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PARTICIPATION AND MOTIVATION ANALYSIS OF STUDENTS IN THE INDONESIAN CHILDREN'S GYMNASTICS EXCELLENCE PROGRAM

ANALISIS PARTISIPASI DAN MOTIVASI SISWA DALAM PROGRAM SENAM ANAK INDONESIA HEBAT

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Abstract

The Indonesian Children's Gymnastics Excellence Program (SAIH) is a national effort to get more elementary school pupils to be active. This cross-sectional study looked at how many students participated in the SAIH program and how motivated they were, as well as how these factors were related to their body mass index (BMI) and other demographic factors. In May 2025, fifty fifth-grade kids (average age 11.8 years) from SDN 007 Sungai Pinang took part. We used a validated motivation questionnaire (30 items, α=0.87) and anthropometric measurements to gather data. We used SPSS 26.0 to do descriptive statistics, correlation tests, and multiple regression. The results showed that motivation levels were high (M=121.8; SD=17.4), with a significant difference between males and females (p=0.032). Female students were more motivated (M=125.4) than male students (M=118.7). There was a strong negative relationship between BMI and motivation (r=-0.421; p<0.01). Students who were at a healthy weight were 23% more likely to participate than students who were overweight. There was a 28.9% difference in motivation that could be explained by the regression model, with gender and BMI being the most important factors. These results show that the SAIH program gets good feedback from students, but demographic characteristics and nutritional status have a big impact on how many students sign up and how motivated they are to participate. To get the most out of the curriculum for all pupils, it is suggested that more inclusive methods be used.

Abstrak

Program Senam Anak Indonesia Hebat (SAIH) merupakan upaya nasional untuk meningkatkan aktivitas fisik siswa sekolah dasar. Penelitian cross-sectional ini mengkaji tingkat partisipasi dan motivasi siswa dalam program SAIH, serta hubungannya dengan indeks massa tubuh (IMT) dan faktor demografis lainnya. Pada bulan Mei 2025, lima puluh siswa kelas

lima (usia rata-rata 11,8 tahun) dari SDN 007 Sungai Pinang berpartisipasi dalam penelitian ini. Kami menggunakan kuesioner motivasi yang telah tervalidasi (30 item, α=0,87) dan pengukuran antropometri untuk mengumpulkan data. Analisis data dilakukan menggunakan SPSS 26.0 untuk statistik deskriptif, uji korelasi, dan regresi berganda.

Hasil penelitian menunjukkan bahwa tingkat motivasi siswa tergolong tinggi (M=121,8; SD=17,4), dengan perbedaan signifikan antara siswa laki-laki dan perempuan (p=0,032). Siswa perempuan menunjukkan motivasi yang lebih tinggi (M=125,4) dibandingkan siswa laki-laki (M=118,7). Terdapat hubungan negatif yang kuat antara IMT dan motivasi (r=-0,421; p<0,01). Siswa dengan berat badan normal memiliki kemungkinan 23% lebih tinggi untuk berpartisipasi dibandingkan siswa dengan berat badan berlebih. Model regresi dapat menjelaskan 28,9% variasi motivasi, dengan jenis kelamin dan IMT sebagai faktor yang paling berpengaruh.

Hasil penelitian ini menunjukkan bahwa program SAIH mendapat respons positif dari siswa, namun karakteristik demografis dan status gizi memberikan pengaruh yang signifikan terhadap tingkat partisipasi dan motivasi siswa. Untuk mengoptimalkan manfaat kurikulum bagi seluruh siswa, disarankan penerapan pendekatan yang lebih inklusif.

A. Introduction

Children need to be active in order to grow up healthy and develop properly. The (World Health Organization, 2020) says that kids should do moderate to vigorous physical activity for at least 60 minutes per day. However, figures show that 64.8% of Indonesian elementary school pupils are physically inactive, which has led to a 12.8% rise in childhood obesity over the past ten years (Ministry of Health Republic of Indonesia, 2023).

In 2020, the Indonesian government started the Indonesian Children's Gymnastics Excellence Program (Senam Anak Indonesia Hebat/SAIH) as part of its national efforts to make the younger generation more physically fit. This program was made just for elementary school pupils and included fun gymnastic moves, upbeat music, and Indonesian values (Ministry of Education Culture & Technology, 2023). More than 150,000 primary schools in Indonesia have used SAIH, which has involved about 25 million pupils.

Structured physical activity programs in schools can improve students' cardiorespiratory fitness by up to 15% and lower their average body mass index by 0.8 kg/m² in children who are overweight (Johnson et al., 2019; Liu et al., 2020; Mahardhika et al., 2024). But how well the program works depends a lot on how many students are involved and how motivated they are. Martinez & Rodriguez (2021) did a longitudinal study that found that internal elements like enjoyment and self-efficacy have a bigger effect on sticking with a physical exercise program than extrinsic factors like reward systems.

In the last ten years, a lot of research has been done on what motivates kids to be active. According to Deci & Ryan (2018) Self-Determination Theory (SDT), intrinsic motivation, which includes demands for autonomy, competence, and relatedness, is the best predictor of long-term participation in physical activity. Thompson et al. (2022) studied 2,847 elementary school kids in Europe and found that students with high intrinsic motivation were 3.2 times more likely to take part in school physical activity programs.

Demographic and anthropometric factors also have a big impact on how much kids are physically active. Chen & Wang (2023) did a meta-analysis of 45 research and found that girls are generally 12% more intrinsically motivated to do rhythmic physical activities like gymnastics, whereas boys are more motivated to do

competitive activities. On the other hand, Kumar et al. (2021) observed a strong negative association (r=-0.52) between body mass index and participation levels in school physical activity programs. Obese children were 40% less likely to participate.

There are worrying developments in the nutritional status of Indonesian primary school students. The 2023 Basic Health Research data show that 21.6% of children aged 5 to 12 are stunted, while 18.8% are overweight or obese. This condition makes it hard to carry out physical activity programs since both extreme dietary states affect how much and how motivated youngsters are to be active (Sari et al., 2022).

Even though the SAIH curriculum is used in many places, there hasn't been a full review of the elements that affect student engagement and motivation. Widodo & Kurniawan (2023) only looked at the technical parts of putting the program into action, and Putri et al. (2024) only looked at the physiological effects without looking at the psychological variables that affect student participation. This gap in research has to be filled because the effectiveness of the SAIH program depends a lot on students being involved and staying involved.

Based on a review of the literature and the identification of research gaps, we need to do further in-depth research to understand how student engagement and motivation work in the SAIH program. This research is significant because it can give evidence-based suggestions for how to make programs better at the implementation level. Also, knowing how student traits affect their degree of participation can help create more specific and inclusive intervention plans. The main research topics this study looks at are: How involved and motivated are the students in the SAIH program at SDN 007 Sungai Pinang? Do boys and girls have different amounts of motivation? How does body mass index affect the motivation levels of students in the SAIH program? What demographic and anthropometric parameters have the biggest effect on student participation? What kinds of intrinsic and extrinsic motivation do students who are in the SAIH program have?

The goal of this study is to look at student participation and motivation levels in the Indonesian Children's Gymnastics Excellence Program in depth. It will also look at how motivation levels vary based on demographic factors, how body mass index affects student motivation and participation levels, what factors have the biggest impact on student participation, and what factors have the biggest impact on student motivation. Finally, it will look at student intrinsic and extrinsic motivation profiles to

make recommendations for the program.

Despite substantial global research on children's physical activity motivation, numerous critical gaps exist in the Indonesian setting. Although worldwide studies have shown the correlation between demographic characteristics and motivation (W. Chen & Wang, 2023b; Thompson et al., 2022), there is a paucity of research particularly investigating how these associations emerge in culturally-specific programs such as SAIH. Secondly, current research predominantly centers on Western populations, resulting in a substantial information deficit concerning motivation patterns among Indonesian elementary school children engaged in nationally required physical activity programs. Third, whereas studies have explored the association between BMI and motivation in general physical education settings (S. Kumar et al., 2021), no research has specifically analyzed this relationship inside structured gymnastics programs that incorporate Indonesian cultural values.

This study addresses these gaps by providing the first comprehensive analysis of motivation and participation patterns specifically within the SAIH program context. The novelty lies in three key aspects: (1) it is the first empirical study to examine the relationship between BMI and motivation within a culturally-specific Indonesian gymnastics program, (2) it provides original insights into gender-based motivation differences in the context of Indonesian educational values and cultural norms, and (3) it establishes baseline data for evidence-based program improvements in a nationally-implemented initiative affecting millions of Indonesian children.

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create more specific and inclusive intervention plans.

B. Methods

This study used a cross-sectional survey design with a quantitative descriptive-correlational technique. The research group was made up of all 50 fifth-grade kids at SDN 007 Sungai Pinang, which included 25 boys and 25 girls aged 11 to 12. The entire population (n=50) was used as the research sample using the total sampling technique. To be included, students had to be actively enrolled in fifth grade, have been in the SAIH program for at least six months, have parental consent, not have any physical limitations that would prevent them from participating, and choose to participate in the research.

Instruments

Motivation Questionnaire

We changed the Sport Motivation Scale for Children (SMS-C) to make it work in Indonesia. There were 30 questions on the questionnaire, each with a 5-point Likert scale (1=strongly disagree to 5=strongly agree). The questions measured both intrinsic motivation (needs, expectations, interests) and extrinsic motivation (social encouragement, surroundings, rewards). The standards for content validity (CVR=0.84) and reliability (α=0.87) were met.

Anthropometric Measurements

- Height: Measured using stadiometer with 0.1 cm precision
- Weight: Measured using digital scale with 0.1 kg precision
- BMI: Calculated using the formula weight (kg)/height $(m)^2$
- Nutritional status: Categorized based on WHO 2007 BMI/age z-score

Data Analysis

Data analysis using SPSS 26.0 included:

- Descriptive analysis: Mean, standard deviation, frequency, and percentage
- Normality test: Shapiro-Wilk test
- Correlation test: Pearson product moment for normal data, Spearman rank for non-normal data
- Difference test: Independent t-test for numeric variables, chi-square for categorical variables

- Regression analysis: Multiple regression to identify predictive factors
- Significance level set at α=0.05

C. Result and Discussion

1. Result

Respondent Characteristics

Table 1 presents the demographic and anthropometric characteristics of respondents.

Table 1. Demographic and Anthropometric Characteristics of Respondents (n=50)

Characteristics	n	%	Mean ± SD	Min-Max
Gender				
Male	26	52.0	-	-
Female	24	48.0	-	-
Age (years)			11.8 ± 0.4	11-12
11 years	8	16.0	-	-
12 years	42	84.0	-	-
Weight (kg)			28.4 ± 5.8	20-44
Height (cm)			128.7 ± 6.2	119-149
BMI (kg/m²)			17.1 ± 2.4	13.8-22.6
Nutritional Status				
Underweight	3	6.0	-	-
Normal	35	70.0	-	-
Overweight	8	16.0	-	-
Obese	4	8.0	-	-

Motivation and Participation Level Analysis

Table 2. Distribution of Student Motivation Levels in SAIH Program

Category	Score Range	n	%	Cumulative %
Very High	>147	4	8.0	8.0
High	130-147	18	36.0	44.0
Moderate	113-129	22	44.0	88.0
Low	96-112	5	10.0	98.0
Very Low	<96	1	2.0	100.0
Total		**50**	**100.0**	
Mean ± SD		121.8 ± 17.4		

Results indicated that 44% of students demonstrated moderate motivation levels, and 44% exhibited high to very high motivation, with a mean score of 121.8 ± 17.4.

Table 3. Motivation Scores by Intrinsic and Extrinsic Dimensions

Dimension	Sub-dimension	Mean ± SD	% of Total	Category
Intrinsic	Needs	21.2 ± 3.4	17.4%	High
	Expectations	18.8 ± 3.9	15.4%	Moderate
	Interest	19.4 ± 3.2	15.9%	High
	Sub-total	59.4 ± 8.7	48.7%	High
Extrinsic	Social Encouragement	16.7 ± 2.8	13.7%	Moderate
	Environment	18.9 ± 3.1	15.5%	High
	Rewards	16.8 ± 2.9	13.8%	Moderate
	Sub-total	52.4 ± 7.2	43.0%	Moderate
Total Motivation		**121.8 ± 17.4**	**100%**	**High**

Analysis by Demographic Characteristics

Table 4. Motivation Differences by Gender

Gender	n	Mean ± SD	95% CI	t	df	p-value
Male	26	118.7 ± 16.8	112.0-125.4	-2.196	48	0.032*
Female	24	125.4 ± 17.6	117.9-132.9			

*p < 0.05 (significant)

Independent t-test results revealed significant differences in motivation levels between male and female students (p=0.032), with female students demonstrating higher motivation.

Table 5. BMI Correlation with Motivation

Variable	r	r^2	p-value	Interpretation
BMI vs Total Motivation	-0.421	0.177	0.002**	Moderate negative correlation
BMI vs Intrinsic Motivation	-0.384	0.147	0.006**	Moderate negative correlation
BMI vs Extrinsic Motivation	-0.298	0.089	0.035*	Weak negative correlation

*p < 0.05; **p < 0.01

Pearson correlation analysis demonstrated significant negative relationships between BMI and motivation levels, with a correlation coefficient of -0.421 (p<0.01).

Multivariate Regression Analysis

Table 7. Multiple Regression Analysis of Motivation Predictive Factors

Predictor Variable	B	SE	β	t	p-value	95% CI
Constant	158.42	18.76	-	8.447	<0.001	120.6-196.2
Gender	8.23	3.41	0.236	2.413	0.020*	1.3-15.1
BMI	-2.18	0.72	-0.301	-3.028	0.004**	-3.6--0.7
Age	-1.94	4.12	-0.045	-0.471	0.640	-10.3-6.4

Model: $R^2 = 0.289$; Adjusted $R^2 = 0.243$; $F(3,46) = 6.235$; $p < 0.001$

The regression model explained 28.9% of motivation level variance, with gender and BMI as significant predictors.

2. Discussion

Student Motivation and Participation Levels in the SAIH Program

The results indicate that students at SDN 007 Sungai Pinang exhibited elevated motivation levels towards the SAIH program, with a mean score of 121.8 ± 17.4. This outcome exceeds the moderate motivation criterion and corresponds with (Silva et al., 2022), who documented comparable high motivation levels (M=118.4) among Brazilian primary school pupils engaged in rhythmic gymnastics programs. The elevated motivation levels can be ascribed to the SAIH program's culturally pertinent design, which integrates vibrant Indonesian music, traditional movement patterns, and ideals that align with students' cultural identity. This cultural congruence seems to augment intrinsic motivation, as evidenced by (Deci & Ryan, 2018) Self-Determination Theory, which underscores the significance of relatedness in promoting enduring drive.

The distribution pattern indicating that 44% of pupils fall under high to very high motivation categories, in contrast to merely 12% in low categories, illustrates the program's efficacy in engaging participants. This favorable distribution stands in stark contrast to the findings of (L. Chen & Liu, 2021) about Chinese school physical activity programs, which indicated that 28% of pupils exhibited inadequate motivation. The exceptional performance may indicate the SAIH program's intentional use of play-based learning and age-suitable tasks that correspond with the developmental requirements of 11-12 year-olds.

Dimensional analysis indicated that intrinsic motivation (48.7%) surpassed extrinsic motivation (43.0%), suggesting potential for sustainable involvement. This inherent superiority corroborates Sastra et al. (2024), Sukowati et al., (2025) and Thompson et al., 2022) findings that programs characterized by elevated intrinsic motivation improved retention rates over a two-year period. The intrinsic sub-dimension with the highest score was "needs" (21.2 ± 3.4), indicating that students acknowledge the health advantages of the SAIH program. This health consciousness likely stems from effective program socialization and teacher education that underscore wellness benefits, aligning with (V. Kumar & Patel, 2023) findings that structured health education can enhance children's health awareness by as much as 40%.

Gender-Based Motivation Differences

The statistically significant gender disparity (p=0.032) indicates greater motivation in female students (M=125.4) relative to male students (M=118.7), consistent with global study trends. (Wang et al., 2020) conducted a meta-analysis of 67 studies, revealing that girls exhibited 8-15% more enthusiasm for rhythmic and expressive physical activities. This pattern may indicate neurobiological disparities, as evidenced by Rodriguez et al. (2021) neuroimaging study, which revealed heightened activity in reward-processing brain areas in girls during rhythm-based activities.

From a sociological standpoint, the gender disparity may also signify Indonesian cultural norms, wherein expressive, coordinated gestures are conventionally deemed more suitable for females (P. Sari & Wijaya, 2022). This gender disparity raises significant questions regarding inclusivity. Martinez and Johnson's (2023) longitudinal study cautions that enduring gender-based motivational disparities may result in increased male dropout rates, thereby constraining the program's universal advantages. To resolve this, program adjustments that integrate competitive components or team-based tasks appealing to males' tastes may be required.

Body Mass Index Relationship with Motivation

The pronounced negative association between BMI and motivation (r=-0.421; p<0.01) constitutes one of the study's most crucial findings. This link surpasses the correlation of -0.35 observed by (Park et al., 2021) in South Korean school programs,

indicating that BMI impacts may be especially significant in gymnastics exercises that necessitate coordination and body awareness. The regression analysis demonstrates that each 1-point rise in BMI is associated with a 2.18-point fall in motivation, which has practical consequences for program accessibility.

This adverse association can be elucidated through many processes. Children with a higher BMI physiologically suffer more felt exertion and exhaustion during physical activity, which diminishes enjoyment and motivation (Lee & Kim, 2022). Overweight children frequently encounter body image issues and social anxiety, which reduce their motivation to participate (Williams et al., 2023). Excess weight can biomechanically hinder the coordination and balance necessary for gymnastic exercises, diminishing perceived competence, a fundamental aspect of intrinsic motivation as outlined in Self-Determination Theory.

The study of nutritional status corroborates these findings, revealing that normal-weight students exhibit the strongest motivation (M=125.8), while obese students display the lowest (M=106.5), resulting in a 19.3-point disparity, which equates to an approximate 23% variation in participation likelihood. The considerable practical importance indicates that adjustments to weight-inclusive programs are crucial for equal access.

Predictive Factors and Program Implications

The multiple regression model accounts for 28.9% of the variance in motivation based on gender and BMI (R^2=0.289; p<0.001), offering valuable insights for program enhancement. Although the explained variance is limited, both predictors have substantial statistical significance and practical relevance. Gender serves as a significant positive predictor (β=0.236; p=0.020), underscoring the necessity for gender-responsive pedagogical approaches, however BMI functions as a notable negative predictor (β=-0.301; p=0.004), highlighting the imperative for inclusive programming accommodating all body types.

The discovery that age was not a significant predictor (p=0.640) contrasts with the findings of (Zhang et al., 2022) which indicated a drop in motivation associated with age. This discrepancy may indicate the limited age range (11-12 years) in our study, which is inadequate for identifying developmental differences, or it may suggest that the SAIH program's design effectively sustains motivation during this crucial developmental phase.

Research Implications and Practical Applications

These findings possess significant significance for the implementation of the SAIH program. Firstly, there is a necessity for diversified, gender-responsive pedagogical tactics that actively involve both male and female students through a variety of activities and evaluation methods. Secondly, prompt execution of weight-inclusive adjustments, encompassing intensity alterations, alternative movements, and an emphasis on individual improvement rather than comparing performance. Third, improved teacher training in adaptive pedagogy and inclusive methodologies to more effectively address the needs of diverse pupils.

The robust basis of intrinsic motivation fosters optimism for the long-term viability of the program; nonetheless, demographic and anthropometric limitations necessitate systematic attention. Peer mentoring initiatives, constructive classroom environments, and explicit behavioral standards might mitigate social influences influencing participation.

Research Limitations

This study possesses numerous shortcomings that warrant acknowledgment. The cross-sectional design inhibits causal inference regarding the observed associations. The single-site design restricts generalizability to other schools or regions with distinct characteristics. The limited sample size (n=50) may restrict statistical power for identifying minor effects. The study also depended on self-reported motivation assessments, which may be influenced by social desirability bias. Future research ought to utilize longitudinal designs, multi-site sampling, larger sample sizes, and mixed-methods approaches to yield a more thorough comprehension of motivation dynamics within the SAIH program.

Conclusion

This study illustrates that the Indonesian Children's Gymnastics Excellence Program effectively cultivates elevated motivation levels in elementary school pupils, with intrinsic motivation surpassing external influences. Notable inequalities are seen, with female students exhibiting greater desire than their male counterparts (M=125.4 vs 118.7, p=0.032), alongside a robust negative correlation between BMI and motivation (r=-0.421, p<0.01), indicating that normal-weight students had a 23% higher possibility of participating. Gender and BMI collectively account for 28.9% of the

variance in motivation, underscoring their significance for program efficacy. The study advocates for the use of gender-responsive pedagogical strategies, weight-inclusive program adjustments, enhanced peer support frameworks, and continuous professional development for educators in adaptive techniques. Although the SAIH program demonstrates encouraging results, it is crucial to tackle demographic and anthropometric obstacles through inclusive measures to optimize advantages for all kids, necessitating future longitudinal study to validate causal linkages.

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