (Russell & Norvig, 2021). These AI-powered systems are often perceived as non-judgmental, always available and capable of offering anonymity, qualities that appeal to adolescents experiencing emotional vulnerability (Larsen, 2022).

Globally, teenagers are increasingly engaging with AI systems such as Replika, Woebot, and ChatGPT for companionship, guidance and emotional reassurance (Shum, He & Li, 2018). Other common AI platforms include Deepseek, Snapchat My AI, Character.AI, Gemini and Meta AI. The researchers, as teen coaches and higher institution tutors, have also observed a growing number of adolescents who consider conversations with AI companions more satisfying than those with human friends, with some preferring AI for discussing personal and sensitive matters. Invariably, some adolescents emotionally depend on artificial intelligence. Emotional dependence refers to an excessive psychological reliance on others for emotional support, validation and a sense of self-worth, often accompanied by fear of abandonment and difficulty functioning independently (Bornstein, 1992; American Psychiatric Association, 2013).

While these technologies offer benefits such as accessibility and a perception of empathy, scholars have expressed concern about the psychosocial implications of overdependence on artificial systems (Howard & Borenstein, 2018). Psychosocial implications refer to the combined influence of psychological factors (such as emotions, thoughts and mental processes) and social factors (such as relationships, social roles and environmental context) on an individual's overall functioning and well-being (Bolton & Gillett, 2019). As it relates to the present study, it is the emotional, cognitive and social consequences that arise from adolescents' interactions with artificial intelligence, particularly as these interactions influence their emotional well-being, interpersonal relationships and social adjustment.

Turkle (2017) supported by Vincent and Dafoe, (2021) stressed that overreliance on AI for emotional support has been associated with parasocial attachment patterns hence, may disrupt normal psychosocial development by reducing face-to-face social interaction, limiting opportunities for emotional regulation, creating unrealistic expectations of human relationships and lower psychological well-being particularly among adolescents facing loneliness, anxiety or low emotional intelligence. Moreover, AI lacks genuine empathy and cultural nuance, which could distort adolescents' understanding of authentic interpersonal relationships (Vincent & Dafoe, 2021). Although research on AI's role in mental health and education is expanding, there remains a paucity of empirical evidence focusing on adolescent population, especially within African contexts (Odeyemi & Adebayo, 2021).

In Nigeria, and specifically in Awka, Anambra State, adolescents are increasingly exposed to smartphones, social media and AI-powered platforms. Yet, there is limited empirical investigation into how emotional dependence on AI influences their psychosocial well-being. This is particularly concerning in African societies, where communal living and interpersonal bonds are deeply valued (Nwoye, 2015). The possibility that adolescents might substitute culturally significant human support systems with artificial companions presents a unique psychosocial challenge that requires scholarly attention. Yet, little is known about the extent to which Nigerian adolescents depend on AI for emotional needs, the psychosocial implications of such dependence, or the contextual factors shaping this phenomenon.

This knowledge gap presents a pressing challenge. Without localized evidence, educators, parents, mental health practitioners and policymakers remain ill-equipped to understand or mitigate the risks of adolescent dependence on AI for emotional support. Against this backdrop, the present study seeks to investigate the psychosocial implications of emotional dependence on artificial intelligence among adolescents in Awka, Anambra State. By noting common AI platforms adolescents most often use for chatting, examining the extent of adolescents' emotional dependence on AI, identifying the psychosocial implications associated with adolescents' emotional dependence on AI and determining the factors responsible for adolescents' emotional dependence on AI, the study aims to provide evidence-based insights to guide interventions and inform responsible technology use among young people.

The following research questions guided the study:

1. What AI platforms do adolescents most often use for chatting?
2. To what extent do adolescents in Awka depend on AI for emotional support?
3. What psychosocial implications are associated with adolescents' emotional dependence on AI?
4. What are the factors responsible for adolescents' emotional dependence on AI?

METHOD

The study adopted a descriptive survey research design to determine the psychosocial implications of emotional dependence on artificial intelligence among adolescents. The study was conducted in Awka Metropolis, Anambra State, Nigeria, an urban hub with high adolescent exposure to smartphones, social media and AI-enabled applications. The population of this study comprised 1,658 adolescents aged 12–19 years

who participated in five (5) holiday (summer) camps within Awka Metropolis during the study period. Adolescence, defined here as individuals within the age range of 12–19 years, was selected due to its critical developmental significance and heightened susceptibility to psychosocial influences. To achieve the objectives of the study, a multi-stage sampling technique was adopted. This involves the selection of participants in stages, often by first selecting groups or clusters and then selecting individuals within those groups (Creswell & Creswell, 2019). In the study, a sequential procedure was utilized in selecting both the study sites and the participants.

At the first stage, purposive sampling was employed to select the study sites. Owing to the absence of a comprehensive sampling frame of adolescents within Awka Metropolis at the time of this study (holiday period), the researcher utilized holiday (summer) camps as naturally occurring clusters of adolescents. Consequently, the five (5) holiday camps that were active and accessible during the study period were selected based on clearly defined criteria (namely, the presence of adolescents within the target age range of 12-19years, accessibility of the camps and their suitability for data collection within the study timeframe. This ensured that the selection was criterion-based and aligned with the objectives of the study, rather than arbitrary.

At the second stage, a total enumeration (census) approach was adopted within the selected camps. This involves studying all elements of the accessible population that meet specified criteria rather than selecting a subset (Australian Bureau of Statistics, 2023). In line with the focus of the study on emotional dependence on artificial intelligence, ownership of or access to a smartphone was established as a key inclusion criterion. To operationalize this, a brief screening process was conducted in each camp, during which adolescents indicated whether they personally owned a smartphone or had regular access to one through parents, siblings or guardians. Based on this screening process, a total of 332 adolescents met the inclusion criteria and were included in the study. The adoption of total enumeration was justified by the relatively manageable number of eligible participants. This approach ensured that all qualified respondents were captured, thereby minimizing sampling error, enhancing representativeness within the study context and strengthening the validity of the findings.

The instrument for data collection was a Researcher-Designed Questionnaire which provided detailed description of participants' experiences. Participants were treated as experts of their experiences so that the researchers can gain an insider's perspective. The instrument titled "Psychosocial Implications of Emotional Dependence on AI Questionnaire (PIEDAQ)" had two sections (A and B). Section A obtained personal data of respondents while Section B comprised three clusters: A, B and C. Cluster A consisted 10 items on adolescents' emotional dependence on AI, Cluster B contained 10 items that elicited responses from the respondents on the psychosocial Implications of adolescents' emotional dependence on AI while Cluster C consisted 8 items on factors responsible for adolescents' emotional dependence on AI with response options: Strongly Agree (SA) 4 points, Agree (A) 3points, Disagree (D) 3 points and Strongly Disagree (SD) 1 point. With a maximum possible score of 40 and a minimum score of 10, the instrument ranked extent of emotional dependence on AI as follows: scores between 10–20 indicated low dependence, scores between 21–30 indicated moderate dependence and scores between 31–40 indicated high dependence. Also, with a maximum mean score of 4.0 and a minimum mean score of 1.0, the instrument ranked psychosocial implications and Influencing factors as follows: 1.00 – 2.49

implied low psychosocial implication or low Influencing factor; 2.50 – 2.99 indicated moderate psychosocial implication or moderate Influencing 3.00 – 4.00 implied psychosocial implication or low Influencing factor.

The instrument was thoroughly scrutinized by four experts from Educational Technology, Educational Psychology, Adolescent Mental Health and Measurement/Evaluation Units of the Department of Education to ensure validity. Revisions addressed clarity, cultural alignment and age-appropriateness. A pilot test was conducted on a group of 50 adolescents at a secondary school in Ekwulobia in Anambra State outside the main study locale to avoid testing effects and discussion spillover into the camps. Cronbach Alpha analysis was used to estimate the internal consistency of the instrument and reliability coefficient value of 0.88 was realised which was considered reliable.

The researchers sort and received gatekeeper approval from camp organizers; parental consent and adolescent assent were also obtained prior to instrument administration. Trained research assistants administered 332 copies of the questionnaire to willing adolescents in supervised group sessions; average completion time was 20–25 minutes. The researchers informed the participants of the confidentiality of all responses and added that participants can refrain from filling the questionnaire or withdraw from the research at any time without any obligation to maintain involvement. Completed instruments were collected on the spot and checked onsite for missing data; this is to ensure 100% return rate. Data collected were analyzed using mean and standard deviation to answer the research questions. Data analysis was primed using the Statistical Package for Social Sciences (SPSS) version 23.

RESULTS

Table 1: Frequency and Percentage Distribution of AI platforms Utilized for Chatting by Adolescents

AI Platform	Frequency (n= 332)	Percentage
Chatgpt	124	37.4%
Snapchat My AI	84	25.3%
Meta AI	59	17.8%
Gemini (Google AI)	27	8.1%
Character.AI	20	6.0%
Replika	12	3.6%
DeepSeek	6	1.8%
Total	332	100

Table 1 presents the frequency and percentage distribution of AI platforms utilized for chatting by adolescents in Awka metropolis. Results reveal that Chatgpt is the most widely used AI platform among adolescents, accounting for highest responses. Snapchat My AI

follows closely reflecting adolescents' strong use of social media-based AI features. Meta AI ranks third likely due to its integration into Facebook/Instagram platforms already popular among Nigerian youth. Gemini (Google AI), Character.AI and Replika have smaller user bases, reflecting limited awareness or access. DeepSeek is the least used, possibly due to lower visibility in Nigeria compared to other platforms.

Table 2: Mean and Standard Deviation of Adolescents' Dependence on AI for Emotional Support (N = 332)

Items	\bar{X}	SD
1. I prefer talking to an AI about personal problems rather than a friend.	2.65	1.01
2. I find AI responses more comforting than those from people I know.	2.78	0.96
3. I check my AI chat when I am feeling lonely, stressed or upset.	3.05	0.88
4. I would feel lost if I could not talk to my AI companion.	2.42	1.12
5. I rely on AI to make me feel better after a stressful day.	2.96	0.93
6. I seek AI advice for emotional problems before asking a person.	2.55	1.04
7. I feel emotionally attached to my AI companion.	2.31	1.09
8. I share my deepest secrets with AI.	2.22	1.14
9. I avoid discussing some issues with family because I can ask AI instead.	2.48	1.07
10. AI helps me manage my emotions better than people around me	2.84	0.91
Grand Mean	27.26	10.15

$\bar{X}=2.5$

Table 2 presents adolescents' extent of dependence on AI for emotional support. Majority of them reported that they check their AI chat when they are feeling lonely, stressed or upset; they rely on AI to make them feel better after a stressful day; AI helps them manage their emotions better than people around them; they find AI responses more comforting than those from people they know ($\bar{X}>2.5$) indicating that adolescents primarily use AI as a coping tool. Table 2 further presents that the total mean score is 27.26 which falls with the ranking of 20 to 30 suggesting adolescents demonstrate a moderate level of dependence on AI for emotional support. Report of adolescents on extent of dependence on AI for emotional support with the lowest means (I share my deepest secrets with AI, I feel emotionally attached to my AI companion ($\bar{X}<2.5$) suggest that while adolescents use AI for relief, they do not fully replace human intimacy with AI.

Table 3: Mean and Standard Deviation of Psychosocial Implications Associated with Adolescents' Emotional Dependence on AI (N = 332)

Items	\bar{X}	SD	Rank Level
1. I spend less time talking with friends about my feelings because I feel AI understands me better.	2.81	0.95	Moderate
2. Using AI has made me more comfortable avoiding difficult conversations with others.	2.92	0.90	Moderate
3. I sometimes feel lonelier after chatting with AI.	2.74	1.02	Moderate
4. I have experienced sleep disturbance related to late-night AI chatting.	2.46	1.07	Low
5. My schoolwork has sometimes suffered because I spend time with AI.	2.39	1.05	Low
6. I sometimes follow AI advice without checking with others.	2.65	0.96	Moderate
7. I feel anxious with people but I find AI more reassuring.	2.88	0.92	Moderate
8. Talking to AI seem to have reduced my ability to talk to people.	2.77	1.01	Moderate
9. I find it harder to trust people because I trust AI more.	2.43	1.12	Low
10. I have reduced my involvement in group social activities because I prefer AI.	2.68	0.98	Moderate
Grand Mean	26.73	09.01	

$\bar{X}=2.5$

Table 3 reveals psychosocial Implications of adolescents' emotional dependence on AI. The highest mean scores which include, avoiding difficult conversations, feeling reassured by AI instead of people and spending less time-sharing feelings with friends ($\bar{X}>2.5$) highlight that AI use is affecting social interaction and communication patterns. Seven items fall with the mean rank of 2.50 – 2.99 which implies moderate psychosocial implication of adolescents' emotional dependence on AI but not yet on the sever level.

Table 4: Mean and Standard Deviation of Factors Responsible for Adolescents' Emotional Dependence on AI (N = 332)

Items	\bar{X}	SD
1. I use AI because it feels anonymous and private.	3.18	0.87
2. I use AI because it is available and easily accessible anytime.	3.42	0.76
3. My parents/guardians rarely discuss emotional issues with me.	2.89	0.94
4. I have limited access to counseling at school.	2.76	0.98
5. I use AI because it does not judge me.	3.35	0.81
6. I believe AI gives more correct answers than friends for emotional issues.	2.95	0.92
7. I rarely have anyone to confide in.	2.68	1.01
8. Peers I know also use AI as companions.	3.08	0.89

Cluster Mean= 3.04

Results in Table 4 reveal the factors responsible for adolescents' emotional dependence on AI. Participants reported that availability/accessibility, non-judgmental nature of AI, anonymity/privacy are strong drive for adolescents' emotional dependence on AI. Furthermore, peer influence confirmed the role of social modeling. Factors such as believe that AI gives more correct answers than friends for emotional issues, parents/guardians rarely discuss emotional issues with the adolescent and limited access to counseling at school were also noted as factors responsible for adolescents' emotional dependence on AI, reflecting systemic gaps in adolescent support systems in the Nigerian context.

DISCUSSION

Results of the study revealed that adolescents most frequently used Chatgpt, Snapchat My AI and Character.AI with relatively lower use of platforms such as Replika and Gemini. This pattern underscores the influence of accessibility and familiarity on adolescents' choice of AI platforms. In Nigeria, widely adopted apps such as Snapchat and Meta products tend to integrate seamlessly with adolescents' existing digital habits, thereby increasing usage rates. The preference for ChatGPT and Character.AI also aligns with global reports that adolescents gravitate toward platforms perceived as conversational, adaptive and capable of engaging in emotionally nuanced dialogue (Shum, He & Li, 2018). These findings suggest that rather than adopting obscure AI tools, adolescents embed emotional AI interactions within platforms already central to their social and entertainment lives.

Findings of the study also revealed that showed a moderate level of emotional dependence on AI among adolescents, Adolescents reported using AI to cope with stress, loneliness and emotional disclosure, while some admitted preferring AI to family or friends for sensitive issues. This finding resonates with Turkle (2017) who warned of the emergence of parasocial attachments with conversational machines and with Larsen (2022), who highlighted adolescents' attraction to AI's anonymity and constant availability. This growing reliance signals a shift away from the traditionally communal forms of socialization (Nwoye, 2015), raising concerns about the long-term psychosocial costs of such substitution.

The study revealed that emotional dependence on AI was associated with psychosocial challenges, including reduced peer interaction, avoidance of difficult conversations, sleep disturbance, academic interference, increased loneliness and diminished trust in others. The highest-rated implications were avoidance of difficult conversations and reduced ability to talk with people. These findings corroborate earlier work by Howard and Borenstein (2018) who argued that AI companionship can undermine authentic social skills. Importantly, this result mirrors Erikson's (1968) psychosocial theory, which emphasizes that adolescent identity formation requires meaningful human interaction. By substituting AI for interpersonal relationships, adolescents may be compromising opportunities for authentic emotional growth.

The study further identified that accessibility, anonymity/privacy, non-judgmental responses and peer influence were the strongest factors influencing emotional dependence. Parental unavailability and limited school counseling access also contributed moderately. This aligns with Wentzel (2017) who emphasized the importance of parental and institutional roles in adolescent emotional support. Where such supports are lacking, adolescents turn to technological alternatives. In Nigeria, the limited integration of counseling services in schools, coupled with communication gaps between parents and adolescents, appears to be driving the adoption of AI as an emotional confidant.

CONCLUSION

This study established that adolescents in Awka increasingly engage with AI platforms such as ChatGPT, Snapchat, My AI and Character.AI for emotional support, with usage driven by accessibility, anonymity and peer influence. The findings revealed a moderate level of emotional dependence on AI, suggesting that though not yet overwhelming, reliance is substantial enough to shape adolescents' psychosocial experiences. Emotional dependence on AI was significantly linked to psychosocial implications, including reduced peer interaction, avoidance of difficult conversations, loneliness and diminished trust in human relationships. These results highlight the dual role of AI as both a supportive tool and a potential disruptor of adolescents' healthy development. The study concludes that while AI may serve as a convenient emotional outlet, its unchecked use risks eroding traditional communal support systems, underscoring the need for balanced digital literacy, parental involvement and school-based counseling interventions.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. Parents and guardians should cultivate open and supportive communication with adolescents, particularly on emotional issues, to reduce the likelihood of adolescents substituting AI for parental guidance. Family-based interventions that promote trust and empathy are essential in curbing overdependence on artificial companionship.
2. Schools should strengthen counseling services by ensuring that professional counselors are accessible to adolescents. Integrating emotional intelligence education and digital literacy into the curriculum will equip students with healthier coping mechanisms and critical awareness of AI limitations.

3. Educational policymakers should develop guidelines for the responsible use of AI technologies among young people, emphasizing safe, balanced and developmental use. Policies should also mandate the integration of psychosocial support structures in secondary schools and youth programs.
4. Given the communal nature of Nigerian society, community leaders and religious organizations should design youth programmes that ensures belonging, resilience and authentic interpersonal relationships as protective buffers against overreliance on AI.
5. Future studies should expand to other regions of Nigeria and Africa to provide comparative insights, and employ longitudinal designs to track the long-term psychosocial effects of AI emotional dependence among adolescents.

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