



Original Research Paper

Parenting Styles and Developmental Screening Categories Among Young Children in Sukabumi

Shofi Mar Ash Sholihah Santoso^{1*}, Johan Budhiana¹, Yeni Yulianti²

¹Bachelor of Nursing, Sukabumi College of Health Sciences, Indonesia

²Associate Degree in Nursing, Sukabumi College of Health Sciences, Indonesia

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Email Corresponding:
shofimarasholihah@gmail.com

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Abstract

Background: Developmental screening and responsive caregiving are essential components of early childhood healthcare. Parenting styles may be associated with developmental screening outcomes. **Objectives:** To examine the association between parenting styles and developmental screening categories among children aged 2 to 5 years in Sukabumi, Indonesia. **Methods:** This quantitative cross sectional study included 260 mother-child pairs recruited through reported cluster random sampling. Parenting styles were assessed using the Parenting Styles and Dimensions Questionnaire, while development was screened using the Kuesioner Pra Skrining Perkembangan. Associations were analyzed using Pearson chi square and Cramér's V. **Results:** Authoritative, authoritarian, and permissive parenting accounted for 49.6%, 24.2%, and 26.2% of participants, respectively. Developmental screening indicated normal findings in 67.7%, suspect findings in 24.2%, and delay findings in 8.1%. A significant association was observed ($\chi^2 = 21.148$; $df = 4$; $p < 0.001$; Cramér's $V = 0.202$). Suspect findings were highest with authoritarian parenting (41.3%), while delay findings were highest with permissive parenting (14.7%). **Conclusions:** Parenting styles were associated with developmental screening categories. Findings support caregiver counseling and routine developmental screening but do not establish causality.

Keywords: Caregiver counseling; Child development; Developmental surveillance; Parenting practices; Primary care.

Introduction

Language supports young children in communicating needs, sharing experiences, and participating in learning. Speech production, expressive language, and receptive language are related but distinct abilities. The CATALISE consensus distinguishes language disorder from other developmental conditions and emphasizes functional impact and persistence rather than a single screening label¹. In a population study of children entering school in Surrey, England, published in 2016, Norbury and colleagues estimated language disorder of unknown origin at 7.58% (95% confidence interval 5.33% to 10.66%)². This

population estimate concerns language disorder at school entry and cannot be transferred directly to developmental screening among children aged 2 to 5 years in Indonesia. Developmental surveillance links caregiver concerns, clinical assessment, and appropriate screening over time³.

In Indonesian primary care, the Kuesioner Pra Skrining Perkembangan (KPSP) provides an accessible framework for developmental prescreening. Its age specific forms include gross motor, fine motor, speech and language, and social independence tasks⁴. Consequently, a global KPSP category is broader than a diagnosis of speech or language delay. This

distinction matters when reporting the association between family practices and developmental findings: a child may have a screening concern in one or several domains, and a screening result alone does not identify its cause. The present study addresses recorded screening categories in a community health center population, with language development considered within the wider developmental context.

Parenting theory describes authoritative, authoritarian, and permissive patterns through the balance of responsiveness and behavioral guidance⁵. Robinson and colleagues operationalized these patterns in a questionnaire of parenting practices⁶. Recent research by Feldman and colleagues demonstrates that maternal parenting profiles can vary with child age, cultural context, and time⁷. Specific interaction practices may be more informative for language development than a broad style label. Rowe's longitudinal research examined the quantity and quality of speech directed to children⁸, while Romeo and colleagues examined conversational exposure and language related brain function⁹. These studies provide a rationale for considering opportunities for communication; they do not establish that a parenting category determines an individual child's developmental outcome.

Indonesian research also places parenting within a broader context of health and family resources. A study at Pantoloan Community Health Center in Palu did not find a significant association between parenting type and stunting¹⁰. Putri's review discusses parenting, diet, and family income in relation to growth¹¹. These nutritional outcomes differ from developmental screening, but they reinforce the importance of specifying the outcome and avoiding an assumption that the same association applies across all aspects of child health. Nayoan's report further highlights hearing assessment when children have delayed

speech, including those with autism¹². The local evidence therefore supports attention to caregiving and differential assessment rather than a single explanation for developmental concern.

The research question was whether the distribution of recorded developmental screening categories differed among authoritative, authoritarian, and permissive parenting groups at Karang Tengah Community Health Center, Sukabumi. The objective was to describe maternal and child characteristics, summarize parenting and screening categories, and examine their unadjusted association. The study contributes a local description of 260 mother and child dyads, retaining the three outcome categories so that different patterns of concern remain visible. It does not estimate incidence, establish a clinical diagnosis, or test the effectiveness of a parenting intervention.

These findings can inform conversations with caregivers and the organization of developmental assessment within primary care. An HTJ study by Adelia and colleagues evaluated education through an animated video and booklet and reported greater improvement in parental knowledge of cognitive stimulation than leaflet education¹³. Knowledge improvement is a distinct outcome from language improvement, but it provides relevant evidence for accessible caregiver education. The present study complements such work by describing the distribution of recorded screening findings across parenting groups. Counseling recommendations should remain responsive to each family and should accompany assessment when developmental concerns are identified.

Materials and Methods

Study Design

This quantitative correlational study used a cross sectional design in the service area of

UPTD Karang Tengah Community Health Center, Sukabumi City, Indonesia. Parenting and developmental screening categories were assessed within the same study rather than followed prospectively. The unit of analysis was a mother and her child aged 2 to 5 years. The source tables identify the observations as primary data from 2026. Reporting distinguishes the study design, the recorded measurements, and the scope of the analysis, consistent with STROBE principles¹⁴.

Sample

The source population comprised mothers with children aged 2 to 5 years in the health center service area. The analyzed sample included 260 dyads. Eligibility required an age eligible child, maternal willingness to participate, and maternal presence during data collection. Mothers with cognitive disorders were excluded; mothers who declined participation were not enrolled. Children aged 4 or 5 years were included, so the study population is described as young children rather than exclusively toddlers. Table 1 presents the recorded age categories without assuming a more precise age distribution than the source provides.

The sampling method was reported as cluster random sampling, and the sample size was reported as calculated using the Slovin expression $n = N / (1 + N e^2)$, where N is the source population size and e is the assumed precision. The reported analyzed sample is 260; the calculation is not used to imply statistical power for a three category association. The study record does not establish the numeric N and e , cluster definitions and counts, selection probabilities, randomization sequence, or the timing of recruitment. Accordingly, the analyzed dyads are described as the recruited sample, and district population representativeness is not asserted. Inference is

presented without a design correction and interpreted within that scope.

Data Collection Technique

The study used the PSDQ for maternal parenting reports and KPSP for developmental screening. Child characteristics were age and sex. Maternal characteristics were age, last completed educational level, and employment category. Age was retained in the source categories: child ages 2, 3, 4, and 5 years, and maternal ages 21 to 30, 31 to 40, and 41 to 50 years. Education was categorized as elementary school, junior high school, high school, or college; employment was categorized as working or not working. The analysis does not assign additional income, occupation, or stimulation measures to these variables.

Parenting was retained as a nominal variable with three recorded categories. The original label democratic is represented as authoritative throughout the revised analysis, corresponding to the intended parenting construct rather than a separate fourth style. Authoritative denotes responsiveness with guidance, authoritarian emphasizes demandingness with less responsiveness, and permissive denotes responsiveness with limited behavioral demands^{5,6}. The wording describes the conceptual categories; it does not substitute for the questionnaire's scoring key. The study specific PSDQ item count, language adaptation, subscale calculation, threshold or dominant score rule, and handling of equal scores were not established in the measurement record. The analysis therefore retains the original classification and does not retrospectively rescore participants.

Published Indonesian PSDQ evidence is relevant but must be matched to the population and version. Fahiroh and colleagues evaluated a version for adolescents¹⁵, which cannot alone establish measurement validity among mothers of children aged 2 to 5 years. Rahmawati and

colleagues evaluated an Indonesian short form in 169 mothers of children aged 5 to 7 years; second order confirmatory factor analysis yielded factor loadings from 0.51 to 0.99, and Cronbach alpha values were 0.86 for authoritative, 0.76 for authoritarian, and 0.67 for permissive scales¹⁶. These are external validation results, not coefficients calculated from the present sample. Their population overlaps only partly with the current age range, and equivalence of the administered version requires the original questionnaire and scoring record.

The outcome comprised the three categories recorded in the source tables: normal, suspect, and delay. These labels are retained for traceability but consistently identified as developmental screening categories. Standard KPSP interpretation counts affirmative responses on the age appropriate form; teaching guidance identifies scores of 9 to 10 as appropriate and 7 to 8 as doubtful⁴. Because the study's completed forms and domain derivation rule are not available, those published conventions are not asserted as verified study cutoffs. No separate validated speech and language score, clinical diagnostic interview, or diagnostic reference assessment is documented. The term delay in this report is therefore a recorded screening label and does not establish a speech disorder or developmental diagnosis.

For measurement context, Simangunsong and colleagues compared KPSP with Denver II in 182 children aged 3 to 60 months. Overall sensitivity was 68.8%, specificity 86.6%, and accuracy 81.9%; sensitivity was lower in the older age group than among children aged 3 to 24 months¹⁷. Both instruments were developmental screening tools, so agreement with Denver II should not be interpreted as confirmation of a language diagnosis. The evidence supports using KPSP within a screening process that includes further

assessment when needed. Study specific examiner training, administration procedures, and reliability coefficients cannot be inferred from the external validation study.

Data Analysis Technique

Frequencies and percentages summarize characteristics and the two main variables. Percentages for Tables 1 and 2 use N = 260. In Table 3, percentages for normal, suspect, and delay use the parenting group denominator; the total column uses N = 260. The original analysis used SPSS version 26 and a significance threshold of 0.05. The revised statistical verification recalculated Pearson chi square from the nine published cells, without changing any participant count. Degrees of freedom were $(3 - 1) \times (3 - 1) = 4$, and expected counts were examined before interpreting the conventional test¹⁸.

Cramér's V was calculated as $\sqrt{\{\chi^2 / [N \times \min(r - 1, c - 1)]\}}$, where r and c are the numbers of rows and columns. An approximate 95% confidence interval was obtained by inversion of the noncentral chi square distribution and transformation of its noncentrality bounds. Category specific exploratory odds ratios compare suspect versus normal and delay versus normal, with authoritative parenting as the reference group. Each ratio is the cross product of the relevant four cells; approximate 95% intervals exponentiate the log ratio plus or minus 1.96 times the square root of the sum of reciprocal cell counts. Reporting includes effect estimates and uncertainty rather than relying only on statistical significance^{19,20}.

The aggregate tables support these crude calculations but do not link maternal age, education, employment, child age, sex, or cluster membership to each dyad's outcome. A multinomial model adjusted for these covariates, survey weights, or clustering cannot be estimated from marginal totals alone.

Therefore, the estimates are unadjusted exploratory associations. Their p values and confidence intervals assume independent observations and do not include a cluster correction. Survey methodology demonstrates that clustering may change the reference distribution and precision of a conventional chi square test²¹. No adjusted effect, independent predictor, or causal contribution is claimed. The category contrasts are descriptive follow up estimates rather than prespecified confirmatory comparisons.

Ethical Consideration

Ethical approval was obtained from the Stikesmi Ethics Committee, Sukabumi College of Health Sciences, under certificate 001739/KEP STIKES SUKABUMI/2026. Mothers provided informed consent before

participation, and participant information was kept confidential. The publication presents aggregated counts and does not identify participating mothers or children.

Result

Karakteristik Responden

The analyzed sample contained 260 mother and child dyads. Children aged 2 years formed the largest age group (80; 30.8%), followed by those aged 3 years (66; 25.4%), 4 years (59; 22.7%), and 5 years (55; 21.2%). There were 136 boys (52.3%) and 124 girls (47.7%). Among mothers, 127 (48.8%) were aged 31 to 40 years, 132 (50.8%) had completed high school, and 184 (70.8%) were not working. Table 1 reports all recorded demographic categories.

Table 1. Maternal and child characteristics (N = 260)

Variable	Category	n	%
Child age	2 years	80	30.8
	3 years	66	25.4
	4 years	59	22.7
	5 years	55	21.2
Child sex	Male	136	52.3
	Female	124	47.7
Maternal age	21 to 30 years	99	38.1
	31 to 40 years	127	48.8
	41 to 50 years	34	13.1
Maternal education	Elementary school	30	11.5
	Junior high school	50	19.2
	High school	132	50.8
	College	48	18.5
Maternal employment	Working	76	29.2
	Not working	184	70.8

Source: Primary data, 2026. Percentages use N = 260 and may not sum to exactly 100% because of rounding.

Authoritative parenting was recorded for 129 mothers (49.6%), authoritarian parenting for 63 (24.2%), and permissive parenting for 68 (26.2%). Developmental screening was recorded as normal for 176 children (67.7%),

suspect for 63 (24.2%), and delay for 21 (8.1%). Thus, 84 children (32.3%) were recorded in a category other than normal. Table 2 presents these distributions separately. These proportions describe the study sample and are

not estimates of diagnosed speech disorder in the health center population.

Table 2. Parenting styles and recorded developmental screening categories (N = 260)

Variable	Recorded category	n	%
Parenting style	Authoritative	129	49.6
	Authoritarian	63	24.2
	Permissive	68	26.2
Developmental screening	Normal	176	67.7
	Suspect	63	24.2
	Delay	21	8.1

Source: Primary data, 2026. Authoritative corresponds to the original democratic label. Normal, suspect, and delay are recorded screening categories, not confirmed language diagnoses.

Table 3 gives the nine observed cells. In the authoritative group, 100 of 129 children (77.5%) were in the normal category, 20 (15.5%) in suspect, and 9 (7.0%) in delay. Corresponding counts in the authoritarian group were 35 of 63 (55.6%), 26 (41.3%), and 2 (3.2%). In the permissive group, counts were 41 of 68 (60.3%), 17 (25.0%), and 10 (14.7%). All row totals and column totals agree with Table 2.

The conventional Pearson calculation yielded $\chi^2 = 21.148$, $df = 4$, and $p = 0.000296$, reported as $p < 0.001$. Expected cell counts ranged from 5.088 to 87.323; none was below 5. Cramér's V was 0.202, with an approximate 95% confidence interval of 0.095 to 0.275 under the independent observation calculation. The statistic describes the overall association without identifying a uniform progression across parenting categories. Its inferential scope remains the unadjusted analysis without cluster correction.

Table 3. Parenting style and recorded developmental screening category

Parenting style	Normal n (%)	Suspect n (%)	Delay n (%)	Total n (%)
Authoritative	100 (77.5)	20 (15.5)	9 (7.0)	129 (49.6)
Authoritarian	35 (55.6)	26 (41.3)	2 (3.2)	63 (24.2)
Permissive	41 (60.3)	17 (25.0)	10 (14.7)	68 (26.2)
Total	176 (67.7)	63 (24.2)	21 (8.1)	260 (100.0)

Source: Primary data, 2026. Outcome percentages use each parenting group total; percentages in the total column use $N = 260$. Pearson $\chi^2(4) = 21.148$, $p < 0.001$; Cramér's $V = 0.202$ (approximate 95% CI 0.095 to 0.275). Expected cells, in row order: 87.323, 31.258, 10.419; 42.646, 15.265, 5.088; 46.031, 16.477, 5.492. Inference assumes independent observations and is not adjusted for sampling clusters.

Table 4 reports exploratory crude category contrasts. Compared with authoritative parenting, the authoritarian group had an odds ratio of 3.71 (95% CI 1.85 to 7.47) for suspect versus normal, and 0.63 (95% CI 0.13 to 3.08) for delay versus normal. The corresponding

ratios for permissive parenting were 2.07 (95% CI 0.99 to 4.35) and 2.71 (95% CI 1.03 to 7.16). These are ratios of category odds rather than incident risk ratios; they are not adjusted for covariates or clusters.

Table 4. Exploratory crude odds ratios for screening category contrasts

Parenting comparison	Outcome contrast	OR	Approximate 95% CI
Authoritarian versus authoritative	Suspect versus normal	3.71	1.85 to 7.47
Authoritarian versus authoritative	Delay versus normal	0.63	0.13 to 3.08
Permissive versus authoritative	Suspect versus normal	2.07	0.99 to 4.35
Permissive versus authoritative	Delay versus normal	2.71	1.03 to 7.16

Calculated from Table 3. OR: odds ratio; CI: confidence interval. Intervals use the log odds approximation, assume independent observations, and do not account for clustering or multiple comparisons. Small cell counts, particularly two children in the authoritarian delay category, affect precision.

Figure 1 displays the distribution of the three screening categories within each parenting group. Each bar totals 100%, and group sample sizes are shown explicitly. The figure preserves the distinction between suspect and delay: the largest suspect proportion occurs

in the authoritarian group, whereas the largest delay proportion occurs in the permissive group. The graphic visualizes the observations in Table 3 and does not imply an ordered scale of parenting effectiveness.

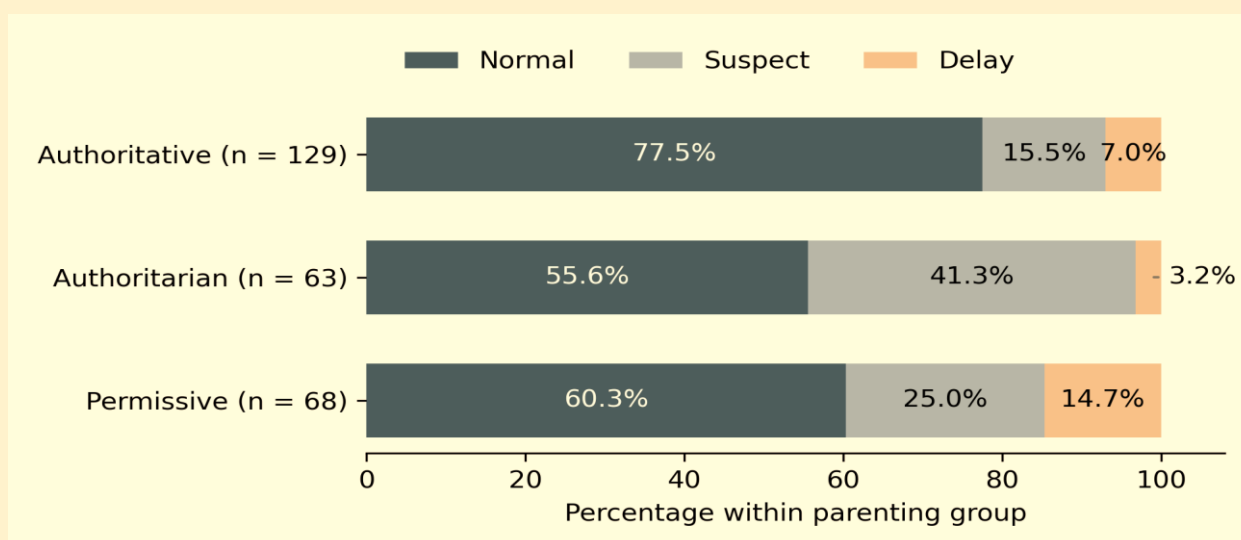


Figure 1. Recorded developmental screening categories by parenting style. Bars show percentages within each group; categories are screening labels rather than confirmed language diagnoses.

The authoritative group had the highest observed normal proportion, the authoritarian group the highest suspect proportion and the lowest delay proportion, and the permissive group the highest delay proportion. The overall contingency table showed an unadjusted association under the conventional Pearson test. The pattern varied by outcome category and did not establish one parenting style as uniformly superior. The study findings concern recorded developmental screening categories,

with no diagnostic, longitudinal, or adjusted causal result.

Discussion

The distribution of developmental screening categories differed across the three parenting groups. Authoritative parenting was accompanied by more normal classifications, but the two other groups differed in the type of concern recorded. Authoritarian parenting had a large suspect proportion and only two delay classifications; permissive parenting had a

larger delay proportion. The overall association therefore represents a difference in distributions rather than a simple hierarchy. Retaining all three categories avoids treating suspect and delay as interchangeable. The observations are compatible with a need for individualized developmental assessment, but they do not identify whether parenting preceded the child's developmental findings.

The exploratory contrasts clarify that pattern. The authoritarian versus authoritative contrast was most pronounced for suspect relative to normal. Its delay contrast had a wide interval containing one, so the low observed delay proportion does not establish a protective effect. The permissive delay contrast was elevated in the conventional calculation, but its uncertainty, the small number of delay classifications, and the absence of cluster and confounder adjustment prevent an independent effect interpretation. The overall Cramér's V summarizes association strength across the table; it is not the percentage of developmental delay caused by parenting. These distinctions allow the clinical relevance of the observations to be discussed without assigning an unsupported mechanism to individual families.

A plausible developmental interpretation concerns opportunities for interaction. Parenting may shape how adults respond to children's gestures, questions, or attempts to communicate. However, a style classification is a summary of reported behavior and does not directly measure conversational turns, stimulation frequency, or the quality of verbal input. Those processes were not quantified in this study. Child characteristics may also influence parental behavior: a parent may become more directive when a child has difficulty understanding instructions, or may change expectations in response to a developmental concern. This reciprocal possibility is consistent with a cross sectional association and requires longitudinal evidence

before a direction of influence can be established.

Research on the quantity and quality of language input provides a more specific framework than broad claims about parenting style. Rowe's longitudinal study addressed how characteristics of speech directed to children relate to vocabulary development⁸. Romeo and colleagues examined the association between conversational experience and language related brain activity⁹. The present study used developmental screening categories and maternal style classifications, so it does not replicate those exposure or outcome measures. The comparison supports a hypothesis about interaction opportunities while preserving the difference between evidence about language input and evidence about a categorical parenting label.

Intervention literature provides stronger evidence for particular caregiving strategies than this observational table can provide for the effectiveness of a style. Roberts and Kaiser's meta analysis examined language interventions implemented by parents²², and a later synthesis by Roberts and colleagues reviewed parent training across young children with or at risk of language impairment²³. Their evidence concerns instruction in defined strategies, not a retrospective assignment of intervention benefit to authoritative parenting in the present sample. A randomized trial by Roberts and Kaiser found improvement in receptive language following caregiver instruction but no significant benefit on its broad expressive language outcome²⁴. This variation shows why language outcomes should be specified rather than combined into a general claim that every aspect improves.

The broader evidence also supports attention to context. Jeong and colleagues synthesized parenting interventions promoting development during the first three years and reported benefits across several developmental

domains²⁵. WHO guidance recommends responsive care and opportunities for early learning during that period²⁶. These findings are relevant to caregiver support, although children aged 4 and 5 years in the present study fall outside the principal age range of those sources. Counseling should therefore use developmentally appropriate activities and should avoid treating a single set of expectations as suitable for all ages. The screening category records the need for assessment; it does not reveal the family's access to resources, the child's diagnostic profile, or the availability of therapeutic services.

The articles offer complementary Indonesian context. Suarayasa and colleagues' nonsignificant parenting and stunting association¹⁰ demonstrates that parenting findings can differ by health outcome and setting. Putri's review places caregiving alongside nutritional and economic factors¹¹, supporting a wider assessment of family circumstances without assuming that these variables were measured here. Adelia and colleagues evaluated an educational format that improved parental knowledge of cognitive stimulation¹³. The present study did not test a video, booklet, or knowledge outcome, but their findings support considering accessible educational materials when planning counseling. Nayoan's hearing screening report¹² illustrates why delayed speech should prompt attention to hearing and developmental conditions rather than being attributed solely to parenting.

Primary care teams can use the observed screening distribution to plan opportunities for caregivers to discuss development. Normal classifications should be communicated alongside continuing surveillance, while suspect or delay classifications call for consideration of the relevant tasks, age form, caregiver concerns, and clinical findings. When

language concerns are present, a fuller assessment should distinguish comprehension, expression, speech sound production, hearing, and participation. These are clinical recommendations drawn from developmental surveillance guidance³ and differential assessment literature^{1,12}, not evidence that a diagnostic pathway or referral outcome was measured in this study. Counseling can be offered while appropriate assessment proceeds.

Caregiver counseling should focus on observable practices that families can use during daily routines: responding to the child's communication attempts, allowing time for a response, sharing books or play, and using language appropriate to the child's abilities. Specific activities should be demonstrated and adapted to the caregiver's priorities rather than delivered as a judgment about a family's parenting category. Implementation research by Ahun and colleagues describes the variation in settings, delivery formats, and other characteristics of parenting programs²⁷. It supports documenting how an intervention is delivered and evaluated rather than assuming that a convenient delivery format will improve language. The present data do not establish an optimal dose, delivery platform, or counseling schedule.

Developmental surveillance should also be distinguished from evidence for universal screening of asymptomatic children for a particular disorder. The 2024 US Preventive Services Task Force statement found insufficient evidence to assess the balance of benefits and harms of speech and language screening in children aged 5 years or younger without signs or symptoms²⁸. That statement does not remove the need to assess an expressed concern or an abnormal developmental finding. In the present context, the appropriate implication is to explain what the KPSP category means, consider the individual child, and follow the local clinical assessment

pathway. The study cannot determine whether a screening program reduces diagnosed language disorders or improves later school performance.

The study includes 260 dyads from a defined primary care service area and reports demographic, parenting, and screening distributions with consistent denominators. The complete 3×3 table permits transparent recalculation and shows how suspect and delay categories differ between groups. The cross sectional design does not establish temporality, and maternal reports may be affected by recall or social desirability. KPSP is a broad developmental prescreening instrument, and the recorded categories cannot be treated as confirmed language diagnoses. The PSDQ version, classification rule, and KPSP domain derivation require verification against the original instruments. External validation coefficients do not replace validation of the version administered here.

The single health center setting restricts generalization to other populations, and the reported cluster sampling introduces a further analytical consideration. The conventional calculations do not account for dependence within clusters or unequal selection probabilities; their confidence intervals and p values may differ from design based estimates. Maternal age, education, employment, child age, and sex may confound the observed association, but marginal totals cannot support a covariate adjusted model. Other potential factors, including hearing status, family history, nutritional status, stimulation practices, and access to developmental services, were not analyzed. The low number of delay classifications in the authoritarian group further limits precision. These constraints define the study as a local exploratory association rather than an independent risk model.

A subsequent analysis should use linked participant records to verify the scoring and

evaluate the three outcome categories with a justified multinomial approach, incorporating maternal age, education, employment, child age, and sex. Cluster identifiers and selection information should be used to account for the sampling design; uncertainty and sparse cell behavior require explicit assessment. Prospective work should measure specific caregiver interaction practices alongside an age appropriate language assessment and hearing evaluation. Repeated developmental observations would help distinguish transient screening concerns from persistent difficulties and examine changes in caregiving over time. These steps would test the mechanisms suggested by the present distribution rather than assume them.

Future counseling evaluations should define their primary outcome before delivery, distinguish knowledge gains from changes in caregiver behavior and child communication, and document adherence and referral completion. Jeong, Pitchik, and Fink's review examined how parenting intervention effects vary over different follow up periods²⁹, supporting assessment beyond an immediate educational response. In practice, the present findings support offering developmental assessment when concerns arise and providing caregivers with concrete, age appropriate communication activities. Such support should be available across parenting groups, because every group included children with suspect or delay screening findings.

Conclusion

Among 260 dyads at Karang Tengah Community Health Center, parenting style was associated with the distribution of recorded developmental screening categories in an unadjusted conventional analysis. Authoritative parenting had the highest normal proportion; authoritarian parenting had the highest suspect proportion; permissive

parenting had the highest delay proportion. The findings support individualized developmental assessment and caregiver counseling. They do not establish a diagnosis of speech delay, an independent parenting effect, or a causal ordering of parenting styles.

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References

1. Bishop DVM, Snowling MJ, Thompson PA, Greenhalgh T; CATALISE 2 Consortium. Phase 2 of CATALISE: a multinational and multidisciplinary Delphi consensus study of problems with language development: terminology. *J Child Psychol Psychiatry*. 2017;58(10):1068–1080. doi:10.1111/jcpp.12721
2. Norbury CF, Gooch D, Wray C, et al. The impact of nonverbal ability on prevalence and clinical presentation of language disorder: evidence from a population study. *J Child Psychol Psychiatry*. 2016;57(11):1247–1257. doi:10.1111/jcpp.12573
3. Lipkin PH, Macias MM; Council on Children With Disabilities; Section on Developmental and Behavioral Pediatrics. Promoting optimal development: identifying infants and young children with developmental disorders through developmental surveillance and screening. *Pediatrics*. 2020;145(1):e20193449. doi:10.1542/peds.2019-3449
4. Maddeppungeng M. Buku Panduan Kuesioner Pra Skrining Perkembangan (KPSP). Faculty of Medicine, Universitas Hasanuddin; 2018. <https://kedokteran.med.unhas.ac.id/wp-content/uploads/2018/03/KUESIONER-PRA-SKRINING-PERKEMBANGAN-KPSP.pdf>
5. Baumrind D. Effects of authoritative parental control on child behavior. *Child Dev*. 1966;37(4):887–907. doi:10.2307/1126611
6. Robinson CC, Mandleco B, Olsen SF, Hart CH. Authoritative, authoritarian, and permissive parenting practices: development of a new measure. *Psychol Rep*. 1995;77(3):819–830. doi:10.2466/pr0.1995.77.3.819
7. Feldman JS, Zhang Y, Miller EB, et al. Parenting styles from infancy to toddlerhood in Black/African American and Latina mothers with low incomes. *Early Child Res Q*. 2025;71:81–91. doi:10.1016/j.ecresq.2024.12.003
8. Rowe ML. A longitudinal investigation of the role of quantity and quality of child directed speech in vocabulary development. *Child Dev*. 2012;83(5):1762–1774. doi:10.1111/j.1467-8624.2012.01805.x
9. Romeo RR, Leonard JA, Robinson ST, et al. Beyond the 30 million word gap: children's conversational exposure is associated with language related brain function. *Psychol Sci*. 2018;29(5):700–710. doi:10.1177/0956797617742725

10. Suarayasa K, Bangkele E, Sumarni, Miranti, Nurjannah S, Tobanta BA. The influence of parenting patterns on stunting incidence among toddlers at Puskesmas Pantoloan, Palu City. *Healthy Tadulako J.* 2025;11(2):162–168. doi:10.22487/htj.v11i2.1462
11. Putri AR. Aspek pola asuh, pola makan, dan pendapatan keluarga pada kejadian stunting. *Healthy Tadulako J.* 2020;6(1):7–12. doi:10.22487/htj.v6i1.96
12. Nayoan CR. Skrining pendengaran pada anak dengan sindroma autisme. *Healthy Tadulako J.* 2018;4(2):1–11. doi:10.22487/htj.v4i2.65
13. Adelia D, Indarwati F, Rahmah R, Suminar IT. The effect of educational interventions through animated video and booklet on parents' knowledge regarding cognitive stimulation in preschool aged children. *Healthy Tadulako J.* 2026;12(3):444–454. doi:10.22487/atvb7n86
14. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *PLoS Med.* 2007;4(10):e296. doi:10.1371/journal.pmed.0040296
15. Fahiroh SA, Tairas MMW, Retnowati S. Validation of Parenting Styles and Dimensions Questionnaire (PSDQ) on adolescents. *J Educ Health Community Psychol.* 2019;8(2):177–195. doi:10.12928/jehcp.v8i2.12958
16. Rahmawati A, Fajrianthi F, Purwono U. The psychometric properties of parenting styles and dimensions questionnaire short form in Indonesia. *Int J Eval Res Educ.* 2022;11(1):42–50. doi:10.11591/ijere.v11i1.21650
17. Simangunsong SW, Machfudz S, Sitaresmi MN. Accuracy of the Indonesian child development prescreening questionnaire. *Paediatr Indones.* 2012;52(1):6–9. doi:10.14238/pi52.1.2012.6-9
18. McHugh ML. The chi square test of independence. *Biochem Med (Zagreb).* 2013;23(2):143–149. doi:10.11613/BM.2013.018
19. Lang TA, Altman DG. Basic statistical reporting for articles published in biomedical journals: the Statistical Analyses and Methods in the Published Literature or the SAMPL guidelines. *Int J Nurs Stud.* 2015;52(1):5–9. doi:10.1016/j.ijnurstu.2014.09.006
20. Steiger JH. Beyond the F test: effect size confidence intervals and tests of close fit in the analysis of variance and contrast analysis. *Psychol Methods.* 2004;9(2):164–182. doi:10.1037/1082-989X.9.2.164
21. Rao JNK, Scott AJ. The analysis of categorical data from complex sample surveys: chi squared tests for goodness of fit and independence in two way tables. *J Am Stat Assoc.* 1981;76(374):221–230. doi:10.1080/01621459.1981.10477633
22. Roberts MY, Kaiser AP. The effectiveness of parent implemented language interventions: a meta analysis. *Am J Speech Lang Pathol.* 2011;20(3):180–199. doi:10.1044/1058-0360(2011/10-0055)
23. Roberts MY, Curtis PR, Sone BJ, Hampton LH. Association of parent training with child language development: a systematic review and meta analysis. *JAMA Pediatr.* 2019;173(7):671–680. doi:10.1001/jamapediatrics.2019.1197

24. Roberts MY, Kaiser AP. Early intervention for toddlers with language delays: a randomized controlled trial. *Pediatrics*. 2015;135(4):686–693.
doi:10.1542/peds.2014-2134
25. Jeong J, Franchett EE, Ramos de Oliveira CV, Rehmani K, Yousafzai AK. Parenting interventions to promote early child development in the first three years of life: a global systematic review and meta analysis. *PLoS Med*. 2021;18(5):e1003602.
doi:10.1371/journal.pmed.1003602
26. World Health Organization. Improving Early Childhood Development: WHO Guideline. World Health Organization; 2020.
<https://www.who.int/publications/i/item/97892400020986>
27. Ahun MN, Ali NB, Hentschel E, Jeong J, Franchett E, Yousafzai AK. A meta analytic review of the implementation characteristics in parenting interventions to promote early child development. *Ann N Y Acad Sci*. 2024;1533(1):99–144.
doi:10.1111/nyas.15110
28. US Preventive Services Task Force. Screening for speech and language delay and disorders in children: US Preventive Services Task Force recommendation statement. *JAMA*. 2024;331(4):329–334.
doi:10.1001/jama.2023.26952
29. Jeong J, Pitchik HO, Fink G. Short term, medium term and long term effects of early parenting interventions in low and middle income countries: a systematic review. *BMJ Glob Health*. 2021;6(3):e004067.
doi:10.1136/bmjgh-2020-004067

Conflict of Interest Statement

The author(s) declare no commercial, financial, or personal conflicts of interest related to this research. All authors approved the final manuscript and consented to its publication in *Healthy Tadulako Journal*.

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