

Physical Activity in the Form of Children's Games and Motor Ability in a Group of Indigenous People in Indonesia

Gusril¹, Willadi Rasyid², Sari Mariati³, Ahmad Chaeroni¹, Fitriah Arrasyih^{2,*}, Vitor Pires Lopes⁴, Kamal Talib⁵, Fan Hong⁶

¹Department of Health and Recreation, Faculty of Sports Science, Universitas Negeri Padang, Indonesia

²Department of Sports Education, Faculty of Sports Science, Universitas Negeri Padang, Indonesia

³Department of Sports Coaching Education, Faculty of Sports Science, Universitas Negeri Padang, Indonesia

⁴Department of Sports Science, Research Center in Sports Sciences, Health Sciences and Human Development (CIDESD), Portugal

⁵School of Maritime Business and Management, Universiti Malaysia Terengganu, Terengganu, Malaysia

⁶Bangor University, United Kingdom

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Abstract Physical Activity (PA) in the Form of Children's Games and motor chops are important to know beforehand on, especially grouping grounded on demographic orders and locales. This study aims (1) To explore the play conditioning of the SAD group in Riau Province, SAD Mentawai in West Sumatra Province, SAD in Jambi Province; (2) To explore the motor chops of the Sakai SAD Riau Province, Mentawai SAD West Sumatra Province, SAD Jambi Province; (3) To reveal the effectiveness of play conditioning between the Sakai SAD Riau Province and the Mentawai SAD West Sumatra Province, as well as the SAD Jambi Province; (4) To reveal the effectiveness of motor chops between the Sakai SAD Riau Province and the Mentawai SAD West Sumatra Province, as well as the SAD Jambi Province. The exploration system used is quantitative exploration using a relative approach. The exploration instruments used comported of play exertion instruments and the Scoot Motor Capability motor capability test was used to measure motor chops. The data analysis used was Multivariate

Analysis of Variance (MANOVA) with the help of SPSS 23 interpretation. Based on data analysis and discussion, the results of the exploration can be concluded as follows: (1) Physical activity in the form of playground activities of SAD Sakai group in Riau Province is in the moderate category, playground conditioning of SAD Mentawai group in West Sumatra Province is in the moderate category, playground conditioning of SAD Kubu group in Jambi Province is in the moderate category; (2) Motor skills of SAD Sakai group in Riau Province is in the moderate category, motor skills of SAD Mentawai group in West Sumatra Province is in the poor category, motor skills of SAD Kubu group in Jambi Province is in the moderate and poor category; (3) Physical activity in the form of play activities in SAD Sakai in Riau Province is more effective than SAD Mentawai in West Sumatra Province and SAD Kubu in Jambi Province; (4) There is no significant difference between the motor abilities of SAD Sakai in Riau Province, SAD Mentawai in West Sumatra Province, and SAD Kubu in Jambi Province.

Keywords Physical Activity, Playing Activities, Motor Ability

1. Introduction

The Kubu Tribe as known as *Suku Anak Dalam* (SAD) group is an isolated tribe living in the forest on the island of Sumatra who lives in the wilderness whose daily life is hunting animals, farming and fishing in rivers and gathering. SAD is living soberly according to their respective conditions. Moreover, their lives are getting more desperate because most of the forest has been planted with oil palm, of course this will cause the life of the tribe of children to be increasingly threatened and even extinct due to the need for food from wild forests which is also the main trigger [1]. The SAD group on the island of Sumatra is in Riau Province which is called the Sakai SAD group and in West Sumatra province it is called the Mentawai SAD, while in Jambi province the Kubu SAD group.

The SAD group of Sakai, Mentawai, Kubu has started to have a desperate life because the wilderness where they live has been cut down to make way for an oil palm plantation which is currently booming. The longer the culture of SAD Sakai is getting eroded because it is eroded by the progress of time. The Sakai SAD children are currently mingling with the children around the Sakai tribal complex who have been given housing in groups. Play activities that are carried out will certainly also affect the motor skills of SAD [2]. Previous research has highlighted the crucial role of play in the development of motor skills among children in various cultural contexts. According to Piaget's theory of cognitive development [3], play serves as a fundamental mechanism for children to explore their environment, develop cognitive abilities, and enhance motor skills through hands-on experiences. Moreover, studies on indigenous communities have emphasized the significance of culturally embedded play activities in fostering motor skills and overall child development [4]. In addition, traditional games played by children have been contaminated with new game adaptations due to accidental socialization [5]. Although the impact of socialization itself also results in the loss of the uniqueness of their native tribe [6]. In the context of SAD, understanding the impact of play activities on motor skills requires a culturally sensitive approach. Research by Harkness and Super [7] underscores the importance of considering cultural variations in child-rearing practices and play patterns. Furthermore, studies by Göncü and Gaskins [8] emphasize the cultural specificity of play and its contribution to the acquisition of motor skills in diverse cultural settings. This theoretical framework underscores the need for an in-depth exploration of play activities within the specific cultural context of SAD to comprehensively understand their influence on motor skill

development.

Mentawai SAD which is located in the Mentawai Islands is quite advanced because most of them already live in groups of houses in each village. Most Mentawai SAD have attended elementary school education available in each region such as: Elementary School, Middle School, High School in South Siberut, Madobag Elementary School and schools in other islands. They have studied Physical Education, Sports and Health and the school where they study has a flat field. Of course this really helps develop play activities and motor skills. Training activities carried out for 12 weeks provide a significant increase in the area of motor skills in children [9], especially those aged 4.5-6 years [10]. However, this particular training for SAD requires a specific form and strategy to implement the desired program.

Kubu SAD Jambi Province lives in the middle of a wilderness which is also surrounded by oil palm plantations. The location of SAD Kubu which is still well preserved is the Bukit 12 Protection Forest which is a cultural heritage that should not be disturbed and turned into oil palm plantations. This location is still natural and is inhabited by SAD Kubu who also still uphold the cultural customs of the Kubu people. It is important to maintain culture because it will enrich the biodiversity of the country [11]. SAD This faction finds it difficult to join other groups, especially with people who are not SAD. They live more in their groups and do not want to attend education [12]. Even though the role of education is important for every human being to become more advanced in future civilizations. The positive role of public education and the importance of political support for the provision of supporting facilities and infrastructure are urgently needed [13]. Only a small part of the education. SAD Kubu is indeed left behind from other SAD who have been able to socialize with the community around where they live. Because living in the forest certainly lacks the knowledge, skills and attitudes required in playing activities and of course this has an impact on his motor skills.

Play activity is an activity that provides physical fitness and psychological pleasure through physical activity. Pleasure arises when those who play or all those who play really do it. If a member of the game doesn't do it seriously, it means he is not happy playing or maybe he is not in good physical condition [14]. In the contemporary discourse on play and well-being, scholars have recognized the importance of considering emotional expressions during play as indicators of mental and physical health [15]. Understanding the emotional dimensions of play is crucial, especially in indigenous communities like SAD, where cultural norms and practices shape the ways in which emotions are expressed and understood during play. Recent research by Lester and Russell [16] has explored the emotional dynamics of play and its connection to physical well-being. Their study delves into the role of play in emotional development and highlights the significance of

emotional expression as a reflection of an individual's overall happiness and health. Additionally, considering the cultural context, the work of Suwignyo et al. [17] on indigenous play practices in Indonesia offers valuable insights into the nuanced relationship between play engagement, happiness, and physical condition. This research underscores the importance of culturally sensitive approaches in understanding the multifaceted nature of play in indigenous communities.

Motoric ability is said to be the quality of a person's ability that can make it easier to perform movement skills. Motor ability is also a general quality that can be improved through practice [18]. On the other hand, motor skills are individual abilities that underlie the appearance of various motor skills [19]. Therefore, motor skills are seen as the cornerstone of future success in performing sports skills tasks. Someone who has high motor skills is thought to be more successful in completing special motor skill tasks. A person's motor abilities are different and depend on the amount of movement experience that is mastered.

This research on children's play-based physical activity and motor skills among indigenous tribes in Indonesia can provide valuable insights into how local cultures and environments influence children's physical development and motor skills. By understanding the interactions between traditional games, physical activity and local culture, we can develop a more holistic approach in promoting the health and development of children in these communities. This research can also provide a basis for designing educational programs that are in line with local cultural values, creating environments that support children's physical development, and promoting healthy lifestyles among indigenous tribes in Indonesia.

The research on Physical Activity in the Form of Children's Games and Motor Skills in a Group of Indigenous People in Indonesia provides significant benefits in various aspects. Firstly, it provides an in-depth understanding of the rich local culture of indigenous people, exposing traditional games and physical activities that play an important role in children's development. Furthermore, it can have a positive impact on the health and motor skills of children in these communities. By understanding the relationship between traditional games, physical activity and motor skills, this research opens up opportunities to design more effective and contextualized educational programs, directly improving the well-being of indigenous children.

In addition, this research empowers communities by actively involving them in the research process. Community participation can ensure that proposed solutions and interventions truly reflect local needs and values. This research also has the potential to serve as a foundation for the development of a culture-based education model that can be adopted by educational institutions across Indonesia.

2. Method

The research method used is quantitative research using a comparative approach [20]. A comparative approach is a way to understand and know something (science) by using a comparison. What will be compared in this case is the play activities and motor skills of SAD from 3 provinces in Indonesia (Sakai SAD in Riau Province, Kubu SAD in Jambi Province and Mentawai SAD in West Sumatra Province). Comparative research is a type of descriptive research that wants to find answers fundamentally about cause and effect, by analyzing the factors that cause the occurrence or appearance of a particular phenomenon. It compares two or more groups of a particular variable.

The population of this study is SAD on the island of Sumatra in Riau Province which is called the Sakai SAD group and in West Sumatra province it is called Mentawai SAD, while in Jambi province it is Kubu SAD. The sample was determined using purposive sampling and the samples obtained were 30 Sakai SAD, 30 Mentawai SAD and 26 Kubu SAD children.

Measuring the variables of Physical Activity in the Form of Children's Games and Motor Skills in a Group of Indigenous People in Indonesia can involve a number of measurement methods and instruments that can provide a holistic picture of these aspects. Some methods that can be considered include:

Field Observation: Involving researchers in direct observation of children in indigenous communities while playing traditional games or performing physical activities. Using checklists or observation sheets to record the type of game, duration of time, intensity of physical activity and other variations [21,22]. **Measurement of Motor Skills:** Using motor skill measurement tools such as the Movement Assessment Battery for Children (MABC) or the Test of Gross Motor Development (TGMD). Involves measuring various aspects of motor skills such as balance, coordination, and reaction speed [23,24]. **Interviews and Questionnaires:** Using interviews with parents, teachers, or local stakeholders to obtain information on children's physical activity levels outside of observation times. Develop a questionnaire to explore community perceptions and experiences related to traditional games and children's physical activity [25]. **Physical Intensity Measurement:** Using physical intensity measurement devices such as accelerometers or pedometry to measure children's physical activity levels. Analyze measurement data to obtain a quantitative picture of physical activity levels [26]. **Group Participation and Observation:** Engage groups of children in focus group discussions to find out their preferences for play and physical activity. Observe group dynamics during play to understand how physical activity can influence social interactions and motor skills [27]. The data analysis technique uses Oneway Mannova with the help of the Statistical Package for the Social Sciences (SPSS) version 23 [28,29].

3. Result

3.1. Playing Activities (Description of SAD Sakai Group Playing Activities Riau Province, Mentawai and Kubu)

Descriptive statistical research data obtained the lowest value of 93, the highest value of 133, the average is 113 and

the standard deviation is 9. The frequency distribution data is presented in the following Table 1.

Grounded on Table 1, it can be seen that 1 person in the veritably good order with a chance of 3.33, 8 people in the good order with a chance of 26.67, 11 people in the moderate order with a chance of 36.67, 8 people in the poor order with a chance of 26.67, and veritably poor order 2 people with a chance of 6.67. For more details, see figure 1.

Table 1. Frequency Distribution of SAD Sakai Playing Activities in Riau Province, Mentawai and Kubu

	Interval Class	Frequency	Presentation (%)	Category
Sakai (Riau Province)	>126,5	1	3.33	Very Good
	117,5-126	8	26.67	Good
	108,5-117	11	36.67	Moderate
	99,5-108	8	26.67	Poor
	< 99	2	6.67	Very Poor
	Total		30	100
Mentawai (West Sumatra Province)	>114	3	10	Very Good
	106-113	6	20	Good
	98-105	11	36.67	Moderate
	89-97	8	26.67	Poor
	<87	2	6.67	Very Poor
Total		30	100	
Kubu (Jambi Province)	>102.5	2	7.69	Very Good
	94.5 – 102	5	19.23	Good
	85.75 - 94	10	38.46	Moderate
	77.25 – 85	9	34.61	Poor
	<77	0	0	Very Poor
Total		26	100	

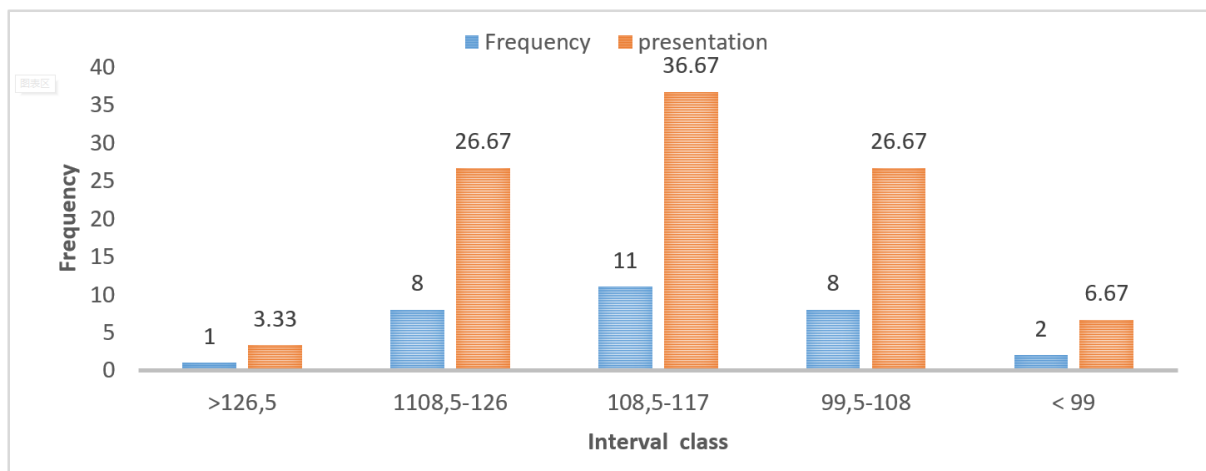


Figure 1. Graph of SAD Sakai Playing Activity Histogram Riau Province

The descriptive statistical research data obtained the lowest value is 83, the highest value is 118, the average is 102 and the standard deviation is 8.4. Grounded on Table 1, it can be seen that 2 people are veritably good order with a chance of 10, good order is 6 people with a chance of 20, moderate order is 11 people with a chance of 36.67, poor order is 8 people with a chance of 26.67, and veritably poor order 2 people with a chance of 6.67. For more details, see figure 2.

The description of the research data obtained the lowest

value of 78, the highest value of 129, the average is 114 and the standard deviation is 11. Frequency Distribution of Children's Playing Activities in the Kubu, that category is very good 2 people with a percentage of 7.69%, good category 5 people with a percentage of 19.23%, moderate category 10 people with a percentage of 38.46%, poor category 6 people with a percentage of 34.61%, and very poor category 0 people with a percentage of 0%. For more details, see figure 3.

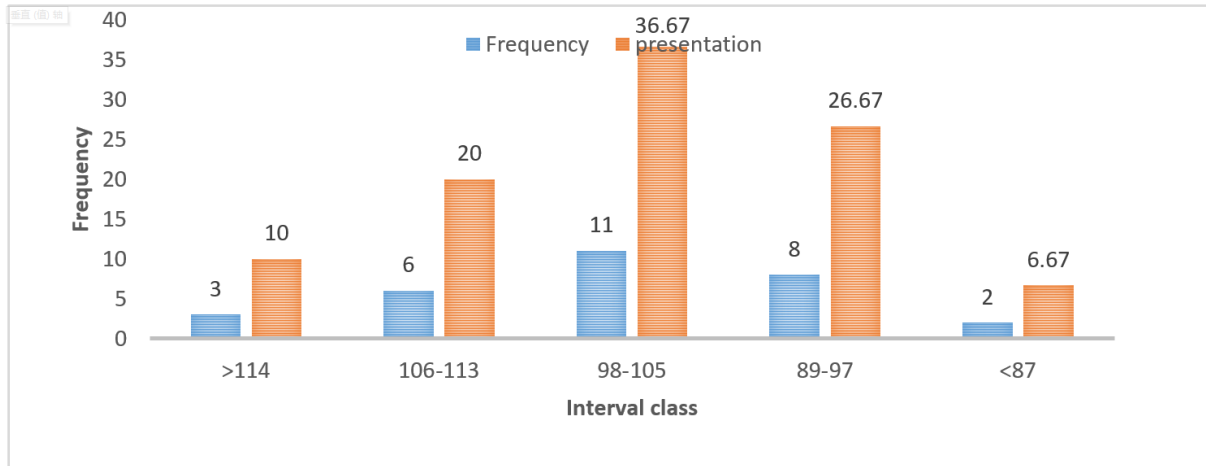


Figure 2. Histogram of SAD Mentawai Playing Activities

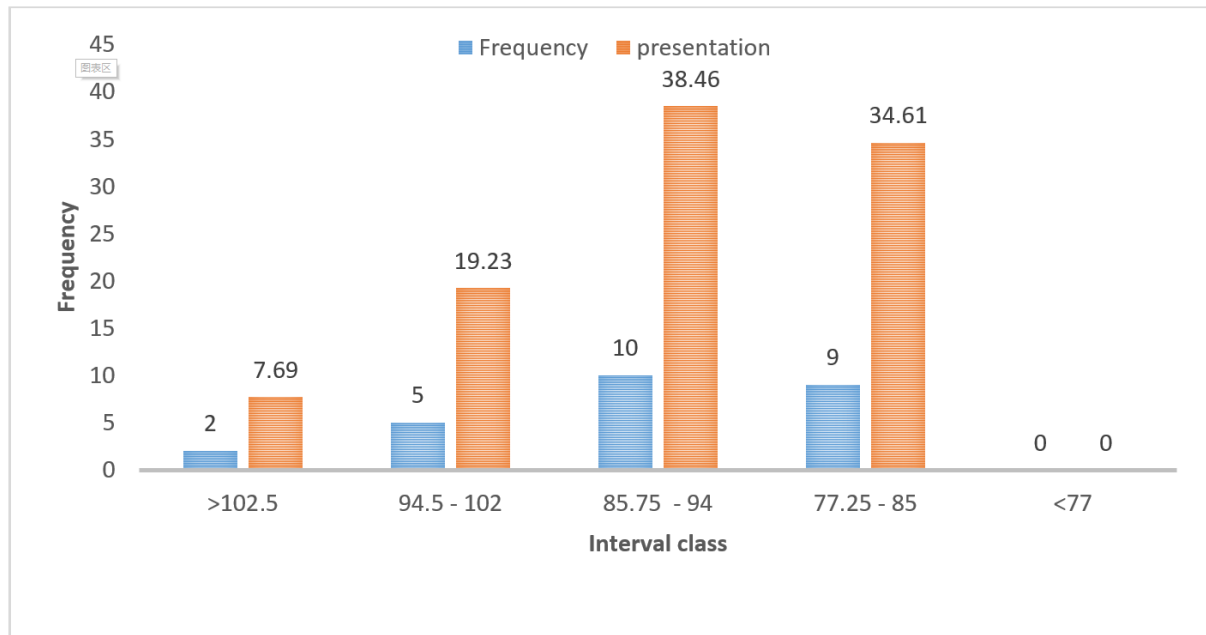


Figure 3. Histogram of SAD Tribe Kubu

3.2. Motor Ability (Description of the SAD Sakai Group in Riau Province, Riau Province, Mentawai and Kubu

Based on the results of studying the mobility of natural resources in Sakai, Riau province, the highest score is 66.68, the lowest score is 33.87, the average score is 50, the standard deviation is 7.47. Frequency distribution data is

presented in table 2.

Grounded on Table 2, it can be seen that 2 children in the veritably good order with a chance of 6.67, in the good order 7 people with a chance of 23.33, in the moderate order 11 people with a chance of 36.67, in the poor order 8 people with a chance of 26.67, and veritably poor order 2 people with a chance of 6.67. For more details, see figure 4.

Table 2. Frequency Distribution of Sakai’s SAD Motor Ability, Mentawai and Kubu

	Interval Class	Frequency	Presentation (%)	Category
Sakai (Riau Province)	> 61.19	2	6.67	Very Good
	53.73 - 61.19	7	23.33	Good
	46.27 - 53.73	11	36.67	Moderate
	38.81 - 46.27	8	26.67	Poor
	< 38.81	2	6.67	Very Poor
	Total		30	100
Mentawai (West Sumatra Province)	> 62.33	2	6.67	Very Good
	52.11 - 62.33	10	33.33	Good
	45.89 - 52.11	7	23.33	Moderate
	37.67 - 45.89	11	36.67	Poor
	< 37.67	0	0	Very Poor
Total		30	100	
Kubu (Jambi Province)	> 62.26	4	15.38	Very Good
	54.09 - 62.26	2	7.69	Good
	45.92 - 54.09	10	38.46	Moderate
	37.75 - 45.92	10	38.46	Poor
	< 37.75	0	0	Very Poor
Total		30	100	

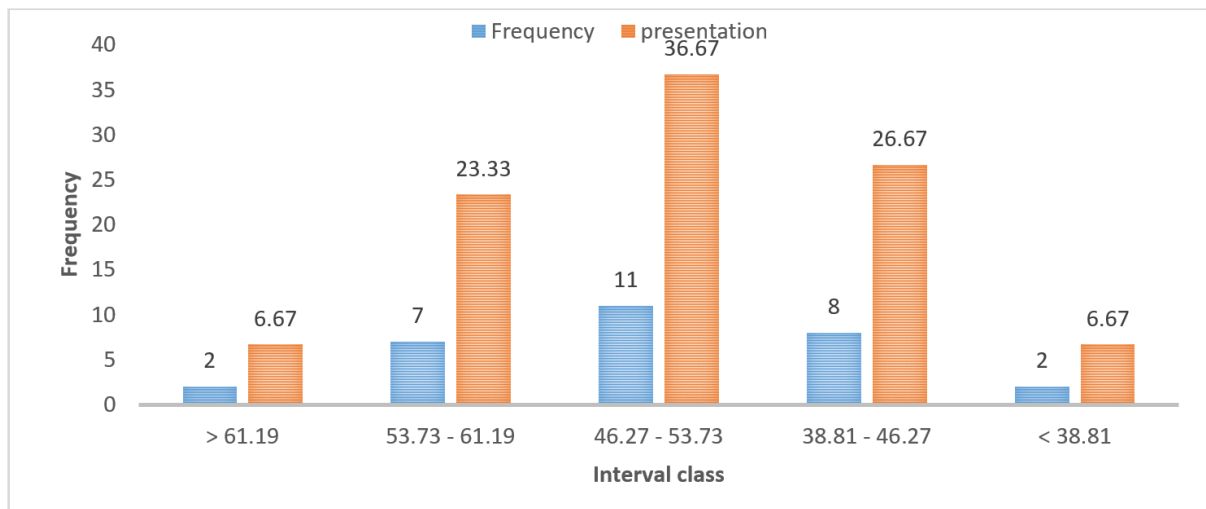


Figure 4. Histogram of SAD Sakai Motor Ability

Based on the results of research on Mentawai Natural Resources Motoric Ability, the highest score was 68, the lowest score was 38.34, the average was 50, the standard deviation was 8.22.

Based on Table 2 Distribution of Motoric Ability Frequency Distribution of Children in Mentawai, it can be seen that the children in the very good category are 2 people with a percentage of 6.67%, the good category is 10 people with a percentage of 33.33%, the moderate category is 7 people with a percentage of 13.33%, the poor category is 11 people with a percentage of 36.67 %, and very poor category 0 people with a percentage of 0%. For more

details, see figure 5.

Grounded on the results of exploration on the Motoric Capability of Kubu Natural coffers, the loftiest score was 69.44, the smallest score was 40.18, the normal was 50, the standard divagation was 8.17.

Grounded on Table 2, it can be seen that 4 children in the veritably good order with a chance of 15.38, in the good order 2 children with a chance of 7.69, in the moderate order 10 children with a chance of 38.46, in the poor order 10 people with a chance of 38.46, and veritably poor order 0 people with a chance of 0%. For more details, see figure 6.

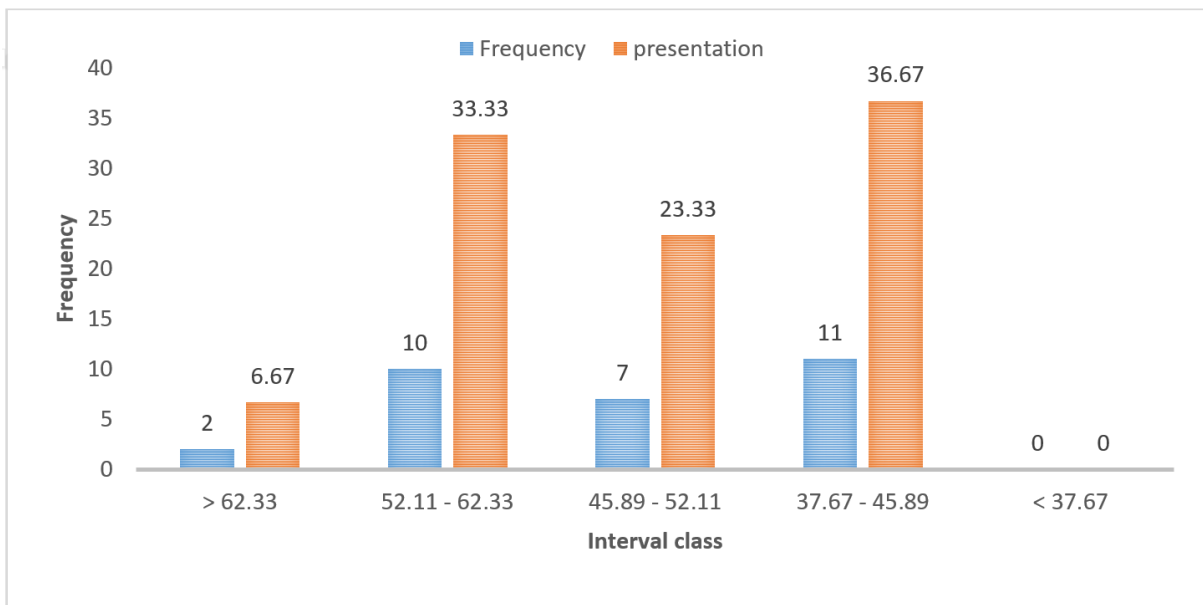


Figure 5. Mentawai SAD Motor Ability Histogram

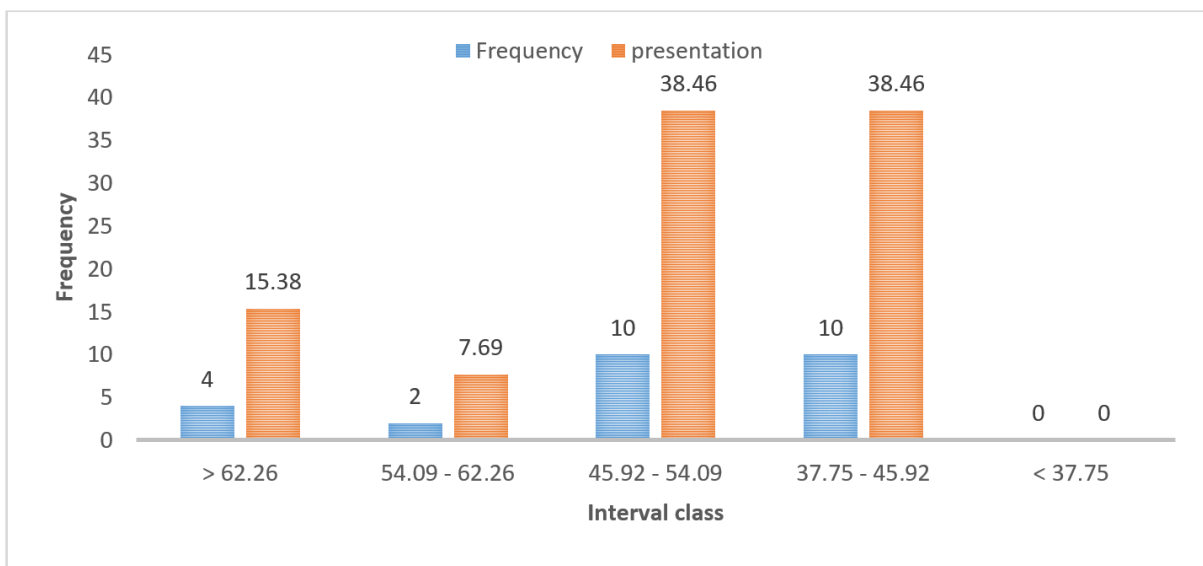


Figure 6. Kubu SAD Motor Ability Histogram

3.3. More Effective SAD Group Playing Activities

Based on the results of data analysis with SPSS version 20, the results of the normality test above obtained a significant shapiro-wilk value in the playing activity data of SAD Sakai, Mentawai, and Kubu respectively 0.809, 0.630 and 0.03. sig. greater than sig level (0.005), the playing activity data is normally distributed. Then the homogeneity of variance test, the data is said to be homogeneous if the significance (sig.) is greater than the level of significance. From the homogeneous test table, it can be seen that the significance value of 0.693 is greater than 0.05 or 0.693 greater than 0.05. So it can be concluded from the three SAD playing activity data that the variance data is the same (homogeneous).

Based on the Annova output above, it is known that the calculated F value is 51,065 greater than F_{table} 3,354 with a significance of 0.000 smaller than 0.05 so it can be concluded that the average SAD playing activity is significantly different, in a sense, the playing activity of the Sakai SAD group in Riau Province is more effective than the SAD group. SAD Mentawai and Kubu. The results of the one way Annova analysis of the following SAD playing activities:

Table 3. Result of one way annova analysis

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7523.686	2	3761.843	51.065	.000
Within Groups	6114.372	83	73.667		
Total	13638.058	85			

3.4. The Motor Skills of the SAD Group Are More Effective

Based on the results of data analysis with SPSS version 23. The results of the normality test above obtained a significant shapiro-wilk value in the motoric ability data of SAD Sakai, Mentawai, and Kubu respectively 1.00, 0.124 and 0.09. sig. greater than sig level (0.05), then the SAD motor ability data is normally distributed. Then the homogeneity of variance test, the data is said to be homogeneous if the significance (sig.) is greater than the level of significance. From the homogeneous test table it can be seen that the significance value of 0.618 is greater than 0.05 or 0.618 greater than 0.05. It can be concluded from the three SAD motor ability data that the variance data is the same (homogeneous).

Based on the output of the annova above, it is known that the calculated F value is 0.000 greater than F table 3.354 with a significance of 1.00 smaller than 0.05 so it can be concluded that the average SAD motor ability is not different and not significant between groups. The results of the one way Annova analysis of the following SAD motor skills:

Table 4. Result of One Way Annova Analysis

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.000	2	.000	.000	1.000
Within Groups	5239.767	83	63.130		
Total	5239.767	85			

4. Discussion

Based on data analysis on play activity and motor skills by group, there was no significant difference between play activity and motor skills of SAD Sakai Riau Province, SAD Mentawai West Sumatra Province, and SAD Kubu Jambi Province. This may be due to the nutritional status of each SAD being in the category of not meeting the requirements for a balanced menu because SAD live in the forest with all the limitations in terms of nutritional knowledge, play activities and motor skills. SAD each group did physical activity only to meet their daily needs. Such as running is done only to hunt wild deer, pigs, snakes and other animals, climbing to catch birds to eat, and swimming is done only to find fish for food. In detail, it is added that the average playing activity of SAD Sakai is higher than SAD Mentawai and SAD Kubu. Meanwhile, there is no significant difference in the average motor ability. The SAD, conforming of the traditional game of dust ball, putting nails in a bottle, throwing and catching small balls, dragon snakes, rubber jumps, long jumps, without a prefix, and throwing the ball with a break- swerve run. Traditional games and play activities hold cultural, social, and developmental significance in many indigenous societies. In the context of motor skill development, research by Gaskins [30] highlights the cultural specificity of children's daily activities and play patterns in Mayan villages. While the cultural context may differ, the emphasis on traditional play activities as essential components of child development resonates across various indigenous communities. In a broader Southeast Asian context, studies on traditional games and physical activities shed light on their impact on motor skills. For example, research by Othman [31] explores the significance of traditional games in promoting physical activity among children in Malaysia. The findings emphasize the potential of traditional games to enhance gross motor skills and contribute to the overall well-being of children in indigenous communities.

In the absence of specific literature on the Suku Anak Dalam Sakai's traditional games, understanding the broader cultural and developmental implications of traditional play activities in indigenous settings provides a foundational framework for appreciating the significance of these activities among the Suku Anak Dalam Sakai.

The results of Kalsum's exploration [32] state that play exertion and motor chops of the children in Sakai, Riau Province, are in the low order. Added by Anderson [33]

stated that the playing exertion and motor chops of the SAD Kubu were in the low order. On the other hand, children's play conditioning and motor chops in Mentawai are in the good order. Play exertion is a robotic exertion carried out by children in their terrain by involving imagination, appearance, all passions, hands or the whole body through PA. The tribe of children in the environment where they live in the forest, this makes children adjust their movements and adapt to natural conditions to get a sense of pleasure. As stated, children who live in the mountains or forests will have good motor skills when compared to children who live in cities, in coastal areas because their basic movements are formed by different nature [34]. Of course this greatly affects the growth and development of physical and motor skills. Recent literature emphasizes the profound impact of traditional play activities on physical and motor skill development in diverse cultural contexts. Research by Bedard, Nichols, Barbosa, Filho, and da Costa [35] investigates the influence of traditional games on the motor skills of Brazilian indigenous children. The findings highlight the positive correlation between engagement in traditional games and the enhancement of motor skills, emphasizing the cultural significance of these activities in promoting physical development. Additionally, a study by Chen et al. [36] explores the relationship between traditional play activities and physical fitness in a sample of Taiwanese indigenous children. The research underscores the role of traditional games in contributing to overall physical fitness, which encompasses motor skills, coordination, and agility. Understanding the growth and development of physical and motor skills in indigenous communities requires a holistic approach that considers the cultural context of play activities [37]. Research on the impact of traditional games on motor skills provides valuable insights into the intricate connections between cultural practices and physical development, which are particularly relevant for the SAD Sakai.

The activity of playing SAD Sakai Riau Province is still moderate, this is due to many factors that influence it. One of the main factors is their economic demands that require them to find a source of life to survive. Family socio-economic status (SES) is a significant predictor of children's early learning performance, while little is known about the relationship between family SES and children's play [38]. The Sakai people have many forms of livelihoods, this is because the economic system carried out by the Sakai people is influenced by the conditions of the area they live in or that they inhabit, therefore the Sakai people have many forms of livelihoods to support their families, among the many livelihoods carried out by the Sakai people include farming, hunting and fishing in the river. In addition, their environment is very limited, resulting in limited space for play. How can children play freely when nature does not allow it?

Physical activity in the form of play among SAD Sakai, SAD Mentawai and SAD Kubu raises the complexity of understanding the influence of culture and local context on

the choice and impact of these activities. For example, the literature suggests that traditional games can play a crucial role in children's motor development and community health across different indigenous groups [39]. However, attempts to directly compare their effectiveness between specific tribal groups may face methodological constraints and data limitations. Furthermore, research on physical activity and traditional games in indigenous tribes in Indonesia shows great diversity in preferences, intensity, and purpose of physical activities [40]. Therefore, it is important to consider that the effectiveness of an activity may be related to the cultural context, local wisdom, and a deep understanding of the values placed on the activity within the tribal group.

The lack of significant differences between the motor abilities of SAD Sakai, SAD Mentawai and SAD Kubu provides a basis for exploring aspects that influence motor development in the context of indigenous tribes in Indonesia. According to the literature, factors such as physical environment, living habits, and cultural heritage may play a role in shaping the motor skills of indigenous children [41]. For example, research by Ong et al. [39] on physical activity of indigenous children in Sabah highlighted the positive impact of traditional games on motor development. Although not directly related to SAD Sakai, SAD Mentawai, or SAD Kubu, this study may provide insight into the potential positive role of traditional activities in the motor development of children in indigenous tribal communities. Furthermore, the literature suggests that disparities in motor abilities between specific tribal groups may reflect uniformity in lifestyle, daily activities, or local environmental influences [42, 43]. This underscores the importance of understanding cultural distinctiveness and local context in understanding the motor skills of indigenous children.

5. Conclusions

Based on data analysis and discussion, the results of the exploration can be concluded as follows: (1) Physical activity in the form of playground activities of SAD Sakai group in Riau Province is in the moderate category, playground conditioning of SAD Mentawai group in West Sumatra Province is in the Moderate category, playground conditioning of SAD Kubu group in Jambi Province is in the Moderate category; (2) Motor skills of SAD Sakai group in Riau Province is in the Moderate category, motor skills of SAD Mentawai group in West Sumatra Province is in the Poor category, motor skills of SAD Kubu group in Jambi Province is in the Moderate and poor category; (3) Physical activity in the form of play activities in SAD Sakai in Riau Province is more effective than SAD Mentawai in West Sumatra Province and SAD Kubu in Jambi Province; (4) There is no significant difference between the motor abilities of SAD Sakai in Riau Province, SAD Mentawai in West Sumatra Province, and SAD Kubu in Jambi Province.

The research theme of Physical Activity in the Form of Children's Games and Motor Skills in a Group of Indigenous People in Indonesia is very interesting and relevant, especially to understand the dynamics of local culture in the development of indigenous children. Here are some suggestions for further research: Further investigate cultural factors that may influence the motor development of indigenous children. This could involve an in-depth analysis of the role of traditional games, cultural norms related to physical activity, and the way local living habits influence motor development. Design and implement an intervention program aimed at improving physical activity and motor development of indigenous children. Monitor the long-term impact of this program and evaluate its effectiveness.

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REFERENCES

- [1] Cawthorn DM., Hoffman LC., "The bushmeat and food security nexus: A global account of the contributions, conundrums and ethical collisions," *Food Res Int*, vol. 76, pp. 906–925, 2015. DOI: 10.1016/j.foodres.2015.03.025.
- [2] Jin, H., Hua, J., Shen, J., Feng, L., & Gu, G., "Status and Determinants of Motor Impairment in Preschool Children from Migrant Families in China," *Iran J Pediatr*. Vol. 26, no. 5, e5427, 2016. DOI: 10.5812/ijp.5427.
- [3] Piaget, J. Play, "Dreams and Imitation in Childhood," W. W. Norton & Company. 1962.
- [4] Gaskins, S., "Children's daily activities in a Mayan village: A culturally grounded description," *Cross-Cultural Research*, vol. 34, no. 4, pp. 375–389, 2000.
- [5] Welis W., Darni, Khairuddin, Rifki MS., Chaeroni A., "Effect of Stunting Handling and Physical Activity on Motor Ability and Concentration of School Children," *International Journal of Human Movement and Sports Sciences*, Vol. 10, No. 5, pp. 1040-1046, 2022. DOI: 10.13189/saj.2022.100522.
- [6] Wahab E. O., Odunsi S. O., Ajiboye O. E., "Causes and Consequences of Rapid Erosion of Cultural Values in a Traditional African Society", *Journal of Anthropology*, vol. 2012, Article ID 327061, 2012. DOI: 10.1155/2012/327061.
- [7] Harkness, S., & Super, C. M., "Culture and Parental Behavior: Expectation of Parental Solidarity in the United States and Japan," *Journal of Comparative Family Studies*, vol. 33, no. 4, pp. 495–517, 2002.
- [8] Göncü, A., & Gaskins, S., "Play and development: Evolutionary, sociocultural, and functional perspectives," Psychology Press, 2007.
- [9] Roth K., Ruf K., Obinger M., Mauer S., Ahnert J., Schneider W., Graf C., Hebestreit H., "Is there a secular decline in motor skills in preschool children?" *Scand. J. Med. Sci. Sports*. vol. 20, no. 4, pp. 670–678, 2010. DOI: 10.1111/j.1600-0838.2009.00982.x.
- [10] Sutapa P., Pratama KW., Rosly MM., Ali SKS., Karakauki M., "Improving Motor Skills in Early Childhood through Goal-Oriented Play Activity," *Children (Basel)*, vol. 8, no. 11, 994, 2021. DOI: 10.3390/children8110994.
- [11] Copesey, N. & Rowe C., "The Preservation and Enhancement of Cultural Heritage in Mediterranean," Birmingham: European Union, 2011.
- [12] Targowski, Andrew., "The Civilization Approach to Education in the 21st Century," *Comparative Civilizations Review: Vol. 65*, no. 65, Article 9. 2011.
- [13] Westphal, J W., "The Politics of Infrastructure," *Social Research*, vol. 75, no. 3, pp. 793–804, 2008. <http://www.jstor.org/stable/40972090>.
- [14] Umar., Alnedral., Ihsan, N., Mario, D. T., & Mardesia, P., "The effect of learning methods and motor skills on the learning outcomes of basic techniques in volleyball," *Journal of Physical Education and Sport*, vol. 23, no. 9, Art 282, pp. 2453–2460, 2023. DOI: 10.7752/jpes.2023.09282.
- [15] Russell, J. A., "Emotion, core affect, and psychological construction," *Cognition and Emotion*, vol. 14, no. 3, pp. 371–419, 2000.
- [16] Lester, S., & Russell, W., "Children's Right to Play: An Examination of the Importance of Play in the Lives of Children Worldwide," *Working Papers in Early Childhood Development*, 50. 2008.
- [17] Suwignyo, H., & Suwignyo, R., "The Philosophy of Play of Javanese Ethnic Culture in Indonesia," *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*, vol. 2, no. 2, pp. 1025–1033, 2019.
- [18] Welis, W., Darni, Khairuddin, Rifki, M.S., Chaeroni, A., "Effect of Stunting Handling and Physical Activity on Motor Ability and Concentration of School Children," *International Journal of Human Movement and Sports Sciences*, vol. 10, no. 5, pp. 1040–1046, 2022, DOI: 10.13189/saj.2022.100522.
- [19] Gusril., Rasyid W., Komaini A., Chaeroni A., Kalsum U., "The Effect of Physical Activity-Based Physical Education Learning Model in the Form of Games," *International Journal of Human Movement and Sports Sciences*, vol. 10, no. 5, pp. 906-912, 2022. DOI: 10.13189/saj.2022.100506.
- [20] Hadi. S. *Metodologi Research*. Yogyakarta: Andi Yogyakarta. 2000.
- [21] Johnson, B. L. & Jack, K. N., "Practical Measurement For Evaluation in Physical Education 4 nd ed," Macmillan Publishing Company. 1986.
- [22] Henderson, S. E., & Sugden, D. A., "Movement Assessment Battery for Children - Second Edition (MABC-2)" Pearson Assessment. 2007.
- [23] Gusril., Muthohir, T. C. *Metodologi Penelitian Ilmu Keolahrgaan*. Depok: Raja wali Press. 2019.
- [24] Ulrich, D. *Test of Gross Motor Development - Second Edition (TGMD-2)*. PRO-ED. 2000.

- [25] Trost, S. G., McIver, K. L., & Pate, R. R., "Conducting accelerometer-based activity assessments in field-based research," *Medicine and Science in Sports and Exercise*, vol. 37, no. 11 Suppl, pp. S531-S543. 2005.
- [26] National Institute of Health (NIH). *Youth Compendium of Physical Activities*. 2019.
- [27] Dinas Kesehatan Republik Indonesia. *Pedoman Pemantauan Tumbuh Kembang Anak*. 2016.
- [28] Tania, P., Anna, R., & Peter Petocz, "Statistical Laboratories Using Minitab, SPSS and Excel: A Practical Comparison," *TEACHING STATISTICS: An International Journal for Statistics and Data Science Teaching*, vol. 24, no. 2, pp. 68–75. 2002. DOI: 10.1111/1467-9639.00089.
- [29] Joachim, K., "Statistical methods to examine differences in the rating of soft-drinks among different groups of consumers", *Food Quality and Preference*, vol. 13, no. 7-8, pp. 555–559. 2002. DOI: 10.1016/s0950-3293(02)00039-3.
- [30] Gaskins, S., "Children's daily activities in a Mayan village: A culturally grounded description," *Cross-Cultural Research*, vol. 34, no. 4, pp. 375–389, 2000.
- [31] Othman, S., Borges, W. G., "Shareholder Activism in Malaysia: Is it Effective?" *Procedia - Social and Behavioral Sciences*, vol. 172, pp. 427–434, 2015. DOI: 10.1016/j.sbspro.2015.01.396
- [32] Kalsum U. *Pengembangan Model Materi PJOK anak Suku Dalam Sakai Propinsi Riau*. 2020.
- [33] Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., et al, "A Taxonomy for Learning, Teaching, and Assising: A Revision of Bloom's Taxonomy of Educational Objectives". New York: Longman. 2021.
- [34] Susanto, N., Nurhasan., Mintarto, E., "The Effect of Learning Models on Creativity, Knowledge, and Big Ball Game Skills in High School Students," *Journal of Hunan University Natural Sciences*, vol. 48, no. 8, 2021.
- [35] Pranoto, N. W, Chaeroni, A, Rifki, M. S., Ilham, A., Susanto, N., "The Effects of Inactivity During The COVID-19 Pandemic on the Psychomotor Skills of Kindergarten Students," *Ann Appl Sport*, vol. 11, no. 2. 2023. DOI: 10.52547/aassjournal.1162.
- [36] Bedard, C., Nichols, D. L., Barbosa, C. L., Filho, D. R., & da Costa, R. V., "Traditional Games, Motor Skills, and Physical Fitness in Brazilian Indigenous Children," *Journal of Physical Activity and Health*, vol. 18, no. 4, pp. 416–423. 2021, DOI: 10.1123/jpah.2019-0464.
- [37] Chen, Y. W., Lin, H. H., Chang, W. H., Wang, C. H., & Hong, J. L., "The Relationships between Participation in Traditional Games and Physical Fitness among Indigenous Children in Taiwan," *Sustainability*, vol. 12, no. 6, pp. 2332. 2020, DOI: 10.3390/su12062332.
- [38] Chaeroni, A., Kusmaedi, N., Ma'mun, A., Budiana, D., "Physical Fitness and Mental Health in Urban and Rural Areas," *Malaysian Journal of Medicine and Health Sciences*, vol. 17, pp. 66–71. 2021.
- [39] Li S, Sun J, Dong J., "Family Socio-Economic Status and Children's Play Behaviors: The Mediating Role of Home Environment," *Children*, vol. 9, no. 9, 1385, 2022. DOI: 10.3390/children9091385.
- [40] Ong, S. H., Tan, S. S., & Ong, A. S., "The Role of Traditional Games in the Physical Activity Level among Indigenous Children in the Interior Region of Sabah," *International Journal of Physical Education, Fitness and Sports*, vol. 6, no. 1, pp. 57–64. 2017.
- [41] Rocha, V. M., Benedetti, T. R. B., Marcon, S. S., & Rodrigues, L. F., "Physical activity in indigenous populations in Brazil: A systematic review," *Ciência & Saúde Coletiva*, vol. 26, pp. 4971–4984, 2021. DOI: 10.1590/1413-81232021269.29252020.
- [42] Lopes, L., Rodrigues, L. P., Maia, J., Malina, R., Baxter-Jones, A., Thomis, M., ... & Beunen, G., "Motor coordination, physical activity and fitness as predictors of longitudinal change in adiposity during childhood," *Scandinavian Journal of Medicine & Science in Sports*, vol. 30, no. 7, pp. 1299–1310, 2020. DOI: 10.1111/sms.13643.
- [43] Kitsao-Wekulo, P. K., Holding, P. A., Taylor, H. G., Kvalsvig, J. D., & Connolly, K. J., "Determinants of variability in motor performance in middle childhood: a cross-sectional study of balance and motor co-ordination skills," *BMC Psychol*. vol. 1, no. 1, 2013. DOI: 10.1186/2050-7283-1-29.
- [44] Komaini, A., Kiram, Y., Gusril, Mario, D. T., Handayani, S. G., & Erianjoni., "Fundamental Movement Skills in Children in Mentawai Islands: Indigenous Tribes in Indonesia," *Physical Education Theory and Methodology*, vol. 23, no. 4, pp. 520–530, 2023. DOI: 10.17309/tmfv.2023.4.05.