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Exploring Digital Literacy and Mental Health among the Tea Tribes Adolescents in Sonitpur District, Assam

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ABSTRACT

This study investigates the relationship between digital literacy and mental health among the tea tribes adolescents in Sonitpur district, Assam. Although digital literacy is often seen as a protective factor for adolescent well-being, its role in marginalized communities remains underexplored. The study asks: *What are the levels of digital literacy and mental health among tea tribe adolescents, and is there a significant relationship between the two?* A quantitative, cross-sectional, descriptive-correlational design was used. Stratified random sampling selected 200 adolescents (100 boys, 100 girls) from tea garden model high schools. Digital literacy was measured with a self-structured scale (α = .949), and mental health with the Psychological Well-Being Scale (α = .725). Data were analyzed using descriptive statistics and Pearson's correlation. Both digital literacy (M = 38.29, SD = 10.78) and mental health (M = 39.61, SD = 4.17) were moderate. Correlation analysis showed a very weak, nonsignificant relationship, r (198) = .013, p = .851. Digital literacy alone does not significantly influence mental health in this group. Broader socio-economic and psychosocial factors must be addressed alongside digital skills to improve adolescent well-being.

Keywords: Digital literacy; Mental health; Adolescents; Tea tribes; Marginalized communities

1. Introduction

Technology has become an inseparable part of human life in the 21st century. From education and communication to healthcare and entertainment, digital devices influence almost every aspect of daily living, particularly among today's youth (Haddock et al., 2022). The rapid expansion of Information and Communication Technologies (ICTs) has made smartphones, tablets, and their applications widely accessible, especially to adolescents (Khang et al., 2013). Often referred to as "digital natives" (Prensky, 2001), adolescents have been immersed in technology since early childhood, shaping the way they think, learn, and interact compared to earlier generations of "digital immigrants" (Benvenuti et al., 2023).

Adolescence is one of the most unique and sensitive development periods of human life. Digital technology offers adolescents significant developmental advantages. It enables them to connect and interact with others, access information, explore identities in safe environments, and engage with innovative educational resources, including virtual classrooms (Best et al., 2014; Rose et al., 2022). In this way, technology not only transforms learning and social interactions but also plays a crucial role in shaping identity formation, social connectedness, and emotional well-being (Benvenuti et al., 2023). At the same time excessive or ineffective way of use of digital devices brings important risks. These risks include exposure to harmful or violent online content, cyberbullying, and unsafe interactions with strangers. Adolescents may also engage in risky digital behaviors such as oversharing personal information, illegal downloads, or hacking attempts, leaving them vulnerable to exploitation or legal consequences (Livingstone & Stoilova, 2021; Livingstone et al., 2015). Such challenges highlight the critical importance of digital literacy-not only as a technical skill for competent and safe technology use (Mascheroni & Ólafsson, 2014), but also as a protective factor supporting adolescents' mental health and overall well-being.

Digital literacy has been widely acknowledged as a preventive factor for adolescent mental health. Vissenberg, d'Haenens, and Livingstone (2022) highlight that digital literacy and online resilience can serve as safeguard against the negative consequences of adverse online experiences,

facilitating young people's well-being. Collectively, these findings underscore the importance of promoting digital literacy as a vital component of mental health promotion.

For marginalized groups such as the tea tribe adolescents of Assam, digital literacy holds even greater significance. These communities face poverty, low educational achievement, and high socio-economic disparities, all of which heighten vulnerability to stress and mental health challenges. In such contexts, digital literacy becomes more than a technical competency-it is a tool for **social inclusion** (Warschauer, 2003). Digital literacy equips adolescents in marginalized communities with the skills deal with digital platforms effectively and safely, thereby reducing their exposure to potential online risks. At the same time, it provides access to educational resources, supportive networks, health-related information, and opportunities for self-expression. Collectively, these factors can reduce psychological stress, build resilience, and contribute to improved mental well-being.

This study therefore explores the level of digital literacy and examines the relationship between digital literacy and mental health among the adolescents from this unique community in the Sonitpur district of Assam. The study aims to understand how levels of digital literacy may influence mental health in this marginalized population group.

Objectives of the Study

- To assess the level of digital literacy among the tea tribes adolescents
- To examine the mental health status of the tea tribes adolescents
- To explore the relationship between digital literacy and mental health among the tea tribes adolescents

Research questions of the study

- What is the digital literacy level of the tea tribes adolescents?
- What is the mental health status of the tea tribes adolescents?

Hypothesis of the study

- **H1:** There is a significant relationship between digital literacy and mental health among tea tribe adolescents.

Method

Research type: This study adopts a quantitative, descriptive–correlational survey design. Since the data were collected at a single point in time and no variables were manipulated, the design is cross-sectional and non-experimental.

Population and Sample: The population of the present study comprises all adolescent students studying in classes VIII, IX, and X, within the age range of 14-17 years, in tea garden model high schools of Sonitpur district, Assam. A total of 200 students were selected as the sample, consisting of 100 girls and 100 boys, using stratified random sampling.

Research Location: The study was conducted in Sonitpur district of Assam, India. The district is located in the middle part of Assam and is characterized by a large number of tea gardens, with a total of 13 tea garden model high schools.

Tools for data collection: A self-structured **Digital Literacy Scale** consisting of 5 themes and 12 items was used to assess the digital literacy level of the students. Responses were recorded on a 5-point Likert scale: 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree, and 1 = Strongly Disagree. The reliability of the scale was found to be (α = .949), which falls within the excellent range.

To measure **mental health**, the *Mental Health Dimension* of the *Psychological Well-Being Scale* developed by Dr. Devendra Singh Sisodia and Ms. Pooja Choudhary (2012) was employed. This dimension consists of 10 positively worded items. Responses were also recorded on the same 5-point Likert scale as mentioned above. The reliability of this dimension was found to be (α = .725), which is within the acceptable range.

Data Collection and Analysis of Data

Permission was taken from the headmasters of the concerned school before data collection. Data was collected by utilizing the above-mentioned tools. The intension of the study was clearly explained to the respondents, and guidance was provided in case of any turbulence during data collection.

The collected data were entered into SPSS version 20. For analyses, total scores of digital literacy and mental health were treated as continuous variables. Higher scores, in both the variables, indicated higher levels of digital literacy and mental health status. The digital literacy scores further categorized into levels of digital literacy using researcher-defined cut-off points based on the possible score range of the scale. For mental health, the categorical interpretation norms provided in the manual for the mental health dimension was applied to classify respondents into levels (e.g., Very Low, Low, Moderate, High). Descriptive statistics, including means, standard deviations, frequencies, and percentages, were computed to summarize the main study variables (digital literacy and mental health). Pearson's correlation analysis was conducted to examine the bivariate relationship between digital literacy and mental health.

Results

The results of the present found that the total mean score of digital literacy among tea tribe adolescents was M = 38.29, SD = 10.78 (Table 1). When categorized, 12.5% of students were in the *Very Low* level, 25.5% in *Low*, 43.5% in *Moderate*, and 18.5% in *High* digital literacy (Table 2).

Table 1: *Descriptive Statistics for Digital Literacy (N = 200)*

Variable	N	Minimum	Maximum	M	SD
Total Digital Literacy Score	200	16.00	60.00	38.29	10.78

Table 2: *Frequency and Percentage Distribution of Digital Literacy Levels (N = 200)*

Level	Frequency	Percentage	Cumulative %
Moderate	161	80.5	80.5
High	39	19.5	100.0
Total	200	100	

For mental health, the total mean score was found, M = 39.61, *SD* = 4.17, with scores ranging from 29 to 47 (Table 3).

Table 3: *Descriptive Statistics for Mental Health (N = 200)*

Variable	N	Minimum	Maximum	M	SD
Total Mental Health Score	200	29.00	47.00	39.61	4.17

Regarding mental health levels, a majority of adolescents (80.5%) were in the moderate range, while only 19.5% were in the high range (Table 4).

Table 4: *Mental Health Levels (N = 200)*

Digital Literacy Level	n	%	Cumulative %
Very low	25	12.5	12.5
Low	51	25.5	38.0
Moderate	87	43.5	81.5
High	37	18.5	100
Total	200	100	

The result of the correlation analysis was found to be positive but very weak and not statistically significant, r (198) = .013, p = .851. This indicates that, in this sample, digital literacy was not significantly associated with mental health. The hypothesis that digital literacy and mental health would be significantly related is not support. (Table-5).

Table 5: *Correlation Between Digital Literacy and Mental Health (N = 200)*

Variable	1	2
1. Total Digital Literacy Score	**—**	**.013**
2. Total Mental Health Score	**.013**	**—**

Note. Pearson's r = .013, p = .851, indicating a nonsignificant relationship.

Discussion

This study assessed the levels of digital literacy and mental health among tea tribe adolescents and explored the relationship between these two variables. The findings revealed that most adolescents scored in the moderate range of both digital literacy and mental health, with fewer reporting very low or high levels. The correlation analysis showed only a very weak and nonsignificant relationship between digital literacy and mental health. These results indicate that digital literacy is not a strong factor related to psychological well-being among tea tribe adolescents.

One possible explanation for these findings inherent in the socio-economic environment of the tea tribe community. Most adolescents come from very poor backgrounds where personal ownership of smartphones is rare. Devices are typically shared within families, and knowledge of digital tools is primarily school-based, as ICT is introduced from Class VI. However, because personal device access is limited, overall screen time remains low. As a result, adolescents' exposure to social media, online games, and other digital platforms is restricted. This reduces the likelihood that digital literacy exerts any significant influence on their mental health. It suggests that not digital literacy itself, but rather the patterns of digital habits and usage, may be more relevant to mental well-being.

The present findings align with earlier research indicating that digital literacy does not have a straightforward positive impact on mental health. Bahramian, Mazaheri, and Hasanzadeh (2018) found that media literacy among adolescent girls in Semirom city was only modestly correlated with psychological well-being, particularly with personal growth ($r = .216$, $p < .05$) and self-acceptance ($r = .218$, $p < .05$). This suggests that literacy skills alone are insufficient predictors of overall mental health. Similarly, Ettyani (2018) reported that while higher levels of digital literacy in senior high school students improved self-confidence and academic achievement and reduced anxiety, excessive screen time and digital engagement pressures were associated with stress, fatigue, and social isolation. Taken together, these findings highlights that digital competence is not an automatic protector against psychological distress. Instead, it interacts with contextual factors such as healthy digital habits, balance between online and offline activities, and institutional support systems etc.

In this context, the present study contributes by showing that digital literacy alone does not significantly enhance mental health outcomes in marginalized groups such as the tea tribes community. Broader determinants-including family climate, economic struggles, access to resources, resilience, and other personality traits-likely play a more critical role in shaping well-being. For such populations, digital literacy must therefore be accompanied by targeted psychological and social support mechanisms to bring meaningful improvements in adolescent mental health.

The results also suggest practical implications. Efforts to support adolescents' well-being should not focus solely on digital literacy training but should also include broader support systems such as family involvement, school-based guidance, and mental health services and effective digital habits.

Finally, there ae some limitations of this study. Because it employed a cross-sectional design, causal relationships cannot be established. The reliance on self-reported data may also limit accuracy. In addition, the sample was restricted to adolescents from the tea tribe backgrounds, which may limit the generalizability of findings. Future research should examine how other factors, such as family environment, peer influence, digital habits, personality traits etc interact with digital literacy to shape mental health. Longitudinal studies would also provide insight into how these relationships develop over time.

Conclusion

In conclusion, this study found that although both digital literacy and mental health were moderate among tea tribe adolescents, there was no significant relationship between the two. These results highlight the importance of looking beyond digital skills and considering wider social and psychological factors when seeking to understand and improve adolescent mental health, especially in marginalized communities.

References

Bahramian, E., Amidi Mazaheri, M., & Hasanzadeh, A. (2018). The relationship between media literacy and psychological well-being in adolescent girls in Semirom city. *Journal of Education and Health Promotion, 7*, 148. https://doi.org/10.4103/jehp.jehp_41_18

Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing: A systematic narrative review. *Children & Youth Services Review, 41*, 27–36. https://doi.org/10.1016/j.childyouth.2014.03.001

Benvenuti, M., Wright, M., Naslund, J., & Mires, A. C. (2023). How technology use is changing adolescents' behaviors and their social, physical, and cognitive development. *Current Psychology, 42*, 16466–16469. https://doi.org/10.1007/s12144-023-04254-4

Ettyani. (2024, November 29). The impact of digital literacy on students' mental well-being: An approach to healthier education. *Seminar Nasional Ilmu Terapan (SNITER), 8*(1). PGRI Delta Sidoarjo University. https://ojs.widyakartika.ac.id/index.php/sniter/article/view/786

Haddock, A., Ward, N., Yu, R., & O'Dea, N. (2022). Positive effect of digital technology used by adolescents: A scoping review of the literature. *International Journal of Environmental Research and Public Health, 19*(14009). https://doi.org/10.3390/ijerph192114009

Khang, H., Kim, J. K., & Kim, Y. (2013). Self traits and motivation as adolescents of digital media flow and addiction: The internet, mobile phones, and video games. *Computers in Human Behavior, 29*(6), 2416–2424. https://doi.org/10.1016/j.chb.2013.05.027

Livingstone, S. (2021). Developing social media literacy: How children learn to interpret risky opportunities on social network sites. *Communications. The European Journal of Communication Research, 39*(3), 203–303.

Livingstone, S., & Stoilova, M. (2021). The 4Cs: Classifying online risk to children (CO:RE Short Report Series on Key Topics). Leibniz-Institut für Medienforschung; Hans-Bredow-Institut. https://doi.org/10.21241/ssoar.71817

Livingstone, S., Kirwil, L., Ponte, C., & Staksrud, E. (2014). In their own words: What bothers children online? *European Journal of Communication, 29*, 271–288.

Mascheroni, G., & Ólafsson, K. (2014). *Net children go mobile: Risks and opportunities* (2nd ed.). Milano: Educatt.

Presky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon, 9*(5), 1–6.

Rose, N. M., Sultal, N. H. H., Ishak, A. S., & Ismail, F. (2022). Effect of digital technology on adolescents.

Vissenberg, J., d'Haenens, L., & Livingstone, S. (2022). Digital literacy and online resilience as facilitators of young people's well-being. *European Psychologist, 27*(2), 76–85. https://doi.org/10.1027/1016-9040/a000478

Warschauer, M. (2003). *Technology and social inclusion: Rethinking the digital divide*. MIT Press.