

Original Research

Validity and Reliability of Stunting Questionnaire for Toddlers in Rural Areas of Southwest Papua



Nur Hafni Hasim^{1*}, Iin Inayah¹, & Nunung Nurjannah¹

¹Ahmad Yani University, Cimahi, Bandung, Indonesia

Article Info	Abstract
<p>Article history: Received: 28 May 2023 Accepted: 25 July 2023</p>	<p><i>Introduction:</i> Stunting can ruin the future of children. However, changes immediately impact the child's stage of development. It shows the need to develop a valid and reliable instrument that can be used for current causes of stunting in rural areas. Purpose: This paper tries to analyze development instruments to find out the factors that cause stunting in rural areas.</p> <p><i>Methods:</i> The study was conducted in a form of a survey, with quantitative data analysis to get an outlook of measurement instrument validity and reliability built practically with the cross-sectional method. Only mothers who have children of their own were recruited in this study. This study used a questionnaire. The validity and reliability has been counted using Cronbach's alpha.</p> <p><i>Results:</i> The child's age, height, and weight are valid in determining biological factors in stunting situations. The number of rooms at home, the job of the head of the family, and education. Mother is a sub-variable that does not describe socioeconomic factors that cause stunting. Family planning history is a supporting sub-variable to explore the reasons for stunting behaviors.</p> <p><i>Conclusion:</i> The questionnaire successfully identified factors causing stunting in rural areas, which is valuable for policymakers and researchers. Limitations included a small sample size. Further research and in-depth interviews are needed to investigate stunting factors in rural areas.</p>
<p>Keywords: stunting, rural, validity, reliability, questionnaire</p>	

*Corresponding Author:

e-mail: nurhafni705@gmail.com



This work is licensed under a Creative Commons Attribution 4.0 International License.

INTRODUCTION

Nutrition was very fundamental to determine the quality of a nation. The problem of stunting has been getting attention critical enough in various countries, including Indonesia. During the last decade, cases of stunting have grown rapidly in many regions in Indonesia.

In 2021 the prevalence of stunting in Indonesia will reach 24.4%, and still higher than Vietnam (23%), Malaysia (17%), Thailand (16%), and Singapore (4%)[1]. The Indonesian government has carried out many programs to reduce stunting rates through various interventions. However, in West Papua, the prevalence of stunting (chronic malnutrition) in the children under the age of five is a severe health problem [2].

According to The Indonesian Nutritional Status Study (SSGI) conducted by the Ministry of Health's Health Research and Development Agency in 2021, West Papua Province occupied ranks 16th nationally out of 34 provinces with the highest average stunting rate is as much as 26.2%. Whole regencies and cities in West Papua Province, except Sorong City, have stunting rates that exceed the World Health Organization recommendation namely Fakfak (26%), Manokwari (26.9%), Bintuni Bay (27.5%), South Manokwari (28.5%), Kaimana (28.5%), Sorong District (28.7%), Wondama Bay (31%), Raja Ampat (31.1%), Maybrat (34.5%), Tambrau (39.4%), South Sorong (39.6%), and Arfak Mountains (40.1%) [3].

It is now well-known that stunting can ruin a child's future. However, changes will immediately have a serious impact on the

child's developmental stage. A previous study has shown that stunted children will experience disturbance in brain development and cognitive development, so they will have difficulty remembering, solving problems, and having hiccups in carrying out activities involving mental or brain activity. The problem that has become more urgent recently is the data by the 2022 World Population Review, the average IQ of children reaching 78,49 makes Indonesia ranked 130th out of 199 countries[4].

Several studies on stunting focus on identifying the factors that cause stunting [5]–[18]. However, until now, too little attention has been given to developing instruments that do not verbose but could describe the factors that cause stunting in rural regions. This shows the need to develop valid and reliable instruments that can be used to know the causes of stunting in rural areas.

This paper analyzes development instruments to determine the factors that cause stunting in rural areas. This study was conducted in a form of a survey, by collecting data through direct interviews with parents and toddlers to provide a new outlook into a simple instrument for assessing the cause of stunting in rural areas in Southwest Papua Province.

METHODS

To measure stunting in toddlers, this study uses quantitative analysis to assess the validity and reliability of the instrument constructed practically through a cross-sectional method. The study involved a total sample of 149 mothers and stunted infants.

The research was conducted from January to March 2023. To avoid bias, measurements were taken by nursing students who went through a training process to ensure consistent perceptions between researchers and students. Participants were interviewed using a completed questionnaire. Research assistants provided measuring tools to record height and weight. The questionnaire contained questions to identify the child's physical condition, such as age, gender, height, and weight. Meanwhile, parental demographics were measured by recording age, education, occupation, and income. Nutrition factors identified in children included breastfeeding duration, complementary feeding duration, medical history, ways of handling toddler illnesses, history of contraceptive use, and the size of the living space at home. To ensure accuracy, the stunting examination was performed at the respondents' houses. The validity of the instrument was measured using Pearson's Product-Moment test, while the instrument's reliability was calculated using Cronbach's alpha. Data analysis in this study was conducted using the data processor application Jamovi. The research has obtained approval from the Research Ethics Committee

of the Health Polytechnic of the Ministry of Health in Sorong with the reference number DM.03.05/6/027/2023.

RESULTS

A total of 149 respondents participated, with a mean age of 31 years. Characteristics of socio-demographics detailed by respondents are presented in Table 1.

Based on the results of validity and reliability tests in Table 2, it can be concluded that the biological factors measured in this study were not significantly affected by the sex of the child. Socioeconomic variables such as respondents' last education, current head of the family, last education of the head of the family, and occupation of the head of the family also did not significantly influence the socioeconomic factors tested. In addition, the frequency of children's illnesses and the place of treatment when sick did not significantly influence the behavioral factors tested. However, biological factors showed good internal consistency before and after removing other items. Although there was a slight improvement after removing these items, reliability in both cases remained acceptable.

Table 1

Characteristics of sociodemographic respondent

Characteristics	N	Min	Max	%
Child Age, Mean (SD) (Months)	28.7(16.9)	1	60	
Type Child Gender				
man	74			49.7 %
woman	75			50.3 %
Child Height (SD) (CM)	85.4(18.1)	33	130	
Weight, Mean (SD) (KG)	13.3(9.34)	2.70'	91	
Duration Giving Breastfeeding, Mean (SD) (Month)	12.5(11)	0	43	
Current Child Age Weaned, Mean (SD) (Months)	15.5(12.6)	0	57	
Duration Weaning, Mean (SD) Month	13(16.6)	0	70	
Number of Children Under Five, Mean (SD)	1.54(0.740)	1	4	
Habit Pain, Mean (SD) (times)	1.93(2.72)	0	16	
Treatment				
Buy drugs at the pharmacy/store	28			18.8 %
Doctor practice	33			22.1 %
Request drug from midwife/nurse	2			1.3 %
Public health center	74			49.7 %
Hospital	12			8.1 %
Number of Rooms, Mean (SD)	2.54(0.976)	1	6	
Mother Age, Mean (SD) (Years)	31.4(7.68)	19	59	
Mother's Education				
No School	2			1.3 %
Elementary School	8			5.4 %
Junior High School	19			12.8 %
Senior High School	89			59.7 %
University	31			20.8 %
Head family				
Wife	5			3.4 %
Husband	144			96.6 %
Head family's last education				
No School	3			2.0 %
Elementary School	8			5.4 %
Junior High School	14			9.4 %
Senior High School	104			69.8 %
University	20			13.4 %
Head family occupation				
Employees (public/ private)	53			35.6 %
Self-employed	86			57.7 %
Retired	1			0.7 %
Not work	9			6.0 %

Characteristics	N	Min	Max	%
Income				
<3.28 million	75			50.3 %
>3.28 million	44			29.5 %
3.28 million	30			20.1 %
Expenditure				
3.28 million	16			10.7 %
<3.28 million	79			53.0 %
>3.28 million	54			36.2 %
Family history				
Not	57			38.3 %
Yes	92			61.7 %
Ownership Home				
Not	35			23.5 %
Yes	114			76.5 %

Table 2

Validity & reliability test

Variable	Before item dropped		After item dropped	
	Pearson's r	Cronbach's α	Pearson's r	Cronbach's α
Biological factors:				
What is your child's current height (cm)	'0.793***	'0.623	0.792***	'0.635
What is your child's current weight (kg)	'0.334***		0.337***	
How old is your child currently (months)	'0.831***		0.829***	
What gender is your child	'-0.129			
Socioeconomic factors:				
What is your current age (years)	'0.251***		0.253***	
What was your last education	'0.064			
Who is the current head of the family	'0.063			
What was the last education of the head of the family	'-0.116			
What is the job of the head of the family	'0.014			
What is the total income of the family in a month	'0.274***		0.273***	
What are your family's total expenses in 1 month	'0.235**		0.238**	
How many rooms are there in this house	'0.162*		0.153*	
How many children under 5 years old in this house	'0.158*		0.154*	
Is the house you currently live in your personal property?	'0.218**		0.216**	

Behavior factors:		
How long have you breastfed your child from birth (month)	'0.433***	0.441***
How often your child gets sick in a month (times)	'0.075	
At what age do you stop breastfeeding your child (months)	'0.527***	0.532***
How long have you stopped breastfeeding your child (months)	'0.658***	0.653***
Where you treat your child when sick	'0.044	
Are you currently, or have you ever done a family planning program?	'0.201**	0.205**

Note. * p <.05, ** p <.01, *** p <.001

DISCUSSION

The validity and reliability test results provide an essential basis for understanding the quality of measurements in this study. The analysis revealed that questions regarding the child's current height, weight, and age had high reliability, suggesting that these questions consistently measured relevant biological variables in the child. These findings align with previous research that affirms the importance of using well-measured biological indicators in research on child stunting.

However, in socioeconomic factors, reliability test results show that most questions have low or insignificant reliability. This indicates that these questions may not be able to measure the desired socioeconomic variables consistently. Discussion of factors affecting such low reliability needs to be done, such as clarity of questions, the subjectivity of

measurements, or the potential for bias in data entry. These results reflect previous findings emphasizing the complexity of measuring socioeconomic factors in surveys and the need for a more careful approach to developing accurate and reliable questions [19]-[24].

Conversely, in behavioral factors, reliability test results show that behavior-related questions have high reliability. This suggests that these questions consistently measure desired behavioral variables. Discussions may focus on the importance of these questions in identifying patterns of health behaviors and practices related to breastfeeding, the incidence of childhood illnesses, and participation in family planning programs. This findings are in line with previous research showing a link between certain behaviors and the health of children and families [25], [26], [26]-[37], [37].

The results of this study have several disadvantages and advantages that need attention. One drawback is the limited number of variables tested. Although several biological, socioeconomic, and behavioral variables have been identified, other factors can still influence the incidence of stunting in toddlers that have not been studied. In addition, this study was conducted in rural areas in West Papua, so the generalization of the results of this study is limited only to these populations and cannot be widely applied to other regions.

However, this study also has some advantages. First, using questionnaires as a data collection instrument provides convenience in collecting information from respondents. This can improve the efficiency and accuracy of the data collected. Furthermore, the statistical analysis results using the Pearson R correlation coefficient provide an overview of the relationship between the variables tested in biological, socioeconomic, and behavioral aspects. Significant results on several variables suggest an essential relationship in understanding the factors that contribute to the incidence of stunting in toddlers in rural areas in West Papua.

In this study, further research needs to be done to overcome existing shortcomings. Future research may involve more relevant variables, including environmental and dietary factors, to get a more complete picture of the factors that contribute to the incidence of stunting. In addition, research can be conducted in other areas with different populations to improve the generalizability of research results. By correcting these

deficiencies, this research can make a more significant contribution to the understanding and prevention of stunting in toddlers in rural areas.

CONCLUSION

This study was conducted to design and evaluate questionnaires for identifying factors that cause stunting in rural communities. The results of the investigation show that this questionnaire can be used to identify factors that cause stunting in rural communities. The findings will be of interest to policymakers and academic researchers. The main obstacle in this study was the low participation of the community as respondents. Nonetheless, this study shows that biological, socioeconomic, and behavioural factors contribute to the incidence of stunting in rural areas. However, further research is needed to explore and define stunting factors in rural areas. Therefore, in-depth research through more detailed interviews is needed. In addition, for future research, there are several suggestions to consider. First, the expansion of variables in questionnaires can help obtain a more complete picture of the factors that influence stunting. Furthermore, cross-validation, initial testing, and revision of questionnaires will improve the validity and reliability of questionnaire results. The use of construct reliability and validity test methods will help ensure the questions in the questionnaire accurately reflect the concepts you want to measure. In addition, clear instructions and good supervision are required to ensure respondents' answers are consistent and

accurate. Improving the questionnaire by following these suggestions, it is hoped that future studies can produce more valid and reliable data for analysing the factors that contribute to the incidence of stunting in toddlers in rural areas. Through these efforts, we can increase our understanding of stunting and encourage effective measures for its prevention and treatment.

CONFLICT OF INTEREST

Authors disclose no conflicts of interest related to the work in this article.

REFERENCES

- [1] M. A. L. Suratri et al., "Risk Factors for Stunting among Children under Five Years in the Province of East Nusa Tenggara (NTT), Indonesia," *International Journal of Environmental Research and Public Health*, vol. 20, no. 2, Art. no. 2, Jan. 2023, doi: 10.3390/ijerph20021640.
- [2] S. Widiastuti, M. M. Lisangan, and L. T. Wambrauw, "Analisis Kasus Stunting dan Faktor-faktor yang Berhubungan di Kampung Arowi Distrik Manokwari Timur," *Cassowary*, vol. 4, no. 2, Art. no. 2, Jun. 2021, doi: 10.30862/cassowary.cs.v4.i2.97.
- [3] H. Litbangkes, "Buku Saku Hasil Studi Status Gizi Indonesia (SSGI) Tahun 2021 | Badan Penelitian dan Pengembangan Kesehatan," 2022. <https://www.litbang.kemkes.go.id/buku-saku-hasil-studi-status-gizi-indonesia-ssgi-tahun-2021/> (accessed Jan. 23, 2023).
- [4] World Population Review, "Countries by IQ - Average IQ by Country 2023," 2022. <https://worldpopulationreview.com/country-rankings/average-iq-by-country> (accessed Jan. 23, 2023).
- [5] Apriliani, N. F. Hasanah, R. E. Siregar, S. F. Siregar, and P. A. Siregar, "KONDISI SOSIO DEMOGRAFI DAN STATUS GIZI BADUTA DI PROVINSI PAPUA BARAT," *Prosiding Forum Ilmiah Tahunan (FIT) IAKMI*, 2020, Accessed: Jan. 23, 2023. [Online]. Available: <http://jurnal.iakmi.id/index.php/FITIAKMI/article/view/61>
- [6] F. N. Ramadhani, B. I. Kandarina, and I. M. A. Gunawan, "Pola asuh dan pola makan sebagai faktor risiko stunting balita usia 6-24 bulan suku Papua dan non Papua," *Berita Kedokteran Masyarakat*, vol. 35, no. 5, Art. no. 5, May 2019, doi: 10.22146/bkm.46336.
- [7] Y. N. Veronica, A. Purba, and A. D. Anwar, "Hubungan antara Faktor Maternal dengan Kejadian Bayi Stunting 0-6 bulan di Kabupaten Asmat Provinsi Papua," *Care : Jurnal Ilmiah Ilmu Kesehatan*, vol. 9, no. 1, pp. 65-78, Mar. 2021, doi: 10.33366/jc.v9i1.1337.
- [8] M. Ekholuenetale, A. Barrow, C. E. Ekholuenetale, and G. Tudeme, "Impact of stunting on early childhood cognitive development in Benin: evidence from Demographic and Health Survey," *Egyptian Pediatric Association Gazette*, vol. 68, no. 1, p. 31, Oct. 2020, doi: 10.1186/s43054-020-00043-x.
- [9] B. A. Hailu, G. G. Bogale, and J. Beyene, "Spatial heterogeneity and factors influencing stunting and severe stunting

- among under-5 children in Ethiopia: spatial and multilevel analysis,” *Sci Rep*, vol. 10, no. 1, Art. no. 1, Oct. 2020, doi: 10.1038/s41598-020-73572-5.
- [10] A. Dranesia, D. Wanda, and H. Hayati, “Pressure to eat is the most determinant factor of stunting in children under 5 years of age in Kerinci region, Indonesia,” *Enferm Clin*, vol. 29, pp. 81–86, Sep. 2019, doi: 10.1016/j.enfcli.2019.04.013.
- [11] C. Kalinda et al., “Socio-demographic and environmental determinants of under-5 stunting in Rwanda: Evidence from a multisectoral study,” *Frontiers in Public Health*, vol. 11, 2023, Accessed: Jul. 07, 2023. [Online]. Available: <https://www.frontiersin.org/articles/10.3389/fpubh.2023.1107300>
- [12] Z. A. Bhutta et al., “How countries can reduce child stunting at scale: lessons from exemplar countries,” *The American Journal of Clinical Nutrition*, vol. 112, pp. 894S–904S, Sep. 2020, doi: 10.1093/ajcn/nqaa153.
- [13] M. A. Haque et al., “A predictive modelling approach to illustrate factors correlating with stunting among children aged 12–23 months: a cluster randomised pre-post study,” *BMJ Open*, vol. 13, no. 4, p. e067961, Apr. 2023, doi: 10.1136/bmjopen-2022-067961.
- [14] T. Mulyaningsih, I. Mohanty, V. Widyaningsih, T. A. Gebremedhin, R. Miranti, and V. H. Wiyono, “Beyond personal factors: Multilevel determinants of childhood stunting in Indonesia,” *PLoS One*, vol. 16, no. 11, p. e0260265, Nov. 2021, doi: 10.1371/journal.pone.0260265.
- [15] M. Gebreyohanes and A. Dessie, “Prevalence of stunting and its associated factors among children 6–59 months of age in pastoralist community, Northeast Ethiopia: A community-based cross-sectional study,” *PLOS ONE*, vol. 17, no. 2, p. e0256722, Feb. 2022, doi: 10.1371/journal.pone.0256722.
- [16] E. Yunitasari, B. O. Lee, I. Krisnana, R. Lugina, F. K. Solikhah, and R. S. Aditya, “Determining the Factors That Influence Stunting during Pandemic in Rural Indonesia: A Mixed Method,” *Children*, vol. 9, no. 8, Art. no. 8, Aug. 2022, doi: 10.3390/children9081189.
- [17] A. Nshimyiryo et al., “Risk factors for stunting among children under five years: a cross-sectional population-based study in Rwanda using the 2015 Demographic and Health Survey,” *BMC Public Health*, vol. 19, no. 1, p. 175, Feb. 2019, doi: 10.1186/s12889-019-6504-z.
- [18] C. R. Titaley, I. Ariawan, D. Hapsari, A. Muasyaroh, and M. J. Dibley, “Determinants of the Stunting of Children Under Two Years Old in Indonesia: A Multilevel Analysis of the 2013 Indonesia Basic Health Survey,” *Nutrients*, vol. 11, no. 5, p. 1106, May 2019, doi: 10.3390/nu11051106.
- [19] C. Bommer, S. Vollmer, and S. V. Subramanian, “How socioeconomic status moderates the stunting-age relationship in low-income and middle-income countries,” *BMJ Global Health*, vol. 4, no. 1, p. e001175, Feb. 2019, doi: 10.1136/bmjgh-2018-001175.
- [20] S. S. Halli, R. A. Biradar, and J. B. Prasad, “Low Birth Weight, the Differentiating

- Risk Factor for Stunting among Preschool Children in India,” *Int J Environ Res Public Health*, vol. 19, no. 7, p. 3751, Mar. 2022, doi: 10.3390/ijerph19073751.
- [21] D. N. Agustina, B. Sartono, and K. A. Notodiputro, “Analysis of Multidimensional Stunting Intervention Factor Using Mixed Model,” *IOP Conf. Ser.: Earth Environ. Sci.*, vol. 948, no. 1, p. 012067, Dec. 2021, doi: 10.1088/1755-1315/948/1/012067.
- [22] Kenya Medical Research Institute-Centre for Public Health Research, Kenya et al., “The Association between Nutritional Knowledge, Socio-Economic Status of Caregivers and Stunting of Children Under 5 Years in Kwale County of Kenya: A Baseline Survey,” *austinjntrmetab*, vol. 8, no. 2, Mar. 2021, doi: 10.26420/austinjntrmetab.2021.1105.
- [23] J. Syah, A. Wahab, and Bj. I. Kandarina, “Teenage Pregnancy as a Risk Factor of Stunting and Wasting among Children Aged 6-23 Months in Indonesia (IFLS 5 Analysis Study),” *Kemas*, vol. 16, no. 2, pp. 216–224, Nov. 2020, doi: 10.15294/kemas.v16i2.23655.
- [24] W. Haq and F. Abbas, “A Multilevel Analysis of Factors Associated With Stunting in Children Less Than 2 years Using Multiple Indicator Cluster Survey (MICS) 2017–18 of Punjab, Pakistan,” *SAGE Open*, vol. 12, no. 2, p. 215824402210961, Apr. 2022, doi: 10.1177/21582440221096127.
- [25] X. Wang, K. Maguire-Jack, S. Barnhart, S. Yoon, and Q. Li, “Racial Differences in the Relationship between Neighborhood Disorder, Adverse Childhood Experiences, and Child Behavioral Health,” *J Abnorm Child Psychol*, vol. 48, no. 3, pp. 315–329, Mar. 2020, doi: 10.1007/s10802-019-00597-4.
- [26] P. Baharvand, E. B. Nejad, K. Karami, and M. Amraei, “A Review Study of the Role of Socioeconomic Status and its Components in Children’s Health,” *GJMPBU*, vol. 16, p. 9, Nov. 2021, doi: 10.25259/GJMPBU_10_2021.
- [27] N. R. Bush et al., “Family Environment, Neurodevelopmental Risk, and the Environmental Influences on Child Health Outcomes (ECHO) Initiative: Looking Back and Moving Forward,” *Front Psychiatry*, vol. 11, p. 547, Jun. 2020, doi: 10.3389/fpsy.2020.00547.
- [28] T. H. Lipman and C. P. Hawkes, “Racial and Socioeconomic Disparities in Pediatric Type 1 Diabetes: Time for a Paradigm Shift in Approach,” *Diabetes Care*, vol. 44, no. 1, pp. 14–16, Jan. 2021, doi: 10.2337/dci20-0048.
- [29] M. J. Parks, M. C. Kegler, J. H. Kingsbury, and I. W. Borowsky, “Reducing Socioeconomic Disparities in Comprehensive Smoke-Free Rules among Households with Children: A Pilot Intervention Implemented through a National Cancer Program,” *Int J Environ Res Public Health*, vol. 17, no. 18, p. 6787, Sep. 2020, doi: 10.3390/ijerph17186787.
- [30] V. Widyaningsih, T. Mulyaningsih, F. N. Rahmawati, and D. Adhitya, “Determinants of socioeconomic and rural-urban disparities in stunting: evidence from Indonesia,” *Rural Remote*

- Health, vol. 22, no. 1, p. 7082, Mar. 2022, doi: 10.22605/RRH7082.
- [31] B. Vadivel, S. Alam, I. Nikpoo, and B. Ajanil, "The Impact of Low Socioeconomic Background on a Child's Educational Achievements," *Education Research International*, vol. 2023, p. e6565088, Jan. 2023, doi: 10.1155/2023/6565088.
- [32] E. Dennis, P. Manza, and N. D. Volkow, "Socioeconomic status, BMI, and brain development in children," *Transl Psychiatry*, vol. 12, no. 1, Art. no. 1, Jan. 2022, doi: 10.1038/s41398-022-01779-3.
- [33] A.-S. Fisman et al., "Cross-national variation in the association between family structure and overweight and obesity: Findings from the Health Behaviour in School-aged children (HBSC) study," *SSM - Population Health*, vol. 19, p. 101127, Sep. 2022, doi: 10.1016/j.ssmph.2022.101127.
- [34] S. Scrimin, L. Y. Mastromatteo, A. Hovnanyan, B. Zagni, E. Rubaltelli, and T. Pozzoli, "Effects of Socioeconomic Status, Parental Stress, and Family Support on Children's Physical and Emotional Health During the COVID-19 Pandemic," *J Child Fam Stud*, vol. 31, no. 8, pp. 2215–2228, Aug. 2022, doi: 10.1007/s10826-022-02339-5.
- [35] I. Gätjens, M. Hasler, R. di Giuseppe, A. Bosy-Westphal, and S. Plachta-Danielzik, "Family and Lifestyle Factors Mediate the Relationship between Socioeconomic Status and Fat Mass in Children and Adolescents," *Obesity Facts*, vol. 13, no. 6, pp. 596–607, Dec. 2020, doi: 10.1159/000511927.
- [36] Y.-S. Eo and J.-S. Kim, "Family socioeconomic status, parental attention, and health behaviors in middle childhood: A cross-sectional study," *Nursing & Health Sciences*, vol. 22, no. 2, pp. 220–225, 2020, doi: 10.1111/nhs.12661.
- [37] J. Nieczuja-Dwojacka, B. Borowska, A. Budnik, J. Marchewka-Długońska, I. Tabak, and K. Popielarz, "The Influence of Socioeconomic Factors on the Body Characteristics, Proportion, and Health Behavior of Children Aged 6–12 Years," *Int J Environ Res Public Health*, vol. 20, no. 4, p. 3303, Feb. 2023, doi: 10.3390/ijerph20043303.