The Development of Socio-Emotional Inventory for Stanted Children in Indonesia: Rasch Model Analysis

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Abstrack

Stunting is commonly perceived as a physical issue in children, yet it also affects their psychological growth, particularly socio-emotional development. This study aims to construct a valid and reliable socio-emotional inventory for stunted children aged 4–5 years. Employing a cross-sectional quantitative design, the study involved 311 participants observed by early childhood teachers, primary school teachers, and parents, selected through convenience sampling. Data were analyzed descriptively using the Rasch model in Winstep 3.73. Findings revealed 24 valid statement items for assessing the socio-emotional aspects of stunted children. Reliability was established through person–item interaction, with a Cronbach's Alpha of 0.73, categorized as "good". The inventory covers dimensions of self-awareness, responsibility toward self and others, and prosocial behavior. Results suggest that the socio-emotional inventory for stunting cases demonstrates strong psychometric qualities, making it suitable for evaluating socio-emotional conditions of stunted children, and offering a useful tool for early intervention and educational planning.
Keywords: stunting, socio-emotional development, inventory validation, rasch model, early childhood education

Abstrak

Stunting umumnya dipandang sebagai masalah fisik pada anak, namun kondisi ini juga memengaruhi pertumbuhan psikologis, khususnya perkembangan sosial-emosional. Penelitian ini bertujuan untuk menyusun inventori sosial-emosional yang valid dan reliabel bagi anak stunting usia 4–5 tahun. Penelitian menggunakan desain kuantitatif dengan metode potong lintang (cross-sectional), melibatkan 311 partisipan yang diobservasi oleh guru PAUD, guru sekolah dasar, dan orang tua, yang dipilih melalui teknik convenience sampling. Analisis data dilakukan secara deskriptif menggunakan Model Rasch dengan bantuan perangkat lunak Winstep 3.73. Hasil penelitian menunjukkan terdapat 24 butir pernyataan yang valid untuk mengukur aspek sosial-emosional anak stunting. Reliabilitas instrumen ditunjukkan melalui interaksi individu dan butir, dengan nilai Alpha Cronbach sebesar 0,73 yang termasuk kategori "baik." Inventori ini mencakup dimensi kesadaran diri, tanggung jawab terhadap diri dan orang lain, serta perilaku prososial. Dengan demikian, inventori sosial-emosional ini memiliki kualitas psikometrik yang baik sehingga layak digunakan untuk menilai kondisi sosial-emosional anak stunting sekaligus menjadi alat yang bermanfaat bagi intervensi dini dan perencanaan pendidikan.
***Kata kunci**: stunting, perkembangan sosial-emosional, validasi inventori, model rasch, pendidikan anak usia dini*

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INTRODUCTION

Stunting remains one of the most pressing public health issues worldwide, affecting approximately 22.3% of children under five (UNICEF, 2023). In Indonesia, although the prevalence has declined from 37% in 2013 to 21.5% in 2023, the rate remains among the highest in Southeast Asia (Kemenkes, 2023). Stunting reflects a chronic nutritional deficiency that extends beyond physical stature, influencing a child's cognitive, social, and emotional development (Rao et al., 2025). Studies emphasize that the intergenerational cycle of poor nutrition, poverty, and limited maternal education contributes to developmental inequalities that hinder progress toward Sustainable Development Goals (SDGs) 2 Zero Hunger and 3 Good Health and wellbeing (Komarulzaman et al., 2023). Therefore, understanding stunting not only as a nutritional issue but also as a psychosocial development concern is essential for achieving sustainable child wellbeing in Indonesia.

Stunting affects multiple domains of child development—biological, cognitive, and socio-emotional. Evidence from longitudinal studies shows that chronically stunted children perform significantly lower in language, motor, and socio-emotional abilities compared to their non-stunted peers (Nahar et al., 2019). Early-life malnutrition disrupts neurobiological processes in the prefrontal cortex, which governs emotion regulation and social behavior (Suryawan et al., 2022). In Indonesia, permissive parenting and insufficient socio-emotional stimulation have been linked to delayed emotional maturity among stunted toddlers (Aziizah & Latifah, 2024). Additionally, maternal education significantly shapes children's wellbeing by influencing caregiving quality and early learning participation (Marshan & Pritadrajati, 2025). Consequently, the intersection between biological deprivation and psychosocial environments increases vulnerability to difficulties in emotional regulation, social adaptation, and school readiness—domains that remain underassessed in current stunting studies.

Although extensive research has established the biological and cognitive consequences of stunting, relatively few studies have explored its socio-emotional dimensions, particularly within the Indonesian context. Findings from multi-country longitudinal studies show that early-onset and persistent stunting lead to long-term deficits in attention, motivation, and social interaction, with implications for school readiness (Nahar et al., 2019; Alam et al., 2020). Yet existing instruments often prioritize anthropometric and cognitive indicators, overlooking the emotional and behavioral factors that underpin resilience and adaptation. Suryawan et al. (2022) emphasize that psychosocial recovery is possible if emotional stimulation accompanies nutritional interventions. Similarly, Mulyani et al. (2025) highlight that stunting reflects a multidimensional syndrome encompassing biological, social, and psychological deprivation. Therefore, the development of a culturally grounded socio-emotional inventory for stunted children is urgently needed to complement physical assessments and guide holistic intervention strategies.

The development of the Socio-Emotional Inventory for Stunted Children is conceptually grounded in social-emotional competence theory (Denham, 2006) and empirically strengthened using the Rasch Model, a probabilistic approach within the Item Response Theory (IRT) framework. The Rasch model allows the transformation of ordinal Likert-type responses into interval-level measurements, ensuring objectivity and precision across diverse respondent abilities (Bond & Fox, 2015). Its application has been proven effective in developing psychological and educational inventories, such as the Malaysian Emotional Quotient Inventory–Children (MEQI-C) and the Subjective Well-

being Inventory for Indonesian Students, both showing high item-person reliability and unidimensionality (Shuib et al., 2020; Azzahrah et al., 2024). Unlike Classical Test Theory, the Rasch model provides item invariance and detailed diagnostics of misfit responses, enabling refinement of indicators and ensuring that each item measures the same latent construct (Mujiansyah et al., 2025). Thus, it offers a robust psychometric foundation for constructing culturally valid and developmentally sensitive instruments for stunted children in Indonesia.

The development of a Socio-Emotional Inventory for Stunted Children in Indonesia has both theoretical and practical significance. Theoretically, it contributes to the psychometric literature by integrating socio-emotional constructs with nutritional and developmental frameworks, an area of stunting research that is rarely explored. Methodologically, it advances the use of the Rasch Model in validating culturally grounded instruments for vulnerable child populations, ensuring measurement precision, fairness, and construct validity. Practically, the inventory provides educators, counselors, and health practitioners with a reliable tool for early detection of socio-emotional difficulties among stunted children, enabling targeted psychosocial and educational interventions. This study, therefore, addresses a critical measurement gap between nutritional recovery and socio-emotional development. Guided by this rationale, the research is driven by the central question: How can a culturally valid and psychometrically sound socio-emotional inventory for stunted children in Indonesia be developed and validated using the Rasch model?

METHOD

This study employs a non-experimental quantitative research design, using a cross-sectional survey approach. The design was selected to capture the socio-emotional characteristics of stunted children in Indonesia at a single point in time without manipulating variables. A non-experimental framework is suitable because the study aims to develop and validate a measurement instrument rather than test causal relationships. Following national nutrition studies such as Laksono et al. (2022) and Titaley et al. (2019), this design provides strong descriptive and analytical power, enabling comprehensive mapping of socio-emotional indicators and statistical testing of relationships among variables. The representativeness and variation of samples drawn from diverse geographical and socio-economic settings ensure that findings reflect Indonesia's heterogeneous child population, supporting generalizability. Moreover, the cross-sectional survey offers efficiency for measurement validation, allowing the Rasch Model to analyze item fit, unidimensionality, and reliability using large-scale data collected once. This methodological rigor ensures that the resulting Socio-Emotional Inventory for Stunted Children is both culturally relevant and psychometrically robust.

The development process of the Socio-Emotional Inventory for Stunted Children follows the psychometric instrument development model, which emphasizes both theoretical grounding and empirical validation (DeVellis & Thorpe, 2021). The primary objective is to create an inventory that demonstrates strong construct validity, reliability, and cultural appropriateness within the Indonesian context. The process consists of three main stages: (1) Conceptualization and Construct Definition, which involves reviewing theoretical frameworks such as Denham's (2006) social-emotional competence theory and identifying relevant socio-emotional domains for stunted children; (2) Item Development and Content Validation, in which items are generated based on literature reviews and expert judgments to ensure relevance, clarity, and representativeness; and (3)

Empirical Testing and Psychometric Validation, which entails administering the instrument to a representative sample of stunted children and analyzing their responses using the Rasch Measurement Model to evaluate the instrument's measurement properties.

RESULT AND DISCUSSION

The research participants consisted of 311 stunted children aged 4-5 years in West Java, Indonesia, who were observed by preschool (PAUD) teachers, primary school (SD) teachers, and parents. The sampling technique used was convenience sampling, a method of selecting subjects or respondents based on their convenience or availability without following random or representative procedures (Houser, 2020). The researcher chose participants who were willing volunteers and accessible for the research. Generally, the research participants are shown in Table 1.

Table 1.
Research Participants

No	Place of Origin	Participants		Total
		Male	Female	
1	Cianjur Region	15	17	32
2	Cimahi City	6	12	18
3	Garut Region	26	17	43
4	Bandung Region	9	19	28
5	West Bandung Region	45	63	108
6	Sukabumi Region	24	38	62
7	Sukabumi City	13	7	20
Total				**311**

The unidimensionality analysis identifies the number of attributes or dimensions the instrument measures. This analysis uses Output Table 23, considering the values for Raw variance explained by measures and Unexplained variance in the 1st to 5th contrast. Measurement unidimensionality can be confirmed if Raw variance explained by measures is ≥ 20% (Note: the general interpretation criteria are: fair if 20-40%, good if 40-60%, and excellent if above 60%) and if Unexplained variance in the 1st to 5th contrast of residuals is each < 15%. The results of processing the data for the social-emotional instrument of stunted children using the Rasch Model are as follows:

Table 2.
Hasil Uji Unidimensionalitas

Table of Standardized Residual variance (in Eigenvalue units)				
		Empirical		**Model**
Total raw variance in observations	27.9	100.0 %		100.0%
Raw variance explained by measures	3.9	14.1%		14.1%
Raw variance explained by persons	1.7	6.0%		6.0%
Raw Variance explained by items	2.3	8.1%		8.1%
Raw unexplained variance (total)	24.0	85.9%	100.0 %	85.9%

Unexplained variance in 1st contrast	2.1	7.5%	8.8%
Unexplained variance in 2nd contrast	1.9	6.8%	7.9%
Unexplained variance in 3rd contrast	1.7	5.9%	6.9%
Unexplained variance in 4th contrast	1.5	5.4%	6.2%

Unidimensionality Analysis

The unidimensionality test of the social-emotional instrument for stunted children showed unexplained variance in the 1st to 4th contrast values, in sequence, ranging from 7.5% for the 1st contrast to 5.4% for the 4th contrast. These values indicate that the unexplained variance in the 1st to 4th contrast is less than 15%. This data shows that the social-emotional instrument used in the study for stunted children meets the requirements and measures the social-emotional variable without being influenced by other variables.

In the unidimensional approach, calculations are based on the number of dimensions the instrument measures from the collected data. If additional dimensions are indicated, Rasch identifies items that may contribute to those dimensions. It encourages researchers to investigate the items in the instrument and decide whether to remove, retain, or study them in more depth (Ishak et al., 2018).

The Analysis of Item Difficulty Levels (Item Measure)

Analyzing item difficulty levels (item measure) provides insights into how difficult or easy each item in the instrument is for the respondents. This analysis helps to understand which items are more challenging and which are less so. Item difficulty is often expressed on a scale, such as a logit scale in Rasch analysis, where higher values indicate more difficult items and lower values represent easier items.

In the context of your study on the social-emotional instrument for stunted children, analyzing item-level measures can reveal which aspects of social-emotional development pose the most significant challenges for these children. It can also help identify specific areas where interventions or support may be needed to improve their social-emotional wellbeing. By examining the item measures, you can gain insights into the relative difficulty of various social-emotional aspects being measured by the instrument and tailor interventions or programs accordingly to address the specific needs of stunted children in these areas.

The Item Measure, also known as item difficulty, is an analysis used to measure how easy or difficult a question is for respondents to answer. It is an interval measurement of the distance between different difficulty levels (Bond & Fox, 2015). The categories for item difficulty levels are as follows:

Table 3.
Categories of Item Difficulty Levels

No	Formula	Category
1	< (+1Standard Deviation)	Very Difficult
2	0.0 logit – (+1Standard Deviation)	Difficult
3	0.0 logit – (-1 Standard Deviation)	Easy
4	> (-1 Standard Deviation)	Very Easy

The item difficulty levels for the socio-emotional instrument for stunted children are as follows:

Table 4.
Item Difficulty Levels

Entrance Number	Total Score	Measure	Infit		Outfit		Point Measure Correlation	
			MNSQ	ZSTD	MNSQ	ZSTD	Corr	Value
23	481	.29	1.06	01.03	1.08	01.05	.31	.38
22	487	.20	1.02	.4	1.01	.2	.36	.37
16	488	.19	.99	-.2	1.00	.0	.38	.37
24	490	.13	.96	-.9	.93	-1.2	.42	.37
4	492	.13	1.02	.5	1.03	.5	.35	.37
17	492	.13	1.02	.4	1.00	.1	.36	.37
5	494	.09	1.10	2.03	1.12	1.09	.26	.37
11	495	.08	.96	-.9	.93	-1.1	.42	.37
19	495	.08	.95	-1.1	.95	-.8	.42	.37
12	499	.02	.97	-.6	.96	-.6	.40	.37
14	499	.02	1.00	.1	.95	-.7	.38	.37
20	499	.02	.97	-.7	.96	-.7	.40	.37
15	499	-.01	.99	-.2	.96	-.7	.38	.37
2	502	-.03	1.01	.2	1.03	.5	.35	.37
9	504	-.06	.98	-.4	.98	-.3	.39	.37
18	504	-.06	1.06	1.03	1.13	2.00	.29	.37
21	506	-.09	1.02	.4	1.08	1.02	.34	.37
1	507	-.11	1.03	.7	1.10	1.04	.32	.36
8	507	-.11	.98	-.3	.95	-.7	.39	.36

13	508	-.13	.95	-1.0	.95	-.6	.41	.36
6	509	-.14	.97	-.6	.98	-.2	.39	.36
3	511	-.17	1.00	.0	.98	-.2	.37	.36
7	511	-.17	.98	-.3	.98	-.3	.38	.36
10	517	-.27	1.00	.0	.95	-.6	.37	.36
Mean	**499.8**	**.0**	**1.00**	**.0**	**1.00**	**.0**		
Standard Deviation	**48.7**	**.14**	**.04**	**.8**	**0.9**	**.9**		

The item difficulty levels in the socio-emotional instrument for stunted children can be examined from Table 1, Item Measure order. From this table, it is noted that the Standard Deviation (SD) is 0.14. Therefore, the boundaries for the categories are as follows: very difficult is greater than 0.14, difficult is between 0.00 and 0.14, easy is between -0.14 and 0.00, and very easy is less than -0.14. By examining the logit values for each item in the item difficulty levels table, the socio-emotional instrument for stunted children has difficulty levels distributed into four categories: very difficult, difficult, easy, and very easy.

There are three items categorized as very difficult: 16, 22, and 23. The difficult category includes nine items: 24, 4, 17, 5, 11, 19, 12, 14, and 20. There are nine items categorized as easy: numbers 15, 2, 9, 18, 21, 1, 8, 13, and 6. Lastly, three items fall into the very easy category: items 3, 7, and 10.

The diversity in item difficulty levels reflects the differences in the difficulty levels of each statement or element within the instrument. Variation in the difficulty levels of test items provides advantages in measurement, more efficient learning, and the development of more optimal instruments. Instruments with a diverse range of item difficulty levels can measure the range of abilities or characteristics of respondents, help identify the extent to which respondents truly understand the measured concept, and minimize random guessing effects.

Item Fit Analysis

Item Fit Analysis examines whether a particular item typically functions in the measurement process, ensuring that participants can understand the item's intent (Sumintono & Widhiarso, 2015). Item Fit Analysis can be assessed using Winsteps in Table 10.1 based on data processing. There are three criteria for assessing item fit or misfit. To be considered fit, each item must meet at least one of these criteria. The three criteria for assessing item fit or misfit are as follows:

a. Outfit Mean Square (MNSQ): 0.5 < MNSQ <1.5
b. Outfit Z-standard (ZTSD): -2.0 < ZTSD <2.0
c. Point measure correlation (Pt Measure Corr): 0.4 < Pt Measure Corr < 0.85

The item fit analysis for the socio-emotional instrument in stunted children is as follows:

Table 5.
Item Fit Levels

Entrance Number	Total Score	Measure	Infit		Outfit		Point measure correlation	
			MNSQ	ZSTD	MNSQ	ZSTD	Corr	Value
18	504	-.06	1.06	1.03	1.13	2.00	A .29	.37
5	494	.09	1.10	2.03	01.12	1.09	B .26	.37
1	507	-.11	1.03	.7	01.10	1.04	C .32	.36
23	481	.29	1.06	1.03	01.08	1.05	D .31	.38
21	506	-.09	1.02	.4	01.08	1.02	E .34	.37
2	502	-.03	1.01	.2	01.03	.5	F .35	.37
4	492	.13	1.02	.5	01.03	.5	G .35	.37
17	492	.13	1.02	.4	01.00	.1	H .36	.37
22	487	.20	1.02	.4	01.01	.2	I .36	.37
14	499	.02	1.00	.1	.95	-.7	J .38	.37
16	488	.19	.99	-.2	1.00	.0	K .38	.37
3	511	-.17	1.00	.0	.98	-.2	L .37	.36
10	517	-.27	1.00	.0	.95	-.6	1 .37	.36
15	499	-.01	.99	-.2	.96	-.7	K .38	.37
6	509	-.14	.97	-.6	.98	-.2	J .39	.36
7	511	-.17	.98	-.3	.98	-.3	I .38	.36
8	507	-.11	.98	-.3	.95	-.7	H .39	.36
9	504	-.06	.98	-.4	.98	-.3	G .39	.37
12	499	.02	.97	-.6	.96	-.6	F .40	.37
20	499	.02	.97	-.7	.96	-.7	E .40	.37
24	490	.13	.96	-.9	.93	-1.2	D .42	.37
11	495	.08	.96	-.9	.93	-1.1	C .42	.37
13	508	-.13	.95	-1.0	.95	-.6	B .41	.36
19	495	.08	.95	-1.1	.95	-.8	A .42	.37
Mean	**499.8**	**310**	**1.00**	**.0**	**1.00**	**.0**		
Standard Deviasi	**8.7**	**.3**	**.04**	**.8**	**.06**	**.9**		

When considering the first criterion, the item fit analysis of the socio-emotional instrument for stunted children shows that all items fit, as they fall within the range 0.5 < MNSQ < 1.5. Second, the outfit ZSTD values indicate that all items fit because they are within the range of -2.0 < ZTSD < 2.0. Third, 18 misfit items concern the point measure because they fall outside the correlation range of 0.4 < Pt Mean Corr < 0.85. Based on these three criteria for item fit, it can be concluded that all items in the socio-emotional instrument for stunted children are deemed fit, as they meet at least one criterion required by the Rasch Model.

When applying the analysis, the Rasch Model assesses its fit to the data. If the data deviates significantly from the Rasch model, the causes must be considered, and individuals (persons) or items that do not fit may need to be removed (Bond et al., 2015). In the Rasch model, there are two types of fit, namely item fit and person fit, which

describe the validity of the Rasch measurement model. Item fit explains how consistent a sample's response pattern is to a particular item relative to other individuals' responses to other items.

Item fit plays a significant role in testing processes, especially in item assessment and selection, and in decisions about test scores derived from individual responses. Therefore, errors arising during the calibration stage of instrument development can be clearly identified using item fit. If a question has suboptimal discriminative power, item fit statistics will identify this difficulty (Karabatsos, 2003).

Instrument Test Reliability

Information about the statistical summary in Winstep can be found in the main menu under "output tables 6 Summary statistic." This section provides insights into the overall quality of student responses, the quality of the instrument, and the interaction between individuals and items.

Table 6.
Summary Statistic Person

Summary Person								
	Total			Model Error	Infit		Outfit	
	Total Score	Count	Measure		MNSQ	ZSTD	MNSQ	ZSTD
Mean	38.5	24.0	.52	.47				
Standard Deviation	4.4	.1	.90	.11				
Max.	48.0	24.0	4.36	1.83				
Min.	28.0	23.0	-1.62	.41	.91	-2.1	.83	-2.1
REAL RMSE	0.48	SD	.76	Separation	1.57	Person Reliability		.71
Cronbach's alpha = 20 person raw score ("test") reliability = .73								

Table 7.
Summary Statistic Item

Summary Item								
	Total			Model Error	Infit		Outfit	
	Total Score	Count	Measure		MNSQ	ZSTD	MNSQ	ZSTD
Mean	499.8	310.9	.00	.13	1.00	.0	1.00	.0
Standard Deviation	8.7	.3	.14	.00	.04	.8	.06	.9
Maximal	517.0	311.0	.29	.13	1.10	2.3	1.13	2.0
Minimal	481.0	310.0	-.27	.12	.95	-1.1	.93	-1.2
REAL RMSE	.13	SD	0.5	Separation	.40	Item Reliability		.14

Cronbach's alpha measures the consistency of items within an individual. The obtained Cronbach's alpha value is 0.73, which falls into the "good" category (Sumintono & Widhiarso, 2014). A higher Cronbach's alpha value indicates better instrument reliability, ensuring consistent and dependable results when used repeatedly or in

different situations (Tavakol & Dennick, 2011). Reliable instruments provide consistent results and a solid basis for analysis and evaluation (Moss, 2003).

Stunting remains an unresolved nutritional issue in Indonesia. Stunting has significant long-term effects, including disruptions in physical, mental, intellectual, and cognitive functioning (Nasution & Susilawati, 2022). Stunting is a chronic nutritional problem resulting from prolonged inadequate nutrition intake due to improper feeding practices (Ministry of Health, 2013: 40). Stunting starts from fetal development. It becomes evident when a child is two years old. Factors contributing to stunting can be traced back to pregnancy or early childhood (Apriliana et al., 2022). The causes of child stunting encompass individual, family, and community factors (Bogin, 2022). Individual characteristics include gender, birth weight and length, morbidity, infections, exclusive breastfeeding, and children's eating habits. Family factors include maternal height, education, food availability, family type, and economic status. Meanwhile, household environment characteristics include access to clean water and sanitation, cultural factors, access to healthcare services, and the kind of residence.

Child stunting is not significantly associated with maternal age; emotional support and health education during pregnancy are more effective in improving children's short- and long-term health (Apriliana et al., 2022). Unplanned pregnancies, incomplete biological maturity, and poor nutritional status during pregnancy can exacerbate the risk of stunted infants (Mtongwe, 2021). The risk of stunting is 4 times higher than for children with good nutritional status (Septamarini et al., 2019). Furthermore, stunting has adverse effects, including disruptions in mental, motor, and cognitive development and an increased susceptibility to disease (Primasari & Keliat, 2020).

Children who experience stunting until age five will find it very difficult to recover, and this condition will persist into adulthood, increasing the risk of low birth weight in subsequent generations. Stunted children with inhibited growth show differences in behavior, including apathy, limited activities, less play, and reduced exploration (Nahar et al., 2019). Delayed physical growth can impact a child's mental and emotional health (Chen, 2017). Children who experience stunting may lack confidence due to physical differences from their peers, face difficulties in social interactions, and experience challenges in their social-emotional development.

Stunting in toddlers can be associated with low socio-emotional development and an increased risk of mortality (Amaranggana, 2018). Children's socio-emotional development involves their sensitivity to others' feelings in daily interactions (Lubis, 2019). The extent to which children relate to those around them begins with parents, half-siblings, and playmates and extends to a broader community (Lubis, 2019). Socio-emotional development cannot be separated from other aspects (Lubis, 2019).

Issues related to children's socio-emotional development are crucial as they signify their adaptive abilities. Socio-emotional development in children is a stage in which they begin to understand who they are, what they feel, and what is expected of them when interacting with others. This developmental process occurs early in life, with the most rapid development occurring during early childhood, the first five years of a child's life. Meanwhile, emotional development refers to a child's ability to recognize, understand, manage, and express emotions in healthy, productive ways. The socio-emotional development of children, especially those aged 4-5 years, can be measured across three domains: self-awareness, self-responsibility, responsibility towards others, and prosocial behavior (McTaggart et al., 2020; Engler et al., 2023). Indicators of self-awareness include (1) showing independence in choosing activities, (2) controlling

emotions, (3) displaying self-confidence, (4) understanding rules and discipline, (5) having a persevering attitude (not easily giving up), and (6) taking pride in their work. Indicators of self-responsibility and responsibility towards others include (1) taking care of themselves in their environment, (2) respecting the excellence of others, and (3) being willing to share, help, and assist friends. Indicators of prosocial behavior include (1) showing enthusiasm in engaging in competitive games positively, (2) obeying rules in a game, (3) respecting others, and (4) showing empathy.

CONCLUSION

The research successfully developed a valid inventory to measure the socio-emotional development of stunted children aged 4-5 years, comprising 24 statement items. The instrument's reliability, as determined by the interaction between individuals and items, is reflected in its Cronbach's Alpha value of 0.73, indicating that the instrument's reliability falls into the "good" category. This socio-emotional inventory for stunted children measures self-awareness, self-responsibility towards themselves and others, and prosocial behavior in stunted children aged 4-5 years. The indicators detectable with this inventory include showing independence in choosing activities, emotional control, self-confidence, understanding rules and discipline, perseverance (not easily giving up), taking pride in one's work, taking care of themselves within their environment, respecting the excellence of others, willingness to share, help, and assist friends, showing enthusiasm in engaging in competitive games positively, obeying rules in games, respecting others, and demonstrating empathy.

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