

Empowering Families to Enhance Independence in Activities of Daily Living Among Children with Intellectual Disabilities: A Study in Bandung, Indonesia

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ABSTRACT

Background: Families provide opportunities for children with intellectual disabilities to practise daily self-care. Understanding the relationship between family empowerment and functional independence may inform family-centred support. Purpose: To examine the association between family empowerment and independence in activities of daily living (ADL) among children with intellectual disabilities at SPLB-C YPLB Cipaganti, Bandung, Indonesia. Methods: A cross-sectional survey was conducted on 22–25 April 2025, involving 42 family caregivers of students aged 7–18 years with mild or moderate intellectual disabilities. Caregivers completed the Family Empowerment Scale and assessed children's self-care using the Katz Index. Descriptive statistics summarised the data, while Pearson's chi-square and Fisher's exact tests examined associations. Crude odds ratios (ORs) and 95% confidence intervals (CIs) measured association strength. Results: Twenty-two families (52.4%) had low empowerment, while 20 (47.6%) had good empowerment. High ADL independence was observed in 85.0% of children in the good-empowerment group and 54.5% in the low-empowerment group. Family empowerment was significantly associated with ADL independence ($\chi^2 = 4.546$; $p = 0.033$; OR = 4.722; 95% CI: 1.068–20.888). Conclusion: Family empowerment was significantly associated with ADL independence among children with intellectual disabilities. However, the cross-sectional design limits causal interpretation.

Keywords: ADL Independence, Empowerment, Intellectual Disability



INTRODUCTION

For children with intellectual disabilities, learning to manage everyday self-care is an important aspect of developing practical independence. Intellectual disability involves limitations in intellectual functioning alongside difficulties in adaptive behaviour across conceptual, social, and practical domains (Schalock et al., 2021). These difficulties can affect how children understand instructions, acquire routines, and apply previously learned skills (Lestari et al., 2026). In Indonesia, the 2022 Population Census identified 79,942 people aged 5 years and older with intellectual limitations (Statistik, 2022). These figures underscore the need for sustained, coordinated support from health, education, and family systems.

Activities of daily living (ADL) include essential self-care tasks such as bathing, dressing, toileting, transferring, maintaining continence, and feeding. Children with intellectual disabilities commonly require more structured instruction, repeated practice, and individualised support to acquire self-care skills (Dionísio Mestre et al., 2025; Liu et al., 2025). ADL independence is multidimensional: it may be influenced by the severity of intellectual disability, age, communication and motor abilities, attentional resources, associated health conditions, learning opportunities, and the quality and consistency of support available at home and school (Indahwati & Haeriyah, 2022; Mubarok & Anggraini, 2022; Sari & Hardika, 2024). Therefore, promoting ADL independence is clinically and socially important because it can enhance participation and reduce long-term care demands on families.

Parents and other caregivers establish routines, provide assistance, create opportunities to practise skills, and make decisions about education and health care. Family empowerment refers to caregivers' knowledge, skills, confidence, participation, decision-making capacity, and ability to access or influence services that affect their children (Nabila et al., 2025; Organization, 2022). This perspective directs attention to families' ability to make informed decisions and obtain appropriate support, rather than treating them solely as recipients of professional guidance.

Evidence concerning caregiver-delivered interventions provides a rationale for examining the family's contribution to daily living skills. Mestre et al. (2024) identified several essential elements of family-centred care, including meaningful caregiver participation, access to information and education, shared care decisions, sensitivity to cultural values, and support for families' social and emotional needs. Complementing these findings, a systematic review of caregiver-delivered interventions found gains in daily living skills among people with developmental disabilities in 86% of the 21 experiments rated as high quality. The strategies frequently used across these experiments included breaking tasks into smaller steps, providing prompts, and reinforcing desired behaviours (Dionísio Mestre et al., 2025). A further systematic review suggested that behavioural skills training can strengthen family caregivers' ability to implement support strategies for people with intellectual and developmental disabilities (Sun, 2022). Caregivers' skills and access to resources may therefore shape children's opportunities to practise activities of daily living (ADL) and apply their self-care skills across different settings.

Nevertheless, the evidence should be interpreted cautiously. The systematic review of the Family Empowerment Scale reported acceptable evidence for some measurement properties but

identified limitations in the diversity of validation samples and insufficient evidence for responsiveness to change over time (Guerrero et al., 2024). Furthermore, A systematic review of interventions targeting family relationships and functioning in households supporting someone who has an intellectual disability or is autistic identified potential benefits. However, methodological weaknesses and a shortage of adequately powered randomised controlled trials limited the strength of the evidence (Golubović et al., 2021). Further empirical research is therefore needed to examine these approaches within specific local contexts, particularly in countries classified as having low or middle income.

Research conducted in Indonesia has largely focused on how family support, parenting practices, and caregivers' roles relate to self-care independence in children who have intellectual disabilities. (Dionísio Mestre et al., 2025; García-Villamizar, 2024; Schalock et al., 2021). Although relevant, these constructs are not identical to family empowerment as operationalised through the Family Empowerment Scale. In Indonesia, research specifically examining the association between family empowerment and the ability of children who have intellectual disabilities to perform activities of daily living (ADL) independently remains limited. This research gap is particularly significant, as family empowerment may be influenced by access to local services, socioeconomic circumstances, collaboration between schools and families, and community involvement.

SPLB-C YPLB Cipaganti, Bandung, is a special education institution serving children with intellectual disabilities. Preliminary observations at the school indicated variation in children's self-care abilities and in the extent of family involvement in daily support. However, local empirical evidence on the association between family empowerment and ADL independence was unavailable. This study therefore investigated whether **family empowerment** was associated with the ability to perform activities of daily living (ADL) independently in students aged 7–18 years who had mild or moderate intellectual disabilities and attended SPLB-C YPLB Cipaganti in Bandung, Indonesia.

METHODS

This study examined family empowerment in relation to children's self-care independence at SPLB-C YPLB Cipaganti in Bandung, Indonesia. Data collection took place between 22 and 25 April 2025. A cross-sectional observational approach was adopted, with both variables assessed during the same period. The analysis therefore addressed their association rather than the effect of one variable on the other.

1. Study Population and Sample

Recruitment covered all eligible families of students aged 7–18 years who had mild or moderate intellectual disabilities and were actively enrolled at the school. All 42 eligible families participated through total sampling. Participants were family members who took part in the child's everyday care and provided written consent. Families were excluded when the child also had a physical disability.



2. Study Variables

Family empowerment was examined as the explanatory variable, while the outcome was the child's level of independence in activities of daily living (ADL). Caregiver age, educational attainment, and employment status were recorded to describe the participating families.

3. Research Instruments

Caregivers completed the Family Empowerment Scale (FES), a 34-item instrument covering empowerment within the family, interactions with the service system, and participation in community or political matters (Akey et al., 2000; Koren et al., 1992). Responses were assigned values from 1 (never) to 5 (very often). Item values were added to produce domain scores and a total score, with possible totals extending from 34 to 170. For the present analysis, scores of 34–102 were classified as low empowerment and scores of 103–170 as good empowerment. This study-specific classification used 102, the theoretical midpoint of the scale, as its threshold. Expert ratings supported the content validity of the original FES, with an overall kappa coefficient of 0.77, while internal consistency coefficients ranged from 0.87 to 0.88 across its three subscales. Internal consistency in the study sample was 0.83, as estimated by Cronbach's alpha.

Caregivers also reported their children's self-care performance using the Katz Index of Independence in Activities of Daily Living (Lisdiana & Rofi'i, 2024). The assessment covered bathing, dressing, toileting, transferring, continence, and feeding. Independent performance received one point, whereas performance requiring assistance received zero. The six ratings yielded a total of 0–6. In this study, totals below 4 represented low ADL independence, while totals of 4–6 represented high independence. The Katz Index has demonstrated construct validity through its strong correlation with the Barthel Index ($r = 0.78$) and agreement with the Barthel Index in another study ($\kappa = 0.77$). Its Cronbach's alpha coefficient was 0.95 in this study.

4. Ethics and Data Collection

The study received approval from the Ethics Committee of Bandung Health Polytechnic, Ministry of Health of the Republic of Indonesia, under approval number 87/KEPK/EC/IV/2025. Before consenting, caregivers received an explanation of the research purpose, study procedures, confidentiality safeguards, and their freedom to discontinue participation. Participation was voluntary.

Caregivers completed the FES based on their own experiences and reported their children's performance on the Katz ADL items. The researcher checked the completed forms for missing responses before calculating the instrument scores. Participants were then assigned to the empowerment and ADL categories defined for this study, and the resulting dataset was prepared for analysis.

5. Data Analysis

IBM SPSS Statistics version 21 was used for data processing and analysis. Descriptive summaries were prepared for caregiver characteristics and the two principal study variables.

Empowerment categories were cross-tabulated against ADL categories in a 2×2 table. Pearson's chi-square test assessed the association. The association was expressed as a crude odds ratio with its 95% confidence interval. The threshold for statistical significance was $p < 0.05$.

RESULTS

The largest proportion of respondents was aged 36–45 years (52.4%). Nearly half had completed senior high school (47.6%), and most were homemakers or not employed outside the home (69.0%) (Table 1).

Table 1. Characteristics of Family Respondents, (n = 42)

Characteristics	Frequency (n)	Percentage (%)
Age (years)		
26–35	8	19
36–45	22	52.4
46–60	12	28.6
Education		
Primary education	4	9.5
Lower secondary education	10	23.8
Upper secondary education	20	47.6
Bachelor's degree	4	9.5
Master's degree	4	9.5
Occupation		
Homemaker/not employed	29	69
Employee	7	16.7
Civil servant	3	7.1
Self-employed	1	2.4
Labourer	2	4.8

Low family empowerment was identified in 52.4% of families, whereas 47.6% had good empowerment. Mean scores were highest in the family domain (45.16), followed by the service domain (44.38), and lowest in the community domain (32.50) (Table 2).

Table 2. Distribution of Family Empowerment, (n = 42)

Family empowerment	Frequency (n)	Percentage (%)
Low	22	52.4
Good	20	47.6
Total	42	100

High ADL independence was observed in 57.1% of children, while 42.9% had low ADL independence (Table 3).



Table 3. Distribution of ADL Independence Among Children with Intellectual Disabilities, (n = 42)

ADL independence	Frequency (n)	Percentage (%)
Low	18	42.9
High	24	57.1
Total	42	100

High ADL independence was more common among children from families with good empowerment (85.0%) than among children from families with low empowerment (54.5%). Pearson's chi-square test indicated a significant association between family empowerment and independence in activities of daily living (ADL) ($p = 0.033$), with a crude odds ratio of 4.722 (95% CI: 1.068–20.888). (Table 4).

Table 4. Relationship between Family Empowerment and Independence in Activities of Daily Living (n = 42)

Family Empowerment	Low ADL n (%)	High ADL n (%)	Total	OR	95% Confidence Interval	χ^2	P Value
Low	10 (45.5)	12 (54.5)	22	4.722	(1.068–20.888)	4.546	0.033*
Good	3 (15.0)	17 (85.0)	20				

DISCUSSION

1. Family empowerment in context

More than half of the participating families were classified as having low empowerment (52.4%), despite most caregivers being in early to middle adulthood and nearly half having completed senior high school. This pattern indicates that empowerment should not be equated with demographic characteristics alone. Instead, it encompasses perceptions of one's own competence, access to information and services, involvement in decision-making, and the ability to advocate for the child (Akey et al., 2000; Guerrero et al., 2024). Guerrero et al. (2024) reported evidence supporting several measurement properties of the scale but noted limitations regarding sample diversity and responsiveness. Accordingly, the FES result in this study should be interpreted as a description of empowerment within this local context, rather than as an immutable attribute of families.

The highest mean score was observed in the family domain, while the community domain recorded the lowest. A plausible interpretation is that caregivers may be more confident in daily routines within the home than in navigating community resources, advocacy, and service systems. Research among families raising children with developmental disabilities similarly describes empowerment as uneven across home, service, and community settings (Golubović et al., 2021). Family self-care research has also identified income, education, social support, household composition, and the child's functional dependence as factors that shape caregiver capacity and perceived empowerment (Mestre et al., 2024). These findings emphasize the need to consider

environmental resources, rather than individual caregivers' motivation alone, when interpreting low levels of empowerment.

2. ADL Independence

In this study, 57.1% of children had high ADL independence. This result is consistent with the principle that mild to moderate intellectual disability does not automatically result in complete dependence in self-care. Independence in bathing, dressing, toileting, feeding, and related routines is shaped by developmental level, adaptive behaviour, health and comorbidities, communication and motor skills, learning opportunities, and the consistency of support at home and school (Schalock et al., 2021). A study involving individuals with mild to moderate intellectual disabilities found that age, disability severity, and sustained attention in basic ADL performance (García-Pintor et al., 2024). Earlier evidence also found that disability severity, educational level, and comorbid Down syndrome predicted ADL functioning (García-Pintor et al., 2024).

3. Association with family empowerment

Children from families with good empowerment were more frequently classified as having high ADL independence than children from families with low empowerment (85.0% versus 54.5%). The association was statistically significant ($\chi^2 = 4.546$; $p = 0.033$), and the estimated odds of high ADL independence were 4.722 times higher in the good-empowerment group (95% CI: 1.068–20.888). These findings indicate that good family empowerment is associated with higher odds of ADL independence among children. This is consistent with the family-centred care approach, which emphasizes family education and involvement, shared decision-making, respect for cultural values, and social-emotional support. These components may help families participate in care and consistently support children's self-care practice (Mestre et al., 2024).

The result is also supported by intervention-focused literature. A systematic review examining caregiver-implemented interventions for daily living skills identified 21 high-quality experiments, with 86% reporting improvements in these skills. Frequently used intervention components included prompting, reinforcement, and task analysis (Liu et al., 2025). Similarly, a 50-year systematic review of daily-living-skills interventions in intellectual disability concluded that behavioural strategies can increase the acquisition and use of these skills, with caregiver training emerging as an important direction in the literature (Burns et al., 2019). Similarly, a systematic review of behaviour-skills training indicated that such training can enhance family caregivers' capacity to support developmental disabilities, potentially alongside improvements in outcomes for those receiving support (Kong, 2022).

Studies conducted in Indonesia have reported comparable findings. Prasaja and Harumi (2023) found that training combined with a monitored home-based programme to promote family empowerment significantly improved ADL independence among children with intellectual disabilities. In a separate study, Spann et al. (2023) reported a relationship between family support and ADL performance among children with intellectual disabilities enrolled in a public special school. Although these studies differ in design, setting, and constructs measured, they strengthen



the practical plausibility that knowledgeable and supported caregivers can create more frequent and consistent opportunities for children to practise self-care skills.

4. Evidence requiring caution

Higher family empowerment may facilitate practice, problem-solving, and access to services that support ADL independence. Conversely, when a child becomes more independent, caregivers may feel more capable and empowered. Unmeasured factors such as disability severity, adaptive functioning, comorbid conditions, household socioeconomic resources, and school programming may influence both variables. The wide confidence interval around the OR also reflects the small sample and requires cautious interpretation.

The findings nevertheless suggest that family-centred initiatives may be useful when they are practical and individualised. Rather than providing information alone, programmes could combine caregiver coaching on task analysis, prompting and fading, positive reinforcement, daily practice routines, communication with teachers, and linkage to community or service resources. Attention to the community domain is particularly relevant in this sample because it had the lowest mean score. Future research should use larger multisite samples, include child-level covariates, and apply longitudinal or controlled intervention designs to assess whether changes in family empowerment precede improvements in ADL independence.

CONCLUSIONS

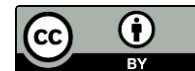
The findings indicated a significant association between family empowerment and independence in activities of daily living (ADL) among children aged 7–18 years with mild to moderate intellectual disabilities attending SPLB-C YPLB Cipaganti in Bandung. Children whose families demonstrated good empowerment had approximately 4.7 times the odds of achieving high ADL independence compared with those whose families had low empowerment. However, the cross-sectional design and small sample size mean that this finding should be interpreted as an association, not a causal relationship. These findings provide preliminary support for a family-centred approach involving collaboration among parents, schools, and health professionals to enhance caregivers' ability to support children's daily self-care practice, particularly through broader engagement with services and the community.

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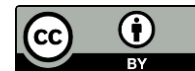
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