

YOUTUBE USE AND PARENT-REPORTED CHARACTER DEVELOPMENT IN EARLY CHILDHOOD

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Abstract. YouTube has become part of young children's everyday media environment, but its developmental implications cannot be reduced to viewing time alone. This study examined the association between a parent-reported composite index of YouTube use and parent-reported character development in empathy, discipline, responsibility, and tolerance. A cross-sectional survey involved 50 children aged 2–7 years in Pattimpa Village, South Sulawesi, selected through simple random sampling from village demographic and integrated Posyandu registries. Parents completed structured questionnaires, and the data were analyzed using simple linear regression. The composite YouTube-use index was positively associated with the character-development score ($B = 0.552$, $SE = 0.242$, 95% CI [0.065, 1.039], $\beta = 0.313$, $t = 2.281$, $p = 0.027$), with $R^2 = 0.098$. The association was modest, and the model explained 9.8% of the observed variance. Because frequency, duration, and content type were combined in one index, the result should not be interpreted as evidence that longer viewing improves character. The findings support a contextual approach that considers content selection and parental involvement alongside viewing time.

Keywords: character development, digital parenting, early childhood, screen time, youtube use

Abstrak. YouTube telah menjadi bagian dari lingkungan media sehari-hari anak, tetapi implikasi perkembangannya tidak dapat dijelaskan hanya melalui durasi menonton. Penelitian ini menguji hubungan antara indeks komposit penggunaan YouTube yang dilaporkan orang tua dan perkembangan karakter anak yang juga dilaporkan orang tua, meliputi empati, disiplin, tanggung jawab, dan toleransi. Survei potong lintang dilakukan terhadap 50 anak usia 2–7 tahun di Desa Pattimpa, Sulawesi Selatan, yang dipilih melalui simple random sampling berdasarkan data demografi desa dan registrasi Posyandu terintegrasi. Orang tua mengisi kuesioner terstruktur dan data dianalisis menggunakan regresi linear sederhana. Indeks komposit penggunaan YouTube berhubungan positif dengan skor perkembangan karakter ($B = 0,552$; $SE = 0,242$; 95% CI [0,065, 1,039]; $\beta = 0,313$; $t = 2,281$; $p = 0,027$), dengan $R^2 = 0,098$. Hubungan tersebut tergolong terbatas dan model menjelaskan 9,8% variasi yang teramati. Karena frekuensi, durasi, dan jenis konten digabungkan dalam satu indeks, hasil ini tidak dapat ditafsirkan sebagai bukti bahwa durasi menonton yang lebih lama meningkatkan karakter anak. Temuan menekankan pentingnya mempertimbangkan konteks penggunaan, pilihan konten, dan keterlibatan orang tua selain waktu layar.

Kata kunci: anak usia dini, pengasuhan digital, penggunaan youtube, perkembangan karakter, waktu layar

Introduction

Digital media are now embedded in the routines of young children, and mobile video has become one of the most accessible forms of entertainment and informal learning. YouTube is especially prominent because it offers an almost unlimited stream of short and long videos that can be reached through smartphones and tablets. Research on early digital media has therefore moved beyond the question of whether children use screens toward a more differentiated examination of what they watch, how long they watch, and whether adults are involved in the viewing process (Barr, 2019; Mallawaarachchi et al., 2022; Radesky et al., 2020). This shift is important because two children with similar daily screen time may have very different experiences if one watches age-appropriate educational material with an adult while the other moves through automatically recommended entertainment videos without guidance.

The broader evidence supports this contextual view. Meta-analytic and review studies show that screen duration, content, co-use, timing, and family routines can have different associations with developmental outcomes (Eirich et al., 2022; Gomes et al., 2026; Madigan et al., 2020; Mallawaarachchi et al., 2024; Swider-Cios et al., 2023). Mallawaarachchi et al. (2024), for example, found that age-inappropriate content and caregiver screen use during child routines were associated with poorer psychosocial outcomes, whereas co-use was positively associated with cognitive outcomes. Earlier reviews likewise concluded that the effects of screen media in early childhood are heterogeneous rather than uniformly beneficial or harmful (Anderson & Subrahmanyam, 2017; Kostyrka-Allchorne et al., 2017; Radesky & Christakis, 2016).

YouTube-specific research adds another layer to this problem. Direct coding of videos viewed by infants and toddlers has found substantial variation in age appropriateness, educational value, pacing, commercial features, and positive role modeling (Henderson et al., 2024; Woods et al., 2026). Bonus et al. (2025), using videos submitted by parents of children aged 0–8 years, similarly reported that in-depth educational material was relatively uncommon and problematic depictions were present, even though parents also described positive experiences such as enjoyment and social bonding. These findings are relevant because parent perceptions of YouTube can be favorable even when the actual content is mixed. They also show why a broad label such as 'educational' cannot be assumed to represent high-quality content without direct examination of the videos children watch.

The present study focuses on character development, operationalized as observable behaviors related to empathy, discipline, responsibility, and tolerance. These dimensions overlap with the wider literature on prosocial and socioemotional development but should not be treated as a complete measure of moral development. Social Cognitive Theory provides one explanatory basis for considering media in this domain because children can observe modeled behavior and its consequences (Bandura, 1999). The Differential Susceptibility to Media Effects Model further emphasizes that media responses depend on developmental and social conditions rather than exposure alone (Valkenburg & Peter, 2013). Empirical work is consistent with this conditional view. Prosocial media have been associated with empathic concern and prosocial behavior in meta-analytic research (Coyne et al., 2018), and longitudinal evidence indicates that children's media use can remain associated with later prosocial development after accounting for family factors (Padilla-Walker et al., 2024).

Parental involvement is particularly important in early childhood because young children often encounter digital content within family routines rather than as independent media users. Active mediation and joint media engagement can help children interpret content, connect media messages to everyday experience, and regulate transitions away from screens. Studies of preschool media use have found that parental mediation, co-viewing, and parental technology habits are related to children's screen exposure and developmental context (Rasmussen et al., 2016; Wang et al., 2024). Recent longitudinal work on YouTube found that restrictive mediation and co-viewing were associated with different patterns of viewing time and content exposure across one year (Kim et al., 2026). In a separate longitudinal cohort, parental joint media engagement showed a more consistent relation with preschool prosocial behavior than screen duration or rule-setting alone (Chen & Yeung, 2026).

Evidence from Indonesia is still comparatively limited, particularly for rural communities. Existing studies have examined YouTube in relation to social interaction among young children and have adapted measures of parental mediation for Indonesian families (Qonita et al., 2023; Sitanggang et al., 2022). These studies are useful for local context, but they do not resolve how platform use relates to character-oriented behaviors in communities where access patterns, family routines, and parental digital literacy may differ from larger urban settings. Rurality should not be treated as an explanatory factor by itself, however, because the present study does not compare rural and urban children or measure infrastructure and socioeconomic conditions directly.

Against this background, the study examines whether a composite index of parent-reported YouTube use is associated with parent-reported character development among children aged 2–7 years in Pattimpa Village. The YouTube index combines frequency, duration, and content-type items, while the character measure combines empathy, discipline, responsibility, and tolerance. The study therefore addresses one specific question: whether the two composite scores are associated within this sample. It does not estimate the independent effects of viewing duration, frequency, content quality, or parental mediation. This narrower formulation is intended to keep the statistical claim aligned with what the design and measurement can support.

Method

Research Design and Procedure

A quantitative cross-sectional survey design was used to examine the association between the YouTube-use composite index and the character-development score. The unit of analysis was the child, while questionnaire responses were provided by parents. Data were collected in Pattimpa Village, Ponre District, Bone Regency, South Sulawesi, Indonesia, from March to May 2026. Because exposure and outcome were measured at the same point in time, the analysis estimates statistical association and does not establish temporal order or causation.

Population and Sampling

The sampling frame consisted of 101 children aged 2–7 years listed in village demographic data and integrated Posyandu registries. The sample size was determined in the original research protocol using the Slovin formula with a 10% margin of error, $n = N/[1 + N(e^2)]$, producing a target of approximately 50 participants. The final sample therefore included 50 children. The age

range was retained as defined in the study protocol, although it spans markedly different developmental stages and is considered in the interpretation of the findings.

Simple random sampling was conducted within the available registry by assigning each eligible child a unique number and selecting participants with a random-number procedure. This approach reduced deliberate selection within the sampling frame, but it does not make a one-village sample representative of rural Indonesian children more broadly (Creswell & Creswell, 2023; Sugiyono, 2023).

Operationalization of Variables and Instruments

Data were collected using a structured parent-report questionnaire with a five-point Likert response format (1 = Strongly Disagree to 5 = Strongly Agree). The independent variable was represented by six YouTube-use items covering frequency, duration, and content type, with two items for each dimension. Frequency items concerned how often the child watched YouTube, duration items concerned time spent watching, and content-type items concerned the kinds of videos viewed. For the regression analysis, the six responses were aggregated into the composite index used in the original dataset. Because the index combines exposure quantity with content indicators, it is treated here as a pattern-of-use index rather than as a unidimensional measure of screen time or content quality.

Character Development was measured with 16 parent-reported items covering empathy, discipline, responsibility, and tolerance, with four items for each dimension. The items referred to observable behavior such as comforting a distressed peer, following routines, completing age-appropriate responsibilities, and interacting respectfully with peers from different backgrounds. The regression analysis used the total character-development score and did not estimate separate associations for the four dimensions.

Both variables were therefore reported by the same parent. No direct behavioral observation, teacher rating, YouTube viewing history, or device-use log was included in the submitted dataset. Throughout the article, the outcome is consequently described as parent-reported character development, and the predictor is interpreted as a parent-reported composite index of YouTube-use patterns.

The composite index should not be interpreted as indicating that a higher score is uniformly better or worse across every dimension. Its statistical coefficient refers only to the aggregate score used in the authors' regression model. This distinction is necessary because more frequent or longer viewing and exposure to particular content types are conceptually different aspects of media use and may have different developmental associations when analyzed separately.

Table 1. Operationalization of Variables and Instrument Items

Variable	Dimension	Indicator	Example item	No. of items	Scale
YouTube-Use Composite Index (X)	Frequency	How often the child watches per day/week	My child watches YouTube every day.	2	1–5
	Duration	Average time spent per session	My child watches YouTube for more than 1 hour per session.	2	1–5

Variable	Dimension	Indicator	Example item	No. of items	Scale
Character Development (Y)	Content type	Types of content consumed	My child watches educational or animated content.	2	1–5
	Empathy	Showing concern for others	My child comforts friends who are crying.	4	1–5
	Discipline	Following rules/routines	My child stops watching when the time limit is reached.	4	1–5
	Responsibility	Completing tasks/duties	My child puts away toys after playing.	4	1–5
	Tolerance	Respecting differences	My child plays appropriately with friends from different backgrounds.	4	1–5

Data Validity and Reliability

Before the main study, the questionnaire was piloted with 30 respondents. Item analysis used Corrected Item–Total Correlation. With $N = 30$ and $\alpha = 0.05$, the reference value reported by the authors was $r = 0.361$, and all items exceeded this value. Cronbach's alpha was 0.752 for the YouTube-use index and 0.936 for the character-development scale, indicating acceptable and high internal consistency, respectively. These results support item consistency within the reported composites, but they should not be taken as a substitute for factor-analytic evidence of construct validity.

Ethical Considerations

The study used a non-interventional parent-report survey. Parents completed questionnaires about their children's media use and everyday behavior; no experimental manipulation or direct testing of children was undertaken, and no personally identifying information about participating children is reported in this article.

Data Analysis

Data were analyzed using IBM SPSS Statistics version 25. Descriptive statistics summarized participant characteristics and reported YouTube-use patterns. Before hypothesis testing, the authors examined residual normality, linearity, homoscedasticity, and independence. Simple linear regression was then used with $\alpha = 0.05$. Results are reported with the unstandardized coefficient (B), standard error (SE), standardized coefficient (β), t statistic, F statistic, R^2 , adjusted R^2 , and p values. The 95% confidence interval for B was calculated from the reported coefficient and standard error using the t distribution with 48 residual degrees of freedom.

The model contains one composite predictor and does not adjust for age, sex, parenting style, socioeconomic conditions, parental mediation, peer interaction, temperament, schooling, or other family characteristics. The coefficient is therefore an unadjusted association between the two composite scores. Statistical significance is interpreted together with the size of R^2 and the limitations of the cross-sectional design rather than as evidence of practical importance or causal direction.

Results and Discussion

Results

Demographic Profile and Descriptive Statistics

The sample comprised 50 children, including 44% boys and 56% girls. The largest age group was 4–5 years (44%), followed by 6–7 years (38%) and 2–3 years (18%). Most children (84%) had used YouTube for more than 12 months. The reported duration categories show that 90% of the sample watched for more than 60 minutes per day, with 40% reported at 61–120 minutes and 50% at more than 120 minutes. No child was reported to watch for less than 30 minutes per day. In addition, 64% of the children were reported to watch YouTube without parental supervision.

Regression Assumption Checks

The regression diagnostics are summarized in Table 2. The Kolmogorov–Smirnov value is reported as the test statistic rather than as a Z score. Based on the values supplied in the original output, none of the reported checks indicated a clear violation of normality, linearity, homoscedasticity, or residual independence for the simple regression model.

Table 2. Results of Regression Assumption Checks

Test	Statistic / value	Significance / criterion	Interpretation
Normality (Kolmogorov–Smirnov)	Statistic = 0.092	$p = 0.200 (> 0.05)$	Residuals approximately normal
Linearity (deviation from linearity)	$F = 1.011$	$p = 0.452 (> 0.05)$	No significant deviation from linearity
Homoscedasticity (Glejser)	$p = 1.000$	$p > 0.05$	No evidence of heteroscedasticity
Independence (Durbin–Watson)	$DW = 1.804$	Between 1.5 and 2.5	No evident autocorrelation

Hypothesis Testing (Simple Linear Regression)

The simple linear regression equation was $\hat{Y} = 44.393 + 0.552X$, where X represents the parent-reported YouTube-use composite index and $\hat{Y}$ represents the predicted parent-reported character-development score. The complete regression estimates are presented in Table 3.

Table 3. Simple Linear Regression Results

Predictor	B	SE	β	t	p
Constant	44.393	5.072	—	8.753	< 0.001
YouTube-Use Composite Index	0.552	0.242	0.313	2.281	0.027

Model fit: $R = 0.313$; $R^2 = 0.098$; Adjusted $R^2 = 0.079$; $F(1, 48) = 5.204$, $p = 0.027$; standard error of the estimate = 3.731.

The regression model was statistically significant, $F(1, 48) = 5.204$, $p = 0.027$. The YouTube-use composite index was positively associated with the character-development score ($B = 0.552$, $SE = 0.242$, 95% CI [0.065, 1.039], $\beta = 0.313$, $t = 2.281$, $p = 0.027$). The model accounted for 9.8% of the observed variance in character development ($R^2 = 0.098$), and adjusted R^2 was 0.079. The remaining variance was not explained by this single-predictor model. The coefficient applies to the

composite index and does not show which component of frequency, duration, or content type contributed to the association.

Discussion

The study found a positive association between the parent-reported YouTube-use composite index and parent-reported character development, but the size of the model must remain central to interpretation. The standardized coefficient was modest and the predictor explained 9.8% of the observed variance. Character-oriented behaviors in early childhood develop within family relationships, peer interaction, schooling, temperament, and wider socialization, so a single media-use index would not be expected to account for most variation. The result is therefore best read as a limited association within this sample rather than evidence that YouTube is a major determinant of empathy, discipline, responsibility, or tolerance.

The construction of the predictor helps explain why the positive coefficient should not be equated with a benefit of longer screen time. Frequency, duration, and content type were combined in one index, even though the broader literature shows that these dimensions can have different associations with development. Higher screen duration has been associated with less favorable behavioral and developmental outcomes in several preschool studies, while educational content, co-use, and purposeful viewing can show different patterns (Eirich et al., 2022; Kerai et al., 2022; Madigan et al., 2019; McArthur et al., 2022). Recent reviews reach a similar conclusion: screen context matters, and total time alone is an incomplete representation of children's digital experience (Mallawaarachchi et al., 2022, 2024; Swider-Cios et al., 2023). The present coefficient therefore describes the aggregate index, not the independent effect of viewing duration.

YouTube-specific studies make this distinction even more important. Henderson et al. (2024) and Woods et al. (2026) directly coded videos viewed by infants and toddlers and found wide variation in age appropriateness, educational content, attention-capturing features, commercial material, and positive role modeling. Bonus et al. (2025) also showed that parents could report positive experiences such as enjoyment and social bonding even when coders identified problematic or shallow content in some videos. This is relevant to the current design because both YouTube use and character were reported by parents. A positive association may partly reflect the way parents perceive and evaluate their children's media experiences, in addition to any relationship between actual exposure and behavior. Direct coding of viewing histories would be needed to separate those possibilities.

The character dimensions used in this study are also more closely related to the literature on prosocial and socioemotional development than to a single established construct of 'character.' Prosocial media have been associated with empathic concern and prosocial behavior across studies (Coyne et al., 2018), while longitudinal research indicates that media use and family prosocial behavior can remain linked to later prosocial development (Padilla-Walker et al., 2024). Chen and Yeung (2026) found that parental joint media engagement was positively associated with preschool prosocial behavior, whereas screen time and rule-setting did not show the same direct pattern. At the same time, Wang et al. (2026) reported that short-form video overuse was negatively associated with prosocial behavior and positively associated with aggressive behavior, with empathy and emotion regulation implicated in the pathway. Taken together, these studies reinforce a

multidimensional interpretation rather than a simple claim that video exposure is either beneficial or harmful.

Parental supervision is an important contextual finding in the present sample because 64% of children were reported to watch without supervision. That percentage should not be treated as a tested explanatory variable, however, because supervision was not included in the regression. The wider literature provides a reason to examine it directly in future research. Active mediation and co-viewing can shape children's understanding of media content (Rasmussen et al., 2016), parental mediation and parental phubbing are associated with preschool screen use (Wang et al., 2024), and recent longitudinal evidence shows that forms of mediation can alter patterns of YouTube viewing time and educational-content exposure (Kim et al., 2026). Research on parental technofence further shows that the presence of a parent is not equivalent to active engagement because parent technology use can interrupt interaction and is associated with child behavior problems (McDaniel & Radesky, 2018a, 2018b).

Developmental timing and displacement of interaction also need to be considered. Brushe et al. (2024) found that greater screen exposure from 12 to 36 months was associated with fewer adult words, child vocalizations, and conversational turns. Longitudinal studies have also linked greater screen exposure with weaker later performance in specific cognitive or developmental domains (Ma et al., 2025; Supanitayanon et al., 2020; Uzundağ et al., 2026; Yamamoto et al., 2023). These findings do not directly contradict the present positive coefficient because they examine different outcomes and, in many cases, separate screen duration from other contextual features. They do show why a composite index that mixes time and content should not be interpreted as if every additional unit represented more beneficial exposure.

Several limitations define the boundary of the present contribution. First, the cross-sectional design does not establish temporal order. Second, both predictor and outcome were rated by the same parent, creating potential common-method and social-desirability bias. Third, the sample included only 50 children from one village and covered a wide age range from two to seven years. Fourth, the model did not adjust for age, sex, parenting style, socioeconomic conditions, parental mediation, temperament, schooling, peer interaction, or family digital practices. Fifth, the study used parent report rather than objective device logs or direct coding of videos. Objective mobile sampling has shown that device records can provide more precise information about application use, timing, and duration than conventional questionnaires (Radesky et al., 2020, 2022). These limitations mean that the finding should not be generalized as a causal effect of YouTube on character development.

Within those limits, the study contributes evidence from a rural Indonesian setting that is still underrepresented in the literature. The main implication is not that parents should increase or eliminate YouTube use. A more defensible interpretation is that children's digital experiences should be considered in terms of content, duration, adult involvement, and the place of media within sleep, play, conversation, and other daily routines. Systematic reviews of early screen use have repeatedly emphasized these contextual dimensions (Gomes et al., 2026; Janssen et al., 2020; Li et al., 2020; Mallawaarachchi et al., 2024). For research, the next step is to analyze frequency, duration, and content type as separate predictors, use narrower age bands or age-adjusted models, test parental mediation directly, and combine parent questionnaires with teacher ratings, behavioral observation, or viewing-history data. Such designs would clarify whether particular forms of

YouTube use are associated with empathy, discipline, responsibility, or tolerance rather than only with an overall composite score.

Conclusion

Among 50 children in Pattimpa Village, the parent-reported YouTube-use composite index was positively associated with the parent-reported character-development score ($B = 0.552$, 95% CI [0.065, 1.039], $\beta = 0.313$, $p = 0.027$). The model explained 9.8% of the observed variance, indicating a modest statistical association rather than a strong developmental effect. Because the predictor combined frequency, duration, and content type, the analysis cannot determine which component contributed to the result and cannot support a conclusion that longer viewing improves character.

The findings are most useful when read within the broader evidence that children's media experiences depend on what they watch, how media fit into daily routines, and how adults engage with them. Future studies should separate the dimensions of YouTube use, use larger and developmentally narrower samples, test parental mediation and family context directly, and combine parent reports with objective or multi-informant measures. For practice, the present evidence supports careful content selection and active parental involvement rather than a simple judgment that YouTube is inherently beneficial or harmful for young children's character development.

Declarations

R contributed to the conceptualization of the study, research design, data collection, data analysis, and preparation of the original draft. ATR contributed to methodological development, conceptual refinement, research supervision, and critical review of the manuscript. MG contributed to the validation of the research process, interpretation of the findings, supervision, and critical revision of the manuscript. All authors reviewed and approved the final version of the manuscript. The authors declare that there are no conflicts of interest related to this study. ChatGPT by OpenAI was used in a limited capacity to assist with language editing, readability, and reference-format checking. It was not used for data collection, statistical analysis, interpretation of the findings, or formulation of the scientific conclusions. Participation in the study was voluntary, and informed consent was obtained from the parents or legal guardians of the participating children. Confidentiality was maintained through anonymization and the use of participant codes. The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to appropriate confidentiality considerations.

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