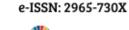






JOURNAL OF LIFESTYLE & SDG'S REVIEW



THE GLOBAL GOALS

SENSEMAKING FAMILY RESILIENCE FOR CHILDREN WITH CEREBRAL PALSY: REALIZING SDG 3 - HEALTH & WELL-BEING WHILE SUPPORTING SDG 10 - REDUCED INEQUALITIES AND SDG 4 - INCLUSIVE EDUCATION

Resman Muharul Tambunan 1

Veranus Sidharta²

Ganjar Wibowo ³

Des Hanafi 4

Tarsani⁵

ABSTRACT

Objective: This study investigates how parental sensemaking and parenting resilience relate to Child QoL and family communication in urban Indonesian families of children with CP, with SDG 3 - Health & Well-Being as the primary anchor and co-benefits for SDG 10 and SDG 4.

Theoretical Framework: We integrate sensemaking theory, meaning construction under uncertainty, parenting resilience, emotion regulation, role coordination, problem solving, family communication patterns, open, goal-oriented dialogue, and Child QoL as the proximal health/participation outcome. The framework specifies a meaning, capacity, and coordination pathway.

Method: A cross-sectional, theory-driven explanatory survey (N = 300 parents/guardians of children with CP, ages 7-15, Greater Jakarta) was analyzed using SmartPLS 4. Responses used 5-point Likert scales. Measurement validity (loadings/AVE, CR/α , HTMT) and structural paths (β , bootstrapped p-values) were assessed, alongside R^2 and Q^2 .

Results and Discussion: All hypothesized paths were significant: sensemaking, parenting resilience; sensemaking, Child QoL; sensemaking, family communication; parenting resilience, family communication; Child QoL, family communication (strongest). Explanatory power was modest yet prediction-oriented (family communication $R^2 = 0.137$). Findings support the proposition that meaning construction (sensemaking) and affective-organizational capacity (resilience) enable clearer, calmer, and more purposeful dialogue, while improvements in Child QoL most decisively enhance coordination across the home-school-clinic nexus.

Research Implications: Pair sensemaking-oriented psychoeducation with QoL-oriented supports therapy continuity, assistive devices, inclusive transport, and classroom accommodations to advance SDG 3, while reducing access gaps SDG 10 and strengthening inclusive participation SDG 4.

Originality/Value: The study offers an empirically grounded, SDG-aligned model demonstrating how everyday family processes operationalize sustainable caregiving practices that improve communication and health equity in CP care.

Keywords: sustainable family communication, parental sensemaking, parenting resilience, child Qol, Sustainable Development Goals (SDG).



THE GLOBAL GOALS

¹ Al Azhar University of Indonesia, Jakarta, Indonesia. E-mail: resman.muharul@uai.ac.id

² Bina Sarana Informatika, Jakarta, Indonesia. E-mail: veranus.vri@bsi.ac.id

³ Al Azhar University of Indonesia, Jakarta, Indonesia. E-mail: ganjar.wibowo@uai.ac.id

⁴ Al Azhar University of Indonesia, Jakarta, Indonesia. E-mail: des.hanafi@uai.ac.id

⁵ Al Azhar University of Indonesia, Jakarta, Indonesia. E-mail: tarsani@uai.ac.id





Received: Aug/1/2025 Accepted: Oct/1/2025

DOI: https://doi.org/10.47172/2965-730X.SDGsReview.v5.n09.pe07708



1 INTRODUCTION

Caring for a child with cerebral palsy (CP) in urban Indonesia entails persistent psychosocial and communicative demands that directly implicate the Sustainable Development Goals, primarily SDG 3 - Good Health & Well-Being, with reinforcing links to SDG 10 - Reduced Inequalities and SDG 4 - Inclusive Education (UNDP, 2025). Children with CP face multi-domain limitations that shape daily functioning and children's quality of life (Child QoL) (Rudebeck, 2020; Fluss & Lidzba, 2020; García-Galant et al., 2024; Mashaal, 2024; Kaur, 2024). Caregivers often experience elevated stress, depression, and role strain, which can erode family well-being and communication when supports are fragmented (Ramanandi et al., 2019; Glinac et al., 2023; Chen et al., 2025).

These strains are compounded by uneven access to continuous rehabilitation physiotherapy, occupational and speech therapy, assistive technologies, and disability-friendly transportation, classic health-system frictions situated within SDG 3. Beyond clinical access, families navigate stigma and environmental barriers that amplify inequities SDG 10, while schools frequently struggle to provide inclusive curricula, learning support, and accessible facilities SDG 4 (Pretorius & Steadman, 2018; Smith & Blamires, 2022; Guimarães et al., 2023; Peng & Lu, 2024; Shahali et al., 2024).

Within these constraints, parental sensemaking is the ongoing process of interpreting and assigning meaning to day-to-day caregiving functions as a cognitive backbone for aligning care routines, negotiating service pathways, and setting realistic goals across the home-school-clinic nexus (Weick, 1995; Zeni et al., 2016). Complementing this, family parenting resilience organizes emotion regulation, role coordination, and problem-solving scripts that sustain open, purposeful dialogue under uncertainty (Walsh, 2016; Whiting et al., 2019; Qiu et al., 2021). Sensemaking and resilience provide a theoretically grounded pathway to sustainable family communication central to improving Child QoL







and advancing SDG 3, with co-benefits for SDG 10 - social inclusion and SDG 4 - inclusive participation in learning.

Against this backdrop, the present study examines interrelationships among parental sensemaking, parenting resilience, Child QoL, and family communication in Greater Jakarta. By clarifying these links and identifying the strongest correlate of communication, the study offers actionable entry points for family-centered psychoeducation and QoL-oriented supports that can translate into healthier, more equitable, and more inclusive everyday practices in Indonesia's urban context (Koerner & Schrodt, 2014; Tambunan et al., 2023).

Accordingly, this study seeks to clarify how parental sensemaking and parenting resilience relate to Child QoL and family communication in urban Indonesia by (i) quantifying the associations among the four latent constructs, (ii) determining which construct sensemaking, resilience, or Child QoL emerges as the strongest predictor of family communication, and (iii) validating a parsimonious measurement and structural model using PLS-SEM to generate actionable implications for advancing SDG 3 - Health & Well-Being with cobenefits for SDG 10 - Reduced Inequalities and SDG 4 - Inclusive Education, through integrated, family-centred psychoeducation and QoL oriented supports across the home-school-clinic nexus.

This study aimed to examine the relationship between parental understanding, parenting resilience, Child QoL, and family communication in families of children with cerebral palsy living in Jabodetabek, as a representation of urban areas in Indonesia, with the following research questions:

- 1) How is parental sensemaking associated with parenting resilience in families of children with CP in Greater Jakarta?
- 2) How is parental sensemaking associated with the Child QoL?
- 3) How is parental sensemaking associated with family communication?
- 4) Is parenting resilience associated with family communication when considered alongside sensemaking?
- 5) Among sensemaking, parenting resilience, and Child QoL, which shows the strongest association with family communication in this urban Indonesian context?







2 THEORETICAL FRAMEWORK

Sensemaking is the ongoing social and cognitive process whereby actors interpret ambiguous cues, construct shared meanings, and stabilize action in uncertain environments (Weick, 1995). In the context of childhood disability, parents routinely face fragmented information, medical terms, therapy routines, transport and insurance constraints, and teacher expectations. Sensemaking provides the cognitive backbone that (i) frames problems, (ii) orders priorities, and (iii) sets realistic goals that are revisited as conditions evolve (Kramer, 2016; Hilten, 2019; Luna-Reyes et al., 2021; Wolbers, 2022; Brust et al., 2023).

Contemporary work extends sensemaking to ethically charged and highstakes contexts, emphasizing cue extraction, plausibility, and enactment of structures that channel (Zeni et al., 2016). In the context of family health, understanding helps parents transform diffuse stressors into manageable plans, such as language for symptoms, decision-making heuristics, checklists for therapy and school meetings, thereby reducing ambiguity and transaction costs in navigating the home-school-clinic relationship.

Family resilience refers to processes by which families withstand and rebound from adversity through belief systems, organizational patterns, and communication problem-solving (Macphee et al., 2015). Resilient processes in families of children with chronic conditions include emotion regulation, role negotiation, shared routines, and solution-focused talk that reduce escalation and sustain caregiving efficacy (Whiting et al., 2019). Quantitative studies in pediatric chronic illness show that resilience relates to caregiver adjustment and child outcomes when families adopt coherent coping repertoires and supportive patterns (Qiu et al., 2021). In CP, these processes are important because daily care, for example, transfers, feeding, and the use of assistive devices, is an intensive routine and requires teamwork of caregivers, siblings, teachers, and therapists (Martínez-Rodríguez et al., 2025). Resilience thus functions as a relational capability, organizing affect and roles so that plans derived from sensemaking are enactable in everyday life.

Based on Family Communication Patterns (Koerner & Schrodt, 2014), this







study views communication as a driver that translates cognitive sensemaking and resilience into coordinated action through therapy adherence, school collaboration, and help-seeking. Open, supportive, and goal-oriented dialogue facilitates: (i) a shared assessment of the child's needs; (ii) division of labor; (iii) negotiation with the school/clinic; and (iv) timely adaptation when plans fail. Conversely, ambiguous or conflict-avoidant talk increases stress reactivity and erodes adherence. Within this framework, communication is both an outcome of cognitive-affective processes and a mechanism that strengthens or dampens their impact on child and caregiver outcomes.

Child QoL reflects multi-domain functioning encompassing physical, cognitive, social, emotional, and participation. Families face fewer acute stressors when Child QoL improves through fewer crises, better communication, mobility, and more predictable school days. They can maintain calmer interactions and more stable routines. Empirically, as demonstrated in this study, Child QoL emerged as the strongest correlate of family communication, consistent with a feed-forward feedback loop where better functioning reduces conflict triggers and expands viable options, for example, therapy continuity, attendance, and inclusion. In the context of the SDGs, Child QoL reflects tangible progress on SDG 3 and enables shared benefits for SDG 10 and SDG 4.

Bringing these strands together, the framework posits a meaning, capacity, and coordination pathway: (i) sensemaking structures attention and goals cognitive order. (ii) Resilience supplies affective and organizational resources and relational capacity. (iii) Family communication coordinates tasks across contexts, an interactional mechanism. (iv) Child QoL both benefits from and facilitates this pathway by lowering acute strain and clarifying the effectiveness of routines. Thus, sensemaking is the input logic, resilience is the system buffer, communication is the transmission belt, and Child QoL is the proximal health outcome that feeds back into the system.

3 METHODOLOGY

This study employed a cross-sectional quantitative explanatory survey to test hypothesized associations among parental sensemaking, parenting







resilience, Child QoL, and family communication, rather than causal effects. An explanatory approach is appropriate when researchers examine theory-driven hypotheses involving latent variables, e.g., sensemaking, resilience, Child QoL, and communication grounded in prior scholarship (Creswell, 2018).

In this context, sensemaking is understood as continuously constructing meaning for complex situations regarding the care needs of children with CP, so it is relevant to test its influence on family behavior and outcomes (Weick, 1995). This framework aligns with family communication studies that emphasize the importance of open and supportive communication patterns as an explanatory mechanism for the relationship between variables in the family system (Koerner & Schrodt, 2014).

3.1 PARTICIPANTS

The study population comprised parents or primary guardians of children with CP aged 7-15 years residing in Greater Jakarta (Jakarta, Bogor, Depok, Tangerang, and Bekasi), Indonesia. This age band corresponds to the elementary-junior high school phase, when support for communication, school participation, and social adaptation is most salient for children with CP (Novak et al., 2020). We recruited N = 300 respondents using purposive sampling based on the following inclusion criteria: (1) biological parent or primary guardian of a child with CP; (2) child aged 7-15 years; (3) domicile in Greater Jakarta; and (4) willingness to complete the questionnaire.

The sample size (N = 300) was deemed adequate for Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 4.0, which is robust for complex models and does not require strict distributional assumptions; current recommendations prioritize statistical power and model complexity over "10-times rule" heuristics (Hair et al., 2021). We administered an indicator-based questionnaire for each latent construct. Responses used a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), which is easy for respondents to understand and sufficiently sensitive for capturing parents' attitudes, perceptions, and experiences. Survey-methods literature indicates that 5-7







point Likert formats provide good reliability and discrimination for attitudinal measurement (Joshi et al., 2015).

3.2 DATA ANALYSIS

Analyses proceeded in two stages. First (preliminary screening), we applied traditional multivariate procedures, including multiple linear regression and classical assumption checks, to evaluate data quality and inspect initial association patterns (Tabachnick & Fidell, 2019). Second (hypothesis testing), we estimated the main conceptual model using PLS-SEM, appropriate for models with multiple latent constructs and indicators, a prediction orientation, and potential non-normality.

For the measurement (outer) model, we assessed convergent validity (indicator loadings and AVE), reliability (composite reliability and Cronbach's alpha), and discriminant validity using the HTMT criterion (Henseler et al., 2015). For the structural (inner) model, we estimated standardized path coefficients and their significance via bootstrapping, and reported explanatory power (R²) and predictive relevance (Q²) to judge overall model quality and usefulness.

Table 1 Target Population and Study Sample

Component	Target Population	Study Sample
Subjects	Parents of children with CP	300 parents
Region	Greater Jakarta (Jabodetabek)	Greater Jakarta (Jabodetabek)
Unit of analysis	Individual	Individual

4 RESULTS AND DISCUSSIONS

The study found that most parents of children with CP were in the productive age range of 40-49 years (27.7% aged 40-44; 20.3% aged 45-49). This distribution suggests that respondents are mainly in a mature life stage, experienced, and bearing substantial family responsibilities. However, they also face significant demands in caring for a child with special needs. In terms of education, over half had completed senior high school (55.3%), followed by







bachelor's degree holders (22.0%). This profile indicates that most parents have secondary-level education, which may shape how they process medical information and adopt parenting-resilience strategies. Nevertheless, overall knowledge about CP development remains moderate, underscoring the need for more comprehensive information support from health professionals, inclusive schools, and community networks.

4.1 DESCRIPTIVE FACTOR LOADING ANALYSIS

Factor loading analysis was conducted to ensure that each indicator used in this study accurately represented the latent constructs measured: parental sensemaking, parenting resilience, Child Quality of Life (Child QoL), and family communication. This analytical step was crucial to determine how well each indicator captured the theoretical concept it was designed to measure. By doing so, the analysis provided the empirical foundation for assessing convergent validity, internal consistency, and reliability within the PLS-SEM framework.

Overall, the results of the factor loading analysis revealed that all indicators had strong loading values ranging from 0.715 to 0.962. These values exceeded the commonly accepted threshold of 0.70, confirming that the indicators significantly and consistently reflected the constructs they were intended to measure. This finding indicates that the measurement model possesses good convergent validity and is robust enough for further inferential analysis.

The construct of parental sensemaking was measured by four indicators, each showing loading values between 0.808 and 0.922. These results suggest that parents' ability to interpret and give meaning to the caregiving situation of a child with cerebral palsy is clearly captured by the indicators. The higher the loading value, the stronger the indicator's ability to represent how parents make sense of challenges, manage uncertainty, and construct structured decision-making routines. Meanwhile, parenting resilience was measured by two indicators with loadings of 0.835 and 0.962, indicating that the ability of parents to remain emotionally stable, organized, and adaptive in daily caregiving situations is well represented.







The Child QoL construct also showed high loading values across all indicators, demonstrating that the dimensions of physical health, emotional stability, social interaction, and participation were consistently measured. Parents who perceive higher quality of life in their children tend to report lower stress levels and more positive family interactions. In this sense, Child QoL functions not only as an outcome variable but also as a reinforcing factor that improves communication patterns within the family system.

Similarly, family communication demonstrated strong consistency across all of its indicators, suggesting that open dialogue, emotional support, and coordinated role distribution within families were reliably captured by the instrument. Families that communicate in an open, honest, and goal-oriented manner are more likely to respond effectively to the complex caregiving demands associated with cerebral palsy.

 Table 2

 Relationship between variables and statistical values

Relationship between variables	Path Coefficient (B)	p- value	Interpretation
Sensemaking → Parenting Resilience	0.173	0.002	Cognitive meaning boosts emotional stability
Sensemaking → Child QoL	0.167	0.010	Improves daily care structure
Sensemaking → Family Communication	0.146	0.012	Encourages open dialogue
Parenting Resilience → Family Communication	0.146	0.020	Supports coordination
Child QoL → Family Communication	0.234	<0.001	Strongest, shows health drives harmony

R² Parenting Resilience = 0.030

Table 3 summarizes the strength and significance of the relationships among the primary constructs. All paths exhibited positive and statistically significant effects (p < 0.05), indicating that the relationships were not random but empirically supported. The strongest effect was found between Child QoL and family communication (β = 0.234), suggesting that when the child's health and well-being improve, family interactions become more open, calm, and coordinated. Conversely, sensemaking acts as a cognitive foundation that





 R^2 Child QoL = 0.028

R² Family Communication = 0.137



enhances parental resilience and promotes more constructive communication behaviors.

From the perspective of model explanatory power (R2), parenting resilience has an R² value of 0.030, Child QoL has 0.028, and family communication has 0.137. These results show that the combination of sensemaking, resilience, and Child QoL accounts for approximately 13.7% of the variance in family communication. Although this is considered a moderate level of explanatory power, it is consistent with social and behavioral research where numerous external factors contribute to family dynamics. These findings emphasize that parental sensemaking acts as a cognitive mechanism to interpret uncertainty, resilience serves as an affective and organizational buffer, and Child QoL represents the most tangible outcome that directly influences family communication quality.

Taken together, the results reinforce the theoretical model positioning sensemaking as the cognitive anchor, resilience as the emotional and organizational capacity, family communication as the coordinating mechanism, and Child QoL as the outcome variable that feeds back into the family system. This descriptive interpretation highlights that improving family communication requires not only skill-building but also fostering parents' interpretive and emotional capacities alongside improvements in the child's actual quality of life.

4.2 INDICATOR VALIDITY, DIRECT PATHS, AND EXPLANATORY POWER

Following the descriptive analysis of factor loadings, the next stage of analysis focused on testing the strength of direct paths and the explanatory power of the PLS-SEM model. This step was designed to validate how the observed indicators and their structural relationships interact to form a coherent predictive model of family communication within the context of caring for children with cerebral palsy.

Indicator validity (outer model). All indicators showed high loadings (0.715-0.962), exceeding the 0.70 threshold and supporting convergent validity. The sensemaking construct was captured by four indicators (0.808-0.922), while







parenting resilience was measured by two indicators (0.835 and 0.962). The Child QoL and family communication constructs also showed high loadings across their indicators, indicating consistent measurement direct paths (inner model).

PLS-SEM results showed positive and statistically significant direct effects: sensemaking on parenting resilience (β = 0.173), sensemaking on Child QoL (β = 0.167), and sensemaking on family communication (β = 0.146). Parenting resilience also predicted family communication (β = 0.146). The strongest path was from Child QoL to family communication (β = 0.234). All paths were significant in bootstrapping (β < 0.05; strongest effect β < 0.001). Explanatory power (β 2).

The model showed moderate explanatory power: parenting resilience R^2 = 0.030, Child QoL R^2 = 0.028, and family communication R^2 = 0.137. These values indicate a parsimonious specification, with Child QoL contributing most strongly to variation in family communication. Sensemaking serves as a cognitive foundation supporting adaptive parenting and more open communication. In contrast, tangible improvements in children's quality of life are the most decisive driver for strengthening family communication. These results suggest integrating sensemaking-oriented programs with concrete supports such as health, inclusive education, and socioeconomic services to optimize communication outcomes.

After identifying the indicator strength and direction of the relationships, we tested the significance of the direct paths through bootstrapping. The diagram in Figure 2 displays the bootstrap p-values for the PLS-SEM models comprising sensemaking, parenting resilience, Child QoL, and family communication. Numbers on the paths indicate p-values; numbers within blue circles indicate R^2 . All indicator loadings were significant (p < 0.001), confirming convergent validity and reliability.

The essential structural paths were as follows: sensemaking to parenting resilience (p = 0.002), sensemaking to Child QoL (p = 0.010), sensemaking to family communication (p = 0.012), parenting resilience to family communication (p = 0.020), and Child QoL to family communication (p < 0.001;



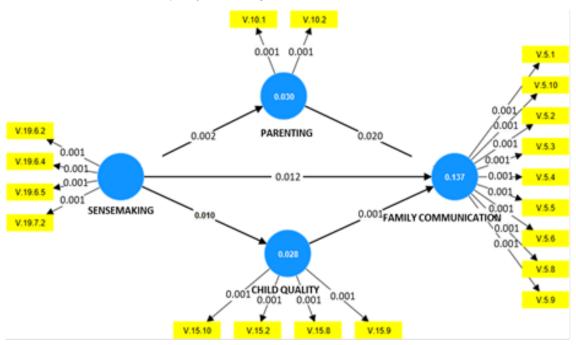


strongest). The R² values were 0.030 (parenting resilience), 0.028 (Child QoL), and 0.137 (family communication), indicating modest explanatory power.

Each indicator measuring the latent construct was tested through bootstrapping, and all indicator paths showed a p-value < 0.001, meaning significant at the 99% confidence level. For example, indicators V.19.6.2 to V.19.7.2 were significant in measuring sensemaking, V.10.1 and V.10.2 were significant for parenting resilience, V.15.10 to V.15.9 were significant for Child QoL, and V.5.1 to V.5.10 were significant for family communication. These results confirm that all indicators significantly contribute to explaining their respective constructs, so this model has good convergent validity and reliability. Thus, the measuring instrument used in this study can be confirmed to be valid for measuring the concepts studied.

Figure 2

Communication model for parenting resilient children with CP



Bootstrapping results showed that all structural paths between latent variables were significant. The path from sensemaking to parenting resilience (p = 0.002) indicated that better parental meaning-making increased parenting resilience. The path from sensemaking to Child QoL (p = 0.010) indicated that the meaning-making process also impacted children's perceived quality of life.





Although relatively small, the direct path from sensemaking to family communication (p = 0.012) remained significant. Furthermore, the path from parenting resilience to family communication (p = 0.020) showed that parenting resilience influenced the family's communication quality. Finally, the path from Child QoL to family communication (p < 0.001) was the most significant, confirming that children's conditions and Child QoL dominate family communication.

The R² value in this model indicates the level of explained variation. Parenting resilience has an R² of 0.030, meaning only 3% of the variance in parenting resilience is explained by sensemaking. Child QoL has an R² of 0.028, or approximately 2.8% of the variance is explained by sensemaking. Meanwhile, family communication has an R² of 0.137, meaning 13.7% of the variance is explained by the combination of sensemaking, parenting resilience, and Child QoL. While this figure is moderate, it still provides evidence that the model can explain some variation in family communication, even though other factors outside the model may also contribute.

Overall, the bootstrapping results confirm that all the main relationships in this research model are significant. The strongest path is from Child QoL to family communication, highlighting the importance of children's conditions in shaping family interactions. Sensemaking plays a direct role in both parenting resilience and Child QoL. This confirms that parents' ability to give positive meaning to their parenting resilience experiences helps them become more resilient and improves their children's perceived quality of life, ultimately strengthening family communication. Thus, bootstrapping provides solid empirical evidence that cognitive, psychosocial, and Child QoL processes are closely interconnected in determining the dynamics of family communication in families with children with cerebral palsy.

PLS-SEM results showed that all hypotheses were statistically supported. First, H1 was confirmed: parental sensemaking was positively associated with parenting resilience (B = 0.173, p = 0.002). This means that parents' ability to interpret and give meaning to daily challenges is associated with increased resilience in parenting. Second, H2 was supported: sensemaking was positively associated with Child QoL ($\beta = 0.167$, p = 0.010), indicating that clarity in







parental interpretation is associated with more consistent care routines, more appropriate access to services, and better perceptions of children's well-being. Third, H3 was also confirmed: sensemaking was positively associated with family communication ($\beta = 0.146$, p = 0.012); families framing problems meaningfully tend to engage in more open and purposeful dialogue.

Furthermore, H4 was supported: parenting resilience was positively associated with family communication (β = 0.146, p = 0.020). Higher resilience was associated with better role coordination, more stable emotional regulation, and constructive communication scripts. Finally, H5 was the most decisive influence in the model: Child QoL was positively associated with family communication (β = 0.234, p < 0.001). As children's functioning and well-being improved, crises decreased, and family interactions became calmer, clearer, and more manageable.

Overall, the R² values indicated moderate explanatory power: 0.030 for parenting resilience, 0.028 for Child QoL, and 0.137 for family communication. This confirms that sensemaking is a consistent cognitive foundation for increased resilience and communication. At the same time, Child QoL is the most crucial lever for strengthening family communication in caring for children with CP.

5 CONCLUSION

This study confirms that parental sensemaking and parenting resilience are interdependent cognitive and emotional capacities that collectively shape the quality of family communication in caring for children CP within Indonesia's urban context. The empirical model demonstrates significant and positive paths among all key variables, showing that sensemaking directly enhances parenting resilience, improves Child QoL, and strengthens family communication. Meanwhile, Child QoL emerges as the most decisive predictor of communication quality, highlighting that when the child's physical and psychosocial functioning improves, everyday dialogue becomes calmer, more constructive, and purposedriven. The model explains 13.7 % of the variance in family communication (R² = 0.137), an acceptable figure for a prediction-oriented PLS-SEM design,





suggesting that while external factors remain influential, these four constructs form a robust explanatory core.

The data reveal that structured meaning-making helps parents transform uncertainty into adaptive plans linking home routines, school engagement, and clinical follow-up, while resilience ensures emotional stability and problem-solving capacity within these routines. Consequently, communication evolves from reactive coping toward deliberate coordination, confirming the meaning, capacity, and coordination sequence proposed in the theoretical framework.

In practical and policy terms, the results position SDG 3 - Health & Well-Being as the primary axis of sustainable family development. Strengthening family-based psychoeducation that cultivates sensemaking, emotional regulation, and planning routines can enhance parental mental health and therapy adherence, thereby improving the child's QoL. The findings also imply co-benefits for SDG 10 - Reduced Inequalities through better service navigation, equitable access to rehabilitation and assistive technology, and reduced social stigma; and for SDG 4 - Inclusive Education by promoting consistent communication between parents and teachers for classroom accommodations and individualized learning goals.

Although cross-sectional and limited to urban families, this research provides an empirically grounded conceptual model showing that health equity begins at home when parents can interpret, organize, and communicate effectively about their child's needs. Future studies should apply longitudinal and intervention designs to examine how integrated psychoeducational programs and QoL-oriented supports reinforce sustainable caregiving practices. Through these pathways, sensemaking and resilience become everyday mechanisms for realizing SDG 3 while supporting SDG 10 and SDG 4, ensuring that families raising children with CP can live healthier, more connected, and more inclusive lives.

ACKNOWLEDGEMENTS

All authors thank the Ministry of Higher Education, Science, and Technology, Indonesia, for the BIMA scholarship for Fiscal Year 2025.







REFERENCES

- Brust, M., Gebhardt, W. A., van Bruggen, S., Janssen, V., Numans, M. E., & Kiefte-de Jong, J. C. (2023). Making sense of a myocardial infarction in relation to changing lifestyle in the five months following the event: An interpretative phenomenological analysis. *Social Science and Medicine*, 338(October), 116348. https://doi.org/10.1016/j.socscimed.2023.116348
- Chen, K., Zhao, X., Peng, F., Zhao, J., Guo, H., & Bian, C. (2025). Analysis of factors affecting family resilience and exploration of an intervention model for children with cerebral palsy in Changzhou. *Current Psychology*, *44*(6), 4295-4304. https://doi.org/10.1007/s12144-025-07461-3
- Creswell, J. W., & David Creswell, J. (2018). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Research Design Fifth Edition.
- Fluss, J., & Lidzba, K. (2020). Cognitive and academic profiles in children with cerebral palsy: A narrative review. *Annals of Physical and Rehabilitation Medicine*, 63(5), 447-456. https://doi.org/10.1016/j.rehab.2020.01.005
- García-Galant, M., Blasco, M., Moral-Salicrú, P., Soldevilla, J., Ballester-Plané, J., Laporta-Hoyos, O., Caldú, X., Miralbell, J., Alonso, X., Toro-Tamargo, E., Meléndez-Plumed, M., Gimeno, F., Leiva, D., Boyd, R. N., & Pueyo, R. (2024). Understanding social cognition in children with cerebral palsy: exploring the relationship with executive functions and the intervention outcomes in a randomized controlled trial. *European Journal of Pediatrics*, 183(9), 3997-4008. https://doi.org/10.1007/s00431-024-05635-y
- Glinac, A., Sinanovic, S., Glinac, L., & Matovic, L. (2023). The impact of life of a child with cerebral palsy on the quality of life of mothers: Tuzla Canton/Bosnia and Herzegovina. Sudanese Journal of Paediatrics, 23(1), 60-67. https://doi.org/10.24911/sjp.106-1600718620
- Guimarães, A., Pereira, A., Oliveira, A., Lopes, S., Nunes, A. R., Zanatta, C., & Rosário, P. (2023). Parenting in Cerebral Palsy: Understanding the Perceived Challenges and Needs Faced by Parents of Elementary School Children. *International Journal of Environmental Research and Public Health*, 20(5). https://doi.org/10.3390/ijerph20053811
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R*. Springer. https://doi.org/10.1007/978-3-030-80519-7_7
- Hilten, A. Van. (2019). A theory of (research) practice makes sense in sensemaking Applying Bourdieu's critical social theory to the study of sensemaking change. *Journal of Organizational Change Management*. https://doi.org/10.1108/JOCM-06-2019-0177





- Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, 7(4), 396-403. https://doi.org/10.9734/bjast/2015/14975
- Kaur, A.-M. N. (2024). "Parental Quality of Life and the Challenges of Raising a Child with Cerebral Palsy: A Systematic Review." TIJER International Research Journal, 11(7), 872-884.
- Koerner, A. F., & Schrodt, P. (2014). An Introduction to the Special Issue on Family Communication Patterns Theory. *Journal of Family Communication*, 14(1), 1-15. https://doi.org/10.1080/15267431.2013.857328
- Kramer, M. W. (2016). Sensemaking. *The International Encyclopedia of Organizational Communication*, 1-10. https://doi.org/10.1002/9781118955567.wbieoc185
- Luna-Reyes, L. F., Andersen, D. F., Black, L. J., & Pardo, T. A. (2021). Sensemaking and social processes in digital government projects. *Government Information Quarterly*, 38(2). https://doi.org/10.1016/j.giq.2021.101570
- Macphee, D., Lunkenheimer, E., & Riggs, N. (2015). Resilience as Regulation of Developmental and Family Processes. *HHS Public Access*, *64*(1), 153-175. https://doi.org/doi:10.1111/fare.12100
- Martínez-Rodríguez, L., García-Bravo, C., García-Bravo, S., Salcedo-Pérez-Juana, M., & Pérez-Corrales, J. (2025). New Technological Approaches in Occupational Therapy for Pediatric Cerebral Palsy: A Systematic Review. Healthcare (Switzerland), 13(5). https://doi.org/10.3390/healthcare13050459
- Mashaal, A. H. (2024). A Comprehensive Study on The Assessment of Motor Functions Development in Children with Cerebral Palsy. South Eastern European Journal of Public Health, XXV, 2038-2047. https://doi.org/10.70135/seejph.vi.2284
- Nations, U. D. P. (2025). Sustainable Development Goals. Department of Economic and Social Affairs, Sustainable Development. https://www.undp.org/sustainable-development-goals
- Novak, I., Morgan, C., Fahey, M., Finch-Edmondson, M., Galea, C., Hines, A., Langdon, K., Namara, M. M., Paton, M. C., Popat, H., Shore, B., Khamis, A., Stanton, E., Finemore, O. P., Tricks, A., te Velde, A., Dark, L., Morton, N., & Badawi, N. (2020). State of the Evidence Traffic Lights 2019: Systematic Review of Interventions for Preventing and Treating Children with Cerebral Palsy. *Current Neurology and Neuroscience Reports*, 20(2). https://doi.org/10.1007/s11910-020-1022-z
- Peng, M. Y., & Lu, Y. F. (2024). Mothers' challenges and experiences of children with cerebral palsy: A qualitative meta-synthesis. *Frontiers of Nursing*, 11(2), 169-179. https://doi.org/10.2478/fon-2024-0018





- Pretorius, C., & Steadman, J. (2018). Barriers and Facilitators to Caring for a Child with Cerebral Palsy in Rural Communities of the Western Cape, South Africa. *Child Care in Practice*, 24(4), 413-430. https://doi.org/10.1080/13575279.2017.1347146
- Qiu, Y., Xu, L., Pan, Y., He, C., Huang, Y., Xu, H., Lu, Z., & Dong, C. (2021). Family Resilience, Parenting Styles, and Psychosocial Adjustment of Children With Chronic Illness: A Cross-Sectional Study. *Frontiers in Psychiatry*, 12(May), 1-10. https://doi.org/10.3389/fpsyt.2021.646421
- Ramanandi, V. H., Parmar, T. R., Panchal, J. K., & Prabhakar, M. M. (2019). Impact of parenting a child with cerebral palsy on the quality of life of parents: A systematic review of literature. *Disability, CBR and Inclusive Development*, 30(1), 57-93. https://doi.org/10.5463/dcid.v30i1.793
- Rudebeck, S. R. (2020). The psychological experience of children with cerebral palsy. *Paediatrics and Child Health (United Kingdom)*, 30(8), 283-287. https://doi.org/10.1016/j.paed.2020.05.003
- Shahali, S., Tavousi, M., Sadighi, J., Kermani, R. M., & Rostami, R. (2024). Health challenges faced by parents of children with disabilities: a scoping review. *BMC Pediatrics*, 24(1). https://doi.org/10.1186/s12887-024-05104-3
- Smith, M., & Blamires, J. (2022). Mothers' experience of having a child with cerebral palsy. A systematic review. *Journal of Pediatric Nursing*, 64, 64-73. https://doi.org/10.1016/j.pedn.2022.01.014
- Tambunan, R. M., Lubis, D. P., Puspitawati, H., & Muljono, P. (2023). Komunikasi Anggota Keluarga Untuk Pengasuhan Anak Cerebral Palsy. *Ekspresi Dan Persepsi: Jurnal Ilmu Komunikasi*, 6(3), 535-546. https://doi.org/10.33822/jep.v6i3.6179
- Walsh, F. (2016). Family resilience: a developmental systems framework. European Journal of Developmental Psychology, 13(3), 313-324. https://doi.org/10.1080/17405629.2016.1154035
- Weick, K. E. (1995a). Sensemaking in Organizations. In SAGE Publications, Inc.
- Weick, K. E. (1995b). Sensemaking In Organizations. Foundations for Organizational Science: A SAGE Publications Series.
- Weick, K. E. (1995c). The Nature of Sensemaking. Sensemaking in Organizations, 1-62.
- Whiting, M., Nash, A. S., Kendall, S., & Roberts, S. A. (2019). Enhancing resilience and self-efficacy in the parents of children with disabilities and complex health needs. *Primary Health Care Research & Development*, 20, e33. https://doi.org/10.1017/S1463423619000112







- Wolbers, J. (2022). Understanding Distributed Sensemaking in Crisis Management: The Case of the Utrecht Terrorist Attack. *Journal of Contingencies and Crisis Management*, 30(4), 401-411. https://doi.org/10.1111/1468-5973.12382
- Zeni, T. A., Buckley, M. R., Mumford, M. D., & Griffith, J. A. (2016). Making "sense" of ethical decision making. *Leadership Quarterly*, 27(6), 838-855. https://doi.org/10.1016/j.leaqua.2016.09.002



