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SOCIAL MEDIA ADDICTION AND ANXIETY AMONG FEMALE ADOLESCENTS

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ABSTRACT
Social media addiction is an emerging public health concern among adolescents, with potential consequences for psychological well-being, including anxiety. Evidence from rural Indonesian settings, particularly among female adolescents, remains limited. This study aimed to analyse the relationship between social media addiction and anxiety among female high school students in Langke Rembong Sub-district, Manggarai Regency, East Nusa Tenggara, Indonesia. A cross-sectional descriptive-analytic design was employed, involving 390 female students from six high schools selected through total sampling. Social media addiction was measured using the Bergen Social Media Addiction Scale (BSMAS) and dichotomised as Non-Addiction (score 6–23) and Addiction (score ≥24). Anxiety was assessed using the Generalised Anxiety Disorder-7 (GAD-7) and categorised as minimal, mild, moderate, or severe. Data were analysed using the Pearson chi-square test of independence. Most respondents (92.1%, n = 359) were classified as Non-Addiction, while 7.9% (n = 31) met the criterion for social media addiction. Overall, 30.0% had minimal, 33.1% mild, 20.5% moderate, and 16.4% severe anxiety. Social media addiction was significantly associated with anxiety level ($\chi^2(3) = 23.053$, $p < 0.001$). Among addicted respondents, 74.2% had clinically significant (moderate or severe) anxiety, compared with 33.7% of non-addicted respondents. Social media addiction is associated with higher anxiety severity among female adolescents in a rural Indonesian setting.

Keywords: anxiety; female adolescent; GAD-7; school health; social media addiction

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INTRODUCTION

Adolescence is a transitional developmental stage characterised by rapid biological, psychological, and social changes (Freeman, 2022). During this period, adolescents are particularly susceptible to the influence of digital technology, most notably social media. Platforms such as Instagram, TikTok, WhatsApp, and YouTube have become deeply embedded in adolescent daily life, serving as primary channels for social interaction, self-expression, and information consumption (Vogels et al., 2022). While moderate social media use may confer social benefits, excessive and compulsive engagement, or social media addiction, has emerged as a significant public health concern, particularly among young females (Cheng et al., 2021; Shannon et al., 2022).

Social media addiction is characterised by salience, tolerance, mood modification, relapse, withdrawal, and conflict, consistent with the components model of behavioural addiction, and is most commonly operationalised using the Bergen Social Media Addiction Scale (BSMAS) (Gomez et al., 2024; Zarate et al., 2023). Research across diverse populations suggests that adolescent females may be more vulnerable to problematic social media use than their male counterparts, which has been attributed to greater social comparison tendencies, appearance-based self-evaluation, and emotional investment in online interactions (Pedalino & Camerini, 2022; Saleem et al., 2024). In Indonesia, where smartphone penetration among adolescents has grown sharply over

the past decade, the prevalence of problematic social media use has become a pressing concern within the nursing and public health communities (DataReportal, 2026; Sarfika et al., 2024).

Mental health problems, including anxiety, have become increasingly prevalent among adolescents and young adults worldwide, with anxiety representing one of the most common psychological conditions affecting this population (Ab Rahman et al., 2025; Freeman, 2022). Multiple mechanisms have been proposed to explain the relationship between social media use and anxiety, including fear of missing out (FOMO) (Fioravanti et al., 2021), exposure to idealised social comparisons (Pedalino & Camerini, 2022; Vogels et al., 2022), cyber victimisation (Nicola et al., 2024), and disruption of sleep patterns through night-time device use (Brautsch et al., 2023). These mechanisms may disproportionately affect female adolescents, who demonstrate heightened sensitivity to relational and social-evaluative stressors (Amanda et al., 2025; Cao, 2025).

In Manggarai Regency, East Nusa Tenggara (NTT), Indonesia, a predominantly rural region with limited access to professional mental health services (Kementerian Kesehatan Republik Indonesia, 2024), female adolescents navigate increasing digital exposure alongside traditional gender role expectations. Despite growing evidence at the global level, evidence from Indonesian rural contexts specifically examining female adolescents remains sparse (Ardana et al., 2025). Understanding the relationship between social media addiction and anxiety in this population is essential to inform targeted, context-appropriate interventions. This study aimed to analyse the relationship between social media addiction and anxiety among female high school students in Langke Rembong Sub-district, Manggarai Regency, NTT, Indonesia.

METHOD

This study used a cross-sectional descriptive-analytic design. The research was conducted in 2025–2026 across six high schools in Langke Rembong Sub-district, Manggarai Regency, East Nusa Tenggara, Indonesia: SMAN 1 Langke Rembong, SMAN 2 Langke Rembong, SMAK Setia Bakti, SMA Karya, SMA Widya Bhakti, and SMA Aquinas. Total sampling was applied; all 390 female students enrolled in Grades X and XI who met the inclusion criteria (female sex, active enrolment, and willingness to participate) were recruited.

Social media addiction was assessed using the Indonesian version of the Bergen Social Media Addiction Scale (BSMAS), a six-item instrument that assesses the core addiction components: salience, mood modification, tolerance, withdrawal, conflict, and relapse (Zarate et al., 2023). Responses were rated on a five-point Likert scale ranging from 1 (very rarely) to 5 (very often). The total score was obtained by summing the responses to all six items, yielding a score range of 6–30, with higher scores indicating greater levels of addictive social media use (Gomez et al., 2024). Following previous validation studies, a cut-off score of ≥24 was used to identify adolescents with probable social media addiction (Gomez et al., 2024; Luo et al., 2021; Zarate et al., 2023). The Indonesian BSMAS has demonstrated a unidimensional structure with good fit in confirmatory factor analysis (CFI = 1.000; TLI = 1.003; RMSEA = 0.000; SRMR = 0.031), standardised factor loadings of 0.54–0.78, and acceptable internal consistency (Cronbach's $\alpha = 0.80$; McDonald's $\omega = 0.86$) (Pramukti et al., 2023). A separate Indonesian adaptation likewise reported a construct reliability of 0.91 and an average variance extracted of 0.65 (Sumaryati et al., 2024). Anxiety was assessed using the Indonesian version of the Generalised Anxiety Disorder-7 (GAD-7), a seven-item instrument (total score range 0–21) categorised as minimal (0–4), mild (5–9), moderate (10–14), or severe (15–21) (Spitzer et al., 2006). The Indonesian GAD-7 has shown valid items (item–total correlation coefficients of 0.648–0.800, $p < 0.01$) and good internal consistency (Cronbach's $\alpha = 0.867$) (Budikayanti et al., 2019), and a recent systematic review of studies in students and populations in developing countries reported Cronbach's α values of approximately 0.87–0.93 and consistent support for a unidimensional structure (Petriano et al., 2025). Both instruments were

administered as self-completed questionnaires in classroom settings supervised by research assistants.

Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated for all variables. The primary inferential test was the Pearson chi-square test of independence (χ^2), which evaluates whether the distribution of GAD-7 anxiety categories differs significantly across BSMAS social media addiction categories. The chi-square test was selected because both variables are categorical, and the sample size (n = 390) met the minimum expected cell frequency assumption (no cell below 5). Statistical significance was set at $p < 0.05$. This study received ethical approval from Ethics Committee of Universitas Katolik Indonesia Santu Paulus Ruteng with Reference Number 342/USP/L02/KET/12/2025. Informed consent was obtained from all participants, and permission was obtained from each school. Participation was voluntary, and data were analysed anonymously.

RESULT

Table 1 presents the sociodemographic characteristics of the 390 female adolescent respondents. The mean age was 16.17 ± 0.768 years (range: 15–19 years). Participants were almost equally distributed between Grade X (51.0%, n = 199) and Grade XI (49.0%, n = 191). SMAN 1 Langke Rembong contributed the largest proportion of respondents (23.8%), followed by SMAK Setia Bakti (22.3%) and SMA Aquinas (21.3%), while SMA Widya Bhakti contributed the smallest (4.9%).

Table 1.
Sociodemographic characteristics of respondents (n = 390)

Respondent characteristics	f	%	Mean ± SD
Age (years)	390	100.0	16.17 ± 0.768
School of origin			
SMAN 1 Langke Rembong	93	23.8	
SMAN 2 Langke Rembong	74	19.0	
SMAK Setia Bakti	87	22.3	
SMA Karya	34	8.7	
SMA Widya Bhakti	19	4.9	
SMA Aquinas	83	21.3	
Grade level			
Grade X	199	51.0	
Grade XI	191	49.0	

Table 2 presents the distribution of social media addiction as measured by the BSMAS, dichotomised into Non-Addiction and Addiction categories. The majority of respondents (92.1%, n = 359) were classified as Non-Addiction (BSMAS score 6–23), while 7.9% (n = 31) met the criterion for social media addiction (BSMAS score ≥24).

Table 2.
Distribution of social media addiction (BSMAS) among female adolescents (n = 390)

Social media addiction category	f	%
Non-Addiction (score 6–23)	359	92.1
Addiction (score ≥24)	31	7.9

Table 3 shows the distribution of anxiety severity as measured by the GAD-7. The most common category was mild anxiety (33.1%, n = 129), followed by minimal (30.0%, n = 117), moderate (20.5%, n = 80), and severe (16.4%, n = 64). Overall, 70.0% of respondents experienced at least mild anxiety (GAD-7 score ≥5), and 36.9% had clinically significant anxiety (moderate or severe; GAD-7 score ≥10). The mean GAD-7 score was 8.20 ± 5.73, placing the average respondent within the mild anxiety range.

Table 3.
Distribution of anxiety level (GAD-7) among female adolescents (n = 390)

Anxiety level	f	%
Minimal (score 0–4)	117	30.0
Mild (score 5–9)	129	33.1
Moderate (score 10–14)	80	20.5
Severe (score 15–21)	64	16.4

Table 4 presents the crosstabulation of social media addiction against anxiety level. Among the Non-Addiction group (n = 359), anxiety was predominantly minimal or mild: 32.3% minimal, 34.0% mild, 19.2% moderate, and 14.5% severe, with a combined clinically significant anxiety rate (moderate or severe) of 33.7% (n = 121). In contrast, among respondents classified as Addicted (n = 31), the distribution was skewed towards higher severity: only 3.2% had minimal and 22.6% mild anxiety, while 35.5% had moderate and 38.7% had severe anxiety. The combined clinically significant anxiety rate in the Addiction group was 74.2% (n = 23), more than double that of the Non-Addiction group. The Pearson chi-square test showed a statistically significant association between social media addiction and anxiety level ($\chi^2(3) = 23.053$, $p < 0.001$), indicating that respondents in the Addiction category were more likely to experience higher levels of anxiety than those in the Non-Addiction category.

Table 4.
Relationship between social media addiction (BSMAS) and anxiety level (GAD-7) among female adolescents (n = 390)

BSMAS category	Anxiety level (GAD-7), f (%)				Total f	χ^2 (df)	p-value
	Minimal	Mild	Moderate	Severe			
Non-Addiction	116 (32.3)	122 (34.0)	69 (19.2)	52 (14.5)	359	23.053 (3)	< 0.001
Addiction	1 (3.2)	7 (22.6)	11 (35.5)	12 (38.7)	31		

Note. Row percentages in parentheses. Non-Addiction = BSMAS score 6–23; Addiction = BSMAS score 24–30. Pearson chi-square test; minimum expected cell frequency = 5.087 (Addiction × Severe); no cell had an expected frequency below 5.

DISCUSSION

This study found that female adolescents classified as addicted to social media had a markedly higher burden of moderate and severe anxiety than their non-addicted peers. This pattern is consistent with the components model of behavioural addiction underlying the BSMAS (Zarate et al., 2023) and with the broader literature on social media addiction and adolescent mental health. Young people exposed to social isolation, loneliness, and psychosocial stressors tend to experience increased anxiety symptoms (Purnawati et al., 2022). A systematic review and meta-analysis by Shannon et al. (2022) reported a moderate, significant pooled correlation between problematic social media use and anxiety among adolescents and young adults (r = 0.348), alongside significant correlations with depression and stress. Similarly, a recent systematic review confirmed consistent associations between social media use and anxiety among adolescents (Kerr et al., 2025). Studies among Indonesian adolescents have likewise reported significant correlations between excessive social media use and anxiety (Alfaridzi et al., 2024), with excessive social media exposure associated with higher depression and anxiety levels (Sarfika et al., 2023). The present study extends this evidence to female adolescents in a rural Indonesian context.

Recent evidence suggests that adolescent mental health risk is driven more by appearance-focused and passive social media engagement than by total screen time alone, with problematic use and screen time showing the clearest positive associations and passive scrolling emerging as especially harmful (Kerr et al., 2025). In female adolescents and young women, Instagram browsing has been associated with lower body appreciation through upward comparison with influencers, and broader reviews continue to link appearance-focused or idealised content with higher body dissatisfaction and lower body esteem (Cao, 2025; Pedalino & Camerini, 2022). Night-time digital media use is associated with shorter sleep duration and poorer sleep quality, which may contribute to

internalising symptoms (Brautsch et al., 2023). The evidence for a uniquely female vulnerability is suggestive but not definitive: some reviews report higher psychological reactivity in girls and gender-diverse adolescents, but a longitudinal cohort did not find that gender substantially altered the screen time–symptom association (Amanda et al., 2025; Li et al., 2025).

Problematic social media use appears to be a more clinically meaningful risk marker for adolescent anxiety than total screen time alone (Saleem et al., 2024). Recent reviews found that problematic use and passive scrolling are more strongly associated with anxiety and depressive symptoms than general time online, and that sleep deprivation, social comparison, and feedback-seeking are recurring mediators (Gingras et al., 2023; Saleem et al., 2024). In girls, the association with duration of use is often stronger than in boys, but the sex difference is not uniform across studies, and a longitudinal cohort found no sex moderation of the screen time–symptom association (Li et al., 2025; Saleem et al., 2024). Recent work also supports the BSMAS as a first-pass screen for problematic social media use in adolescents (Rouleau et al., 2023), with one adolescent study identifying a clinical cut-off of 24 (Luo et al., 2021). Taken together, social media addiction is a significant correlate of anxiety severity among female adolescents in this setting and warrants integration into school health surveillance and mental health promotion efforts (Freeman, 2022; Grande et al., 2023).

This study has several limitations. The cross-sectional design does not allow causal inferences regarding the direction of the relationship between social media addiction and anxiety. Both variables were measured through self-reported questionnaires, which may be subject to recall and social desirability bias. The Addiction group was relatively small (n = 31), and the bivariate analysis did not adjust for potential confounders such as sleep quality, family relationships, academic stress, or daily duration of social media use. Furthermore, the sample was limited to female students from schools in one sub-district, which may limit the generalisability of the findings to male adolescents and to other regions of Indonesia.

CONCLUSION

This study demonstrated a statistically significant relationship between social media addiction and anxiety among female high school students in Langke Rembong, Manggarai Regency, East Nusa Tenggara, Indonesia. Female adolescents classified as addicted to social media tended to experience higher levels of anxiety than those who were not addicted.

DECLARATIONS

Acknowledgment: Not applicable.

Conflicts of interest: The authors declare no conflicts of interest.

Ethical approval: This study was approved by the Ethics Committee of Universitas Katolik Indonesia Santu Paulus Ruteng with Reference Number 342/USP/L02/KET/12/2025. Informed consent was obtained from all participants. Permission to conduct the study was obtained from each participating school.

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Data Availability Statement: The datasets generated and analysed during the current study are not publicly available because the participants are adolescents and their confidentiality must be protected. Anonymised data are available from the corresponding author (paskaliana.danal@gmail.com) on reasonable request.

Author Contributions: Paskaliana Hilpriska Danal: conceptualisation, methodology, formal analysis, writing original draft, writing review and editing, supervision. Viktoria Kartika Emer: investigation, data collection and data curation.

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REFERENCES

Ab Rahman, Z., Razali, S., Shahibi, M. S., Amin, M. N. M., Kamal, A. A., Asih, S. R., Rashidi, H. H., & Shahril, M. I. (2025). Healthy lifestyle components and mental health among undergraduate students. Unnes Journal of Public Health, 14(1), 79–92.

Alfaridzi, G. R., Putri, E. M., & Sulistiasih, S. (2024). Sosial media effect terhadap mental health adolescent di tengah transformasi digital: Studi komprehensif tentang psikologis dan risiko terkait. Observasi: Jurnal Publikasi Ilmu Psikologi, 2(3), 202–222.

Amanda, Q., Haryani, D., Sofa, Y., Purwanto, D., Maryam, A., Basrowi, R., & Devi, Y. (2025). Social media engagement patterns in relation to adolescent anxiety and depression: A systematic review. BKM Public Health and Community Medicine, 41(9), e22664. https://doi.org/10.22146/bkm.v41i09.22664

Ardana, A. A., d'Arqom, A., Puteri, F. A., Indiastuti, D. N., Nasution, M. Z., Qorib, M. F., Setiawati, Y., & Yusof, J. (2025). Mental health status and literacy of adolescent in rural area of Mojokerto, East Java, Indonesia. Jurnal Psikiatri Surabaya, 14(2).

Brautsch, L. A. S., Lund, L., Andersen, M. M., Jennum, P. J., Folker, A. P., & Andersen, S. (2023). Digital media use and sleep in late adolescence and young adulthood: A systematic review. Sleep Medicine Reviews, 68, 101742. https://doi.org/10.1016/j.smrv.2022.101742

Budikayanti, A., Larasari, A., Malik, K., Syeban, Z., Indrawati, L. A., & Octaviana, F. (2019). Screening of generalized anxiety disorder in patients with epilepsy: Using a valid and reliable Indonesian version of Generalized Anxiety Disorder-7 (GAD-7). Neurology Research International, 2019, 5902610. https://doi.org/10.1155/2019/5902610

Cao, B. (2025). The psychological costs of self-presentation on social media for adolescent body image. Lecture Notes in Education Psychology and Public Media, 123, 177–181. https://doi.org/10.54254/2753-7048/2025.NS28247

Cheng, C., Lau, Y.-C., Chan, L., & Luk, J. W. (2021). Prevalence of social media addiction across 32 nations: Meta-analysis with subgroup analysis of classification schemes and cultural values. Addictive Behaviors, 117, 106845. https://doi.org/10.1016/j.addbeh.2021.106845

DataReportal. (2026). Digital 2026: Indonesia. https://datareportal.com/reports/digital-2026-indonesia

Fioravanti, G., Casale, S., Bocci Benucci, S., Prostamo, A., Falone, A., Ricca, V., & Rotella, F. (2021). Fear of missing out and social networking sites use and abuse: A meta-analysis. Computers in Human Behavior, 122, 106839. https://doi.org/10.1016/j.chb.2021.106839

Freeman, M. (2022). The World Mental Health Report: Transforming mental health for all. World Psychiatry, 21(3), 391.

Gingras, M.-P., Brendgen, M., Beauchamp, M., Séguin, J., Tremblay, R., Côté, S., & Herba, C. (2023). Adolescents and social media: Longitudinal links between types of use, problematic use and internalizing symptoms. Research on Child and Adolescent Psychopathology. https://doi.org/10.1007/s10802-023-01084-7

Gomez, R., Zarate, D., Brown, T., Hein, K., & Stavropoulos, V. (2024). The Bergen–Social Media Addiction Scale (BSMAS): Longitudinal measurement invariance across a two-year interval. Clinical Psychologist, 28(2), 185–194.

Grande, A. J., Hoffmann, M. S., Evans-Lacko, S., Ziebold, C., de Miranda, C. T., Mcdaid, D., Tomasi, C., & Ribeiro, W. S. (2023). Efficacy of school-based interventions for mental health problems in children and adolescents in low and middle-income countries: A systematic review and meta-analysis. Frontiers in Psychiatry, 13, 1012257. https://doi.org/10.3389/fpsyt.2022.1012257

Kementerian Kesehatan Republik Indonesia. (2024). Hasil utama Survei Kesehatan Indonesia (SKI) 2023. https://www.badankebijakan.kemkes.go.id/daftar-frequently-asked-question-seputar-hasil-utama-ski-2023/hasil-utama-ski-2023/

Kerr, B., Garimella, A., Pillarisetti, L., Charlly, N., Sullivan, K., & Moreno, M. A. (2025). Associations between social media use and anxiety among adolescents: A systematic review study. Journal of Adolescent Health, 76(1), 18–28. https://doi.org/10.1016/j.jadohealth.2024.09.003

Li, S. H., Batterham, P. J., Whitton, A. E., Maston, K., Khan, A., Christensen, H., & Werner-Seidler, A. (2025). Cross-sectional and longitudinal associations of screen time with adolescent depression and anxiety. British Journal of Clinical Psychology, 64(4), 873–887. https://doi.org/10.1111/bjc.12547

Luo, T., Qin, L., Cheng, L., Wang, S., Zhu, Z., Xu, J., Chen, H., Liu, Q., Hu, M., & Tong, J. (2021). Determination the cut-off point for the Bergen social media addiction (BSMAS): Diagnostic contribution of the six criteria of the components model of addiction for social media disorder. Journal of Behavioral Addictions, 10(2), 281–290.

Nicola, E., Mastroyannopoulou, K., Reeves, H., & Pass, L. (2024). Longitudinal associations between peer victimisation subtypes and children and adolescents' anxiety: A meta-analysis. Aggression and Violent Behavior, 79, 102013. https://doi.org/10.1016/j.avb.2024.102013

Pedalino, F., & Camerini, A.-L. (2022). Instagram use and body dissatisfaction: The mediating role of upward social comparison with peers and influencers among young females. International Journal of Environmental Research and Public Health, 19(3), 1543.

Petriano, H., Lestari, R., & Windarwati, H. D. (2025). Psychometric properties of the GAD-7 for assessing anxiety disorder among students and populations in developing countries: A systematic review. Journal An-Nafs: Kajian Penelitian Psikologi, 10(2), 139–160. https://doi.org/10.33367/psi.v10i2.8191

Pramukti, I., Nurmala, I., Nadhiroh, S. R., Tung, S. E. H., Gan, W. Y., Siaw, Y. L., Yang, Y. N., Griffiths, M. D., Lin, C.-Y., & Pakpour, A. H. (2023). Problematic use of internet among Indonesia university students: Psychometric evaluation of Bergen Social Media Addiction Scale and Internet Gaming Disorder Scale-Short Form. Psychiatry Investigation, 20(12), 1103–1111. https://doi.org/10.30773/pi.2022.0304

Purnawati, E., Saraswati, L. D., Wurjanto, M. A., & Yuliawati, S. (2022). The effect of the COVID-19 pandemic on mental health (children, adolescents, young adults) and mental health service: Systematic review. Unnes Journal of Public Health, 11(2), 179–197.

Rouleau, R. D., Beauregard, C., & Beaudry, V. (2023). A rise in social media use in adolescents during the COVID-19 pandemic: The French validation of the Bergen Social Media Addiction Scale in a Canadian cohort. BMC Psychology. https://doi.org/10.1186/s40359-023-01141-2

Saleem, N., Young, P., & Yousuf, S. (2024). Exploring the relationship between social media use and symptoms of depression and anxiety among children and adolescents: A systematic narrative review. Cyberpsychology, Behavior, and Social Networking. https://doi.org/10.1089/cyber.2023.0456

Sarfika, R., Saifudin, I. M., Malini, H., Putri, D. E., Wicaksana, A. L., Mahathir, M., & Novrianda, D. (2023). Factors associated with anxiety and depressive symptoms among Indonesian adolescents during the COVID-19 pandemic: A cross-sectional study. Healthcare in Low-Resource Settings, 12(1), 1–8.

Sarfika, R., Wijaya, A., Putri, Z. M., & Saifudin, I. M. (2024). Smartphone addiction and adolescent mental health: A cross-sectional study in West Sumatra province. International Journal of Public Health Science, 13(2), 521.

Shannon, H., Bush, K., Villeneuve, P. J., Hellemans, K. G., & Guimond, S. (2022). Problematic social media use in adolescents and young adults: Systematic review and meta-analysis. JMIR Mental Health, 9(4), e33450. https://doi.org/10.2196/33450

Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. Archives of Internal Medicine, 166(10), 1092–1097.

Sumaryati, I. U., Sirodj, D. A. N., & Gadama, M. (2024). Adaptasi Indonesia Bergen Social Media Addiction Scale. Jurnal Psikogenesis, 12(1). https://academicjournal.yarsi.ac.id/index.php/Jurnal-Online-Psikogenesis/article/view/3994

Vogels, E. A., Gelles-Watnick, R., & Massarat, N. (2022). Teens, social media and technology 2022. Pew Research Center.

Zarate, D., Hobson, B. A., March, E., Griffiths, M. D., & Stavropoulos, V. (2023). Psychometric properties of the Bergen Social Media Addiction Scale: An analysis using item response theory. Addictive Behaviors Reports, 17, 100473.