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Traditional Filipino Games as Therapeutic Tools: Boosting Lower Extremities Gross Motor Skills in Children with Autism Spectrum Disorder

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Abstract

Motor dysfunction in children with Autism Spectrum Disorder (ASD) significantly complicates daily activities and contributes to social-behavioral challenges. While standard therapies are effective, they often lack cultural relevance or accessibility in low-resource settings. This study scrutinized the therapeutic potential of traditional Filipino games—specifically *Piko* and *Patintero*—as culturally grounded interventions to enhance lower extremity gross motor skills. Utilizing a quantitative experimental design, children with ASD (ages 6–12, GMFCS Level I) were divided into two groups. Group A (n=50) received an active range of motion exercises (AROMEs) integrated with traditional Filipino games, while Group B (n=50) received AROMEs only. Assessment was conducted *via* Functional Muscle Testing (FMT) to evaluate balance, coordination, and agility over a two-week intervention period. Statistical analysis employed the Wilcoxon Signed-Rank Test for within-group comparisons and independent samples t-tests for between-group differences. Baseline assessments indicated that both groups initially exhibited "weak functional motor performance". Post-intervention, both groups demonstrated statistically significant improvements in FMT scores ($p < .001$). Group A achieved a higher mean percentage improvement (43%) compared to Group B (32%); however, this numerical gain did not reach statistical significance ($p = 0.147$) within the two-week timeframe. Both conventional physical therapy and the integration of traditional Filipino games are effective in improving lower extremity motor function in children with ASD. Although no statistical superiority was found for the integrated approach, the higher numerical gains in Group A suggest that play-based, culturally familiar activities may enhance therapeutic motivation and engagement. These findings support the inclusion of traditional games as complementary tools in pediatric rehabilitation to promote functional independence and cultural preservation.

Keywords: Autism Spectrum Disorder (ASD); Traditional Filipino Games; Piko; Patintero, Gross Motor Skills; Standard Physical Therapy; Pediatric Rehabilitation; Range of Motion Exercise

Introduction

Childhood is a critical developmental period defined by exploration and play, yet children with Autism Spectrum Disorder (ASD) often face significant motor deficits—emerging as early as six months—that impede their daily activities and social participation. These gross motor challenges, ranging from poor motor planning to postural instability, scale in severity with age and act as catalysts for social-communicative dysfunction by depriving individuals of essential sensorimotor inputs. While conventional physical therapy, such as active range of motion exercises (AROMEs), is effective, many current structured interventions lack accessibility or cultural relevance, particularly in low-resource settings. This study aims to bridge the gap between traditional cultural practices and contemporary rehabilitation by investigating the therapeutic potential of traditional Filipino games like *Piko* and *Patintero*. By targeting key motor skills such as balance, coordination, and agility through play-based interventions, the research seeks to equip children with ASD, promote functional independence, and offer a cost-effective, culturally grounded approach to pediatric physical therapy.

Methods

The study utilized a quantitative experimental design to examine the efficacy of integrating traditional Filipino games—specifically *Piko* and *Patintero*—with standard physical therapy

interventions to enhance lower extremity gross motor skills in children with Autism Spectrum Disorder (ASD). The research was conducted at the HOPE Intervention Center in Calamba, Laguna, focusing on a population of children aged 6 to 12 years with a confirmed ASD diagnosis and a Gross Motor Function Classification System (GMFCS) Level I. Participants were selected through purposive sampling to ensure they met specific inclusion criteria, including the ability to perform basic motor tasks like hopping and walking with minimal assistance. The sample was divided into two groups: Group A (n=50) received an active range of motion exercises (AROMEs) integrated with traditional games, while Group B (n=50) received only standard AROMEs. Data were collected over a two-week intervention period consisting of three 30–45 minute sessions per week, using Functional Muscle Testing (FMT) as the primary instrument to assess balance, coordination, and agility. Statistical analysis involved the percentage change formula to quantify improvements, the Wilcoxon Signed-Rank Test for within-group pre- and post-test comparisons, and independent sample t-tests to evaluate differences in percentage improvement between the two groups.

Results and Discussion

This chapter evaluates the effectiveness of integrating Piko and Patintero with AROMEs in improving lower extremity gross motor skills in children with ASD using FMT scores. Descriptive and inferential statistics (Wilcoxon Signed-Rank Test and independent t-test) were used to analyze within- and between-group differences.

Table 1 shows comparable baseline FMT scores for Group A (M = 1.90, SD = 0.505) and Group B (M = 2.00, SD = 0.606), both interpreted as weak functional motor performance. This indicates that participants started at similar motor levels, ensuring fair comparison. These findings align with evidence that children with ASD commonly exhibit delays in balance, coordination, and motor planning.

Table 2 shows that both groups improved after intervention, with Group A (M = 2.62, SD = 0.635) slightly higher than Group B (M = 2.56, SD = 0.675), indicating gains toward functional motor performance. This suggests that while AROMEs alone are effective, integrating traditional Filipino games may provide additional benefits in improving balance, coordination, and overall motor skills in children with ASD.

Table 3 shows significant improvements in FMT scores for both groups (W = 0.000, p < .001), confirming that each intervention effectively enhanced motor performance. This indicates improved balance, coordination, and functional mobility, with game-based therapy likely boosting engagement, while AROMEs alone also remain effective.

Table 4 shows that although Group A had higher improvement (43%) than Group B (32%), the difference was not statistically significant (p = 0.147). This suggests both interventions are effective, but the added benefit of traditional games may require a longer duration to show significant superiority. Overall, integrating culturally relevant games may still enhance engagement and functional gains in children with ASD.

Conclusions and Recommendations

Both conventional physical therapy and the integration of traditional Filipino games were effective in improving lower extremity gross motor skills in children with ASD, as evidenced by significant improvements in FMT scores within both groups. While no statistically significant difference was found between groups, the slightly higher gains in the game-based group suggest that incorporating culturally relevant activities like Piko and Patintero may enhance motivation, engagement, and motor learning. Limitations such as the short intervention period, variability in motor responses, and possible ceiling effects may have influenced the results. Overall, the findings support the use of play-based, culturally adapted interventions as a valuable complement to standard therapy, with recommendations for their integration in clinical practice, home programs, policy development, and future studies with longer durations and broader outcome measures.

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Table 1: Mean FMT Scores of Group A and Group B Before Intervention.

Group	N	Mean	SD	Interpretation
Group A	50	1.90	0.505	Weak functional baseline motor performance
Group B	50	2.00	0.606	Weak functional baseline motor performance

Table 2: Mean FMT Scores of Group A and Group B After Intervention.

Group	N	Mean	SD	Interpretation
Group A	50	2.62	0.635	Improved toward functional level
Group B	50	2.56	0.675	Improved toward functional level

Table 3: Within-Group Comparison of FMT Scores Before and After Intervention.

Comparison	Test	Statistic	p-value	Mean Difference	Interpretation
Group A Before vs After	Wilcoxon Signed-Rank	0.000	< .001	-1.000	Significant improvement
Group B Before vs After	Wilcoxon Signed-Rank	0.000	< .001	-1.000	Significant improvement

Table 4: Independent Samples t-test on Percent Change Between Group A and Group B.

Variable	t	df	p-value	Mean Difference	Interpretation
Percent Change	1.461	98	0.147	11.00	No significant difference

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