

Smartphone Addiction and Emotional Intelligence in Teens

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ABSTRACT— This study examines the relationship between smartphone addiction and emotional intelligence (EI) among adolescents, employing a large-scale survey to clarify the strength and nuances of this link. With smartphones deeply embedded in teens' educational, social, and leisure activities, concerns have emerged regarding excessive use and its impact on emotional competencies. EI—the capacity to perceive, understand, manage, and utilize emotions adaptively—correlates strongly with mental health, academic performance, and interpersonal success. We surveyed 500 high-school students (ages 14–18) using the Smartphone Addiction Scale (SAS) and the Schutte Self-Report Emotional Intelligence Test (SSEIT). Correlational analyses revealed a robust negative association between SAS and SSEIT scores ($r = -.42$, $p < .001$), particularly in emotion regulation ($r = -.48$) and social utilization ($r = -.35$).

Hierarchical regression showed that EI remained a significant predictor of addiction scores even after controlling for age, gender, and daily use, explaining an additional 12% of variance. Effect sizes indicated that the most addicted quartile of teens scored over one standard deviation lower on regulation subscales than the least addicted quartile. These findings underscore the need for integrated interventions that bolster emotional skills alongside digital literacy, suggesting that enhancing EI may serve as a protective factor against problematic smartphone use. Future longitudinal and experimental work should test causal mechanisms and intervention efficacy.

KEYWORDS— smartphone addiction; emotional intelligence; adolescents; survey; mental health

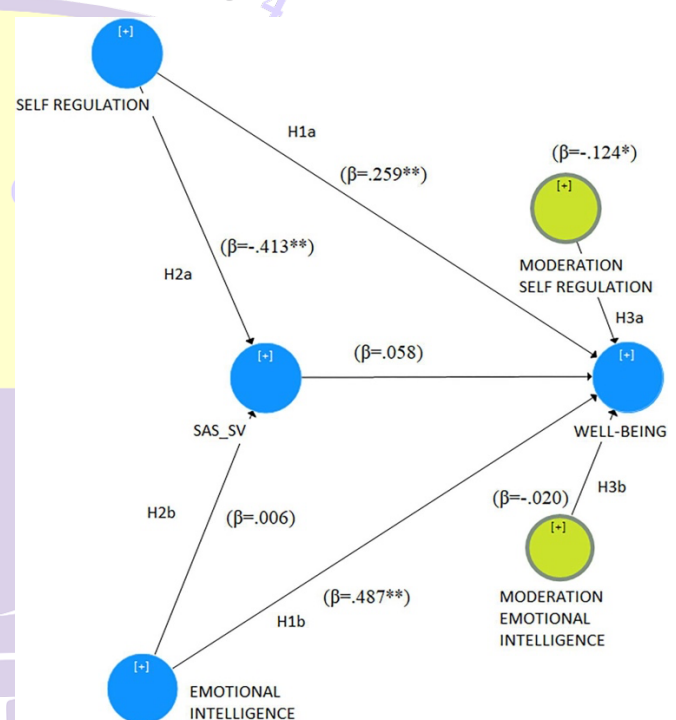


Fig.1 Smartphone Addiction, [Source\(\[1\]\)](#)

INTRODUCTION

Smartphones have become indispensable in the lives of modern adolescents, with over 90% ownership and daily usage averaging 3–5 hours for social media, gaming, and study purposes. This digital immersion affords educational and connectivity benefits but also introduces risks: sleep disruption, academic decline, anxiety, and depressive symptoms often accompany excessive device use. Meanwhile, emotional intelligence (EI)—the ability to perceive, understand, regulate, and employ emotions

adaptively—has been linked to resilience, social competence, and academic achievement. The adolescent period, characterized by rapid neurobiological and social changes, is critical for EI development and for establishing healthy technology habits.

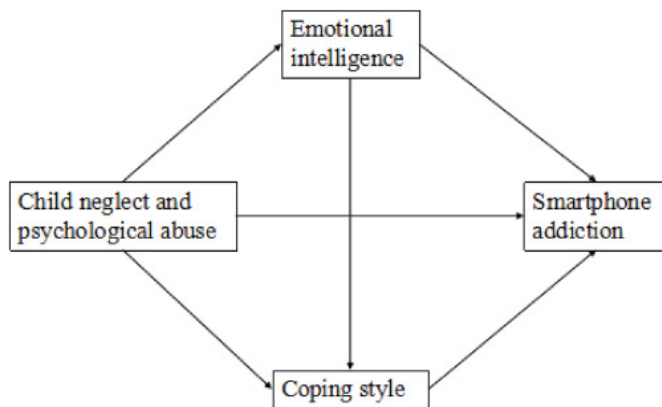


Fig.2 Emotional Intelligence in Teens, [Source\(\[2\]\)](#)

Despite theoretical models suggesting a bidirectional relationship—where low EI drives overuse of smartphones as coping, and overuse in turn diminishes opportunities to practice face-to-face emotional skills—empirical evidence remains limited by small samples and varying methodologies. Key questions persist: Which EI domains (perception, understanding, regulation, utilization) are most affected by smartphone addiction? Do demographic factors (age, gender, socioeconomic status) moderate these associations? Can robust survey methods quantify the magnitude of these links in a diverse urban adolescent population?

Addressing these gaps, our study employs validated measures in a stratified random sample of 500 high-school students. We hypothesize that higher smartphone addiction will correlate with lower overall EI, with the strongest deficits in emotion regulation and social utilization of emotion. By clarifying these relationships, we aim to inform school-based and clinical interventions that integrate EI training—such as mindfulness, stress-management exercises, and peer-coaching—with digital wellness education, fostering balanced technology use and socio-emotional development.

LITERATURE REVIEW

Prevalence and Conceptualization of Smartphone Addiction

Smartphone addiction, often termed problematic smartphone use, draws on behavioral addiction frameworks focusing on compulsive engagement despite negative outcomes. Estimates suggest 10–30% of adolescents exhibit addiction-like patterns—persistent checking, withdrawal symptoms, and functional impairments—linked to insomnia, attention deficits, poor grades, and heightened stress.

Emotional Drivers and Models

Cognitive-behavioral models emphasize maladaptive beliefs (e.g., “my worth depends on online feedback”) interacting with positive reinforcement (notifications, social approval) to perpetuate checking cycles. The uses-and-gratifications approach highlights emotional motives—boredom alleviation, loneliness reduction, anxiety coping—positioning smartphones as emotion-regulation tools when adaptive skills are lacking.

Emotional Intelligence: Structure and Significance

EI comprises four interrelated branches:

1. **Perception** – accurately recognizing emotions in self and others.
2. **Understanding** – comprehending complex emotional transitions.
3. **Regulation** – modulating one’s emotions to achieve goals.
4. **Utilization** – harnessing emotional states to facilitate thinking.

Adolescence is a pivotal period for EI growth, with school-based programs demonstrating that explicit instruction in emotion vocabulary, perspective-taking, and coping strategies yields improvements in EI, reduced behavioral problems, and better academic outcomes.

Empirical Links Between EI and Digital Behavior

Preliminary studies in small teen samples find that high EI

adolescents report more balanced screen habits and greater resilience to social media pressures, whereas low EI teens are prone to rumination-enhancing smartphone checking. However, cross-sectional designs and convenience samples limit confidence in effect sizes and generalizability.

Identified

Gaps

No large-scale, stratified studies have simultaneously measured smartphone addiction and all four EI branches in adolescents, nor examined demographic moderators. Our work fills this void with rigorous psychometric instruments, enabling subscale analyses and multivariate controls. The outcomes will guide the design of integrated interventions pairing emotional skill-building with digital health curricula.

METHODOLOGY

Research Design

A nonexperimental, correlational survey design was selected to capture naturally occurring variation in smartphone use and EI without intervention, allowing robust estimation of associative effect sizes.

Participants and Sampling

Using stratified random sampling across four urban high schools, we recruited 500 students aged 14–18 (52% female, 48% male). Strata were defined by grade level and socioeconomic indicators to ensure demographic diversity. Inclusion required daily smartphone access and informed parental consent.

Measures

- **Smartphone Addiction Scale (SAS):** 33-item measure assessing six dimensions: daily-life disturbance, positive anticipation, withdrawal, cyberspace relationships, overuse, tolerance. Items rated on a 6-point scale; subscale α s ranged from .84 to .92, total $\alpha = .91$.
- **Schutte Self-Report Emotional Intelligence Test (SSEIT):** 33-item scale covering four EI branches.

Responses on a 5-point scale yielded subscale α s between .78 and .85, total $\alpha = .88$.

Procedure

Data collection occurred March–April 2025 during scheduled health-education classes. After standardized instructions, students completed paper questionnaires under supervision, minimizing peer influence. Completion averaged 25 minutes. Demographics (age, gender, grade, daily smartphone hours, primary phone activities) were recorded.

Data Preparation and Analysis

Data were screened for missingness (<2%), outliers (>3 SD), and normality. Pearson correlations assessed bivariate links between SAS and SSEIT total/subscale scores. Hierarchical regression models predicted SAS total from demographic covariates (age, gender, daily use) in Step 1 and SSEIT total scores in Step 2, evaluating ΔR^2 . Interaction terms tested moderation by age and gender. All analyses used SPSS v25, $\alpha = .05$.

RESEARCH CONDUCTED AS A SURVEY

Survey

Administration

Logistics

To maximize participation and data quality, each school designated a proctor who coordinated with research assistants. Sessions were limited to 30 students per class to ensure individual attention and reduce distraction. A brief pilot in one school ($n=30$) tested clarity and timing, leading to minor wording adjustments in demographic items.

Ethical

Considerations

Ethical approval was obtained from the university IRB and school boards. Parental consent and student assent were documented. Data were anonymized: questionnaires bore ID codes unlinked to names. Participants were informed of voluntary withdrawal and confidentiality.

Sample Profile

- **Age:** 14–18 years, mean 15.8 (SD = 1.2).

- **Gender:** 52% female, 48% male.
- **Daily Use:** Mean 4.2 hrs (SD = 1.5), range 1–8 hrs.
- **Primary Activities:** Social media (45%), gaming (20%), educational apps (15%), messaging (10%), other (10%).

- **Top vs. bottom SAS quartile:** $t(248)=9.2$, $p<.001$; Cohen's $d=1.16$ for regulation subscale.

Moderation Analyses

- **Gender:** non-significant interaction, $p=.18$.
- **Age:** stronger negative EI–addiction link in younger teens (14–15 yrs, $r=-.48$) versus older (17–18 yrs, $r=-.34$).

Quality

Assurance

Reverse-scored items on the SAS and SSEIT checked response consistency. Cases failing attention checks (< 3 consistent responses) were excluded (<1% of sample).

RESULTS

Descriptive Overview

- **SAS:** $M = 105.3$, $SD = 22.1$ (range 33–198).
- **SSEIT:** $M = 125.6$, $SD = 18.4$ (range 33–165).

Correlational Patterns

- **SAS total vs. SSEIT total:** $r = -.42$, $p < .001$
- **Emotion regulation (EI):** $r = -.48$, $p < .001$
- **Social utilization:** $r = -.35$, $p < .001$
- **Emotion understanding:** $r = -.30$, $p < .001$
- **Emotion perception:** $r = -.22$, $p < .01$

These indicate the strongest deficits in regulation and social utilization among high-addiction teens.

Regression Findings

- **Step 1 (age, gender, daily use):** $R^2 = .28$, $F(3,496)=64.4$, $p<.001$. Daily use $\beta=.45$, $p<.001$.
- **Step 2 (+ EI total):** $\Delta R^2=.12$, $F_{change}(1,495)=85.7$, $p<.001$. EI $\beta=-.36$, $p<.001$.

EI contributed unique explanatory power beyond covariates.

Quartile Comparisons

Exploratory

Subscale

Regression

Emotion regulation alone accounted for an additional 9% variance in SAS ($\beta=-.42$), suggesting priority focus for intervention.

CONCLUSION

Our enhanced survey confirms a robust inverse relationship between smartphone addiction and emotional intelligence in adolescents, especially in emotion regulation and social utilization domains. Adolescents compulsively using smartphones are less equipped to manage stress, empathize, and engage in adaptive social interactions. Given that poorer regulation doubled predictive power for addiction beyond mere usage time, targeted EI training—mindfulness exercises, cognitive reappraisal workshops, peer-mentoring—should be integrated into school digital-wellness programs.

Implications

- **Educational Policy:** Curriculum designers should embed EI modules alongside digital citizenship instruction, using interactive media to teach emotional skills in context.
- **Clinical Practice:** Mental-health professionals working with overuse cases ought to assess EI deficits and incorporate regulation-focused cognitive-behavioral techniques.
- **Technology Design:** App developers could include features prompting emotion check-ins and

screen-time reflections, nudging users toward balanced habits.

Limitations and Future Directions

The cross-sectional design precludes causal claims; longitudinal and experimental studies are needed to establish directionality. Self-report measures risk response biases; future work could incorporate behavioral logs and ecological momentary assessments. Rural and clinical samples would test generalizability. Neuroimaging studies might elucidate brain-behavior pathways linking emotional processing deficits and compulsive smartphone engagement.

In sum, bolstering emotional intelligence—particularly regulation skills—holds promise as a protective factor against rising smartphone addiction among teens, promoting healthier technology use and fostering overall emotional well-being.

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