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Analyzing the effects of play behavior on the motor skills of the preschoolers

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ABSTRACT

This study analyzed the relationship between play behavior and motor skills development in preschoolers, focusing on gross and fine motor abilities. Utilizing a quantitative correlational research design, data were gathered from 100 preschoolers at Bais City Pilot School in Bais City, Negros Oriental, Philippines. Three teachers observed and assessed these children to evaluate various types of play behavior and their influence on physical development. The ECCD Checklist, a validated set of observation tools, measured competencies in motor skills such as balance, coordination, agility, and precision in the preschoolers evaluated. The children's demographic profile was outlined through frequency counts and weighted means, and Pearson's correlation was used to explore the relationship between play behavior and motor skills among preschoolers. The findings revealed a significant moderate positive correlation between play behavior and gross motor skills. In contrast, a weak yet significant positive association was observed between play behavior and fine motor skills. These results highlight that play is essential in enhancing motor skills development in early childhood, particularly related to gross motor abilities. This emphasizes the need to incorporate play-based learning into preschool education and create specific activities that strengthen gross and fine motor skills. Consequently, it is recommended that teachers be trained in designing and implementing play-based activities, promoting inclusive play environments, and encouraging both structured and unstructured play at home and in educational settings. Further research is advocated to expand knowledge on play's developmental benefits and provide practical guidance for educators, parents, and policymakers.

Keywords: early childhood education, play behavior, motor skills, quantitative correlational research, Bais City Pilot School

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INTRODUCTION

The early childhood period is critical to motor development, which underlies children's physical growth, autonomy, and overall health. As children in the Philippines play a mix of indigenous games, modern play activities, and early learning environments, the role of play in motor development is essential. As a natural and critical component of childhood, play develops physical skills and reflects the cultural context in which children grow.

Bone (2021) considers play an activity that children do consciously, highlighting children's learning and awareness of their world. This highlights the stimulating and developmental aspect of play. The study proves that different types of games—whether organized or unorganized, individual or social—greatly advance motor skills development, including coordination, balance, and fine motor ability. Arhin (2023) states that play-learning plays a vital role in early childhood learning, providing children with an essential and enjoyable way of discovering and interacting with their surroundings. Play-learning has been recognized internationally as a core role in early childhood development (UNICEF, 2018; Hirsh-Pasek et al., 2009). This play type may be structured or unstructured and is linked to acquiring particular motor skills. Structured play encourages gross motor development through goal-directed movements (Goodway & Branta, 2003), while unstructured play enables children to be independent explorers, developing their gross and fine motor skills (Burdette & Whitaker, 2005). Whether structured or unstructured play has a greater role in developing motor skills remains a question.

In contrast to conventional pedagogical strategies that focus on memorization and repetitive exercises, play-based learning fosters experiential activities that will spark children's imagination, inquiry, and critical thinking. Physical exercises like running, jumping, climbing, and manipulating objects provide Filipino children with basic motor skills needed in everyday functioning and school work. However, the effects of various forms of play on preschool children's motor development in the Philippines remain unknown. There is a pressing need to research how traditional Filipino games, such as patintero and sipa, and modern play activities impact gross and fine motor development, with specific emphasis on strength, coordination, and accuracy. Incorporating indigenous and traditional games into the Philippine early childhood education system can establish cultural identity while enhancing motor and mental abilities (SEAMEO INNOTECH, 2016). For example, patintero improves dynamic balance and motor agility (Matsumoto et al., 2016), while sungka facilitates fine motor development (Case-Smith & O'Brien, 2015) via visual tracking, timing, and hand-eye coordination mechanisms (Payne & Isaacs, 2017). There is a growing concern in early childhood education in the Philippines about decreasing playtime because of the increasing focus on school readiness. Many schools are now into systematic learning rather than playtime, which may deny children more time for physical activity and possibly delay the development of motor skills (Hewes, 2006). Ultimately, this shift challenges the well-rounded growth of children in the Philippines because, after all, play—especially outdoor and active play—is an essential ingredient in their daily lives and heritage.

Preschoolers in Bais City Pilot School are less engaged in playing when there are overemphasized talks on academics. Most of them are passive, except when someone encourages them to interact with their classmates. Most of them were more talkative in playing alone than being together with classmates, and most struggled with performing the assigned activities. This was why researchers sought to know the impact of preschoolers' play behavior on their motor skills, providing teachers with more information on establishing these through various play activities.

This study analyzed how multiple types of play impact the development of motor skills among preschoolers in the Philippines.

This research aims to share valuable insights to inform educators, caregivers, and policymakers by exploring the intersection between play and motor skills in a community context. It shall offer empirically grounded recommendations for creating play-learning environments that support physical development and overall health among young Filipino children. With this study, the article seeks to advance the importance of play in early childhood education, where Filipino children acquire essential physical motor skills for their lifelong health, school preparedness, and everyday life. The article points out that incorporating various play activities in early education can improve interpersonal relationships, preserve cultural heritage, and foster emotional resilience in children.

For example, the blending of classic games like sungka or tumbang preso and modern playground games can be beneficial in inspiring children's empowerment, giving them great encouragement for self-confidence and strength in physical condition. Balanced treatment between children's intellect and body growth serves them adequately to face the academic-social environment they are placed in and gives them a good foundation for development. This study was focused on the play behavior and motor skills of preschoolers. The study aimed to evaluate 100 preschoolers through parents' answers on their demographic profile and through teachers' evaluation on their level of play behavior and motor skills. The primary respondents of this study were the three teachers and 100 parents of the preschoolers, while the preschoolers served as the subjects of the study. Through the evaluation tool, teachers provided key observations and assessments of the children's play behaviors and motor skill development within the preschool setting.

Statement of the problem

This research analyzed the effects of play behavior on the motor skills of preschoolers in Bais City Pilot School, Division of Bais City, for the School Year 2024–2025, as the basis for the development of an action plan. Specifically, it sought answers to the following questions:

1. What is the profile of the preschoolers in terms of age and gender, parents' highest educational attainment, and number of siblings?
2. As perceived by the teachers, what is the level of play behavior of the preschoolers in terms of reticent behavior, solitary-passive behavior, solitary-active behavior, social play, and rough play?
3. As perceived by the teachers, what is the level of the motor skills of the preschoolers in terms of gross motor skills and fine motor skills?
4. Is there a significant relationship between the preschoolers' level of play behavior and their level of motor skills?
5. Based on the findings of the study, what action plan for teachers can be formulated?

METHODOLOGY

The study employed a descriptive–correlational research design to examine the effect of play behavior on the motor skill proficiency of preschoolers. This design was deemed appropriate as it allowed for the systematic collection and analysis of data to determine the relationship

between play behavior and motor skill development without manipulating the variables involved. Descriptive–correlational research is commonly used to identify patterns, trends, and associations among naturally occurring variables (Polit & Beck, 2021). In this study, the design enabled the examination of various forms of play behavior in relation to preschoolers' gross and fine motor skills, thereby providing a comprehensive understanding of how these variables are interconnected within a natural educational setting.

The choice of this research design was further justified by the ethical and practical considerations inherent in studying young children. Observing naturally occurring play behaviors and corresponding motor skills ensured that the study did not interfere with the children's routine activities or developmental processes. Through this approach, the richness and complexity of preschool play and motor development were captured, generating findings that could inform educational practices and developmental interventions while preserving the authenticity of children's play experiences.

The study focused on preschool children enrolled in a preschool center, with a total of 100 preschoolers serving as the research participants. These children were selected through random sampling from a population of 150 or more preschoolers in the center to ensure representativeness. The selection was also influenced by observations that many children exhibited limited active play behaviors, largely due to the academic nature of most classroom activities. The preschool children were the primary subjects of the study, while three preschool teachers and the parents of the children served as key informants. Parents provided demographic information, including their highest educational attainment and the number of siblings of the preschoolers, while teachers assessed the children's play behaviors and motor skills based on their daily classroom interactions and observations.

Data were gathered using two structured survey questionnaires. The first questionnaire was answered by parents and focused on the demographic profile of the preschoolers, specifically parents' highest educational attainment and the number of siblings. The second questionnaire was completed by teachers and consisted of standardized instruments used to assess play behavior and motor skills. Play behavior was measured using a 30-item scale developed by Coplan and Rubin (1988), while motor skills were assessed using a set of instruments consisting of 14 items for gross motor skills and 11 items for fine motor skills developed by the Council for the Welfare of Children and UNICEF Philippines (2011). All questionnaire items were rated using a five-point Likert scale ranging from Strongly Agree to Strongly Disagree, allowing for consistent quantification of responses.

Prior to data collection, the researcher sought and obtained formal approval from the Schools Division Superintendent to conduct the study. Upon approval, an orientation was conducted for both teacher and parent respondents to explain the objectives of the study, the significance of their participation, and the proper procedures for answering the questionnaires. Ethical considerations were observed throughout the research process by ensuring informed consent, voluntary participation, and confidentiality of respondents' information. After the administration of the questionnaires, sufficient time was provided for respondents to complete them, after which the accomplished instruments were retrieved for data processing.

The collected data were then organized, tabulated, and prepared for analysis and interpretation. Appropriate statistical tools were used to describe the demographic profile of the preschoolers, determine the levels of play behavior and motor skills, and examine the relationship between these variables. Through systematic analysis, the study generated empirical evidence that

served as the basis for meaningful conclusions and the formulation of an action plan aimed at enhancing play opportunities and motor skill development among preschoolers.

RESULTS AND DISCUSSION

Following the descriptive–correlational methodology outlined in the preceding chapter, this section presents and interprets the results derived from the study involving 100 preschoolers enrolled at Bais City Pilot School, Division of Bais City, Negros Oriental, during the School Year 2024–2025. Using a random sampling approach, data were gathered through standardized parent- and teacher-rated questionnaires that measured demographic characteristics, levels of play behavior, and motor skill development. Teachers assessed play behavior using the Coplan and Rubin (1988) scale and motor skills using the Council for the Welfare of Children and UNICEF Philippines (2011) instrument, while parents provided demographic information. Descriptive statistics, including weighted means and standard deviations, were employed to describe levels of play behavior and motor skills, and Pearson's product–moment correlation coefficient was used to determine the relationship between play behavior and motor skill development. The discussion that follows is grounded strictly on the data generated from these procedures and interprets the findings in relation to the objectives of the study and existing theoretical and empirical literature.

Profile of the preschoolers

The demographic profile of the preschoolers provides an essential context for understanding variations in play behavior and motor skill development. In terms of age and gender, the majority of the participants were five years old, accounting for 87.00% of the total sample, with a relatively balanced gender distribution consisting of 47.00% females and 40.00% males within this age group. Preschoolers aged six comprised 11.00%, while those aged seven and above represented only 2.00% of the respondents. Overall, females slightly outnumbered males, with 54.00% females and 46.00% males. This near parity in gender representation strengthens the interpretive validity of the findings, as it minimizes gender bias and allows observations to reflect play behavior and motor skills across both sexes. Consistent with Polit and Beck (2021), heterogeneous samples in terms of age and gender enhance generalizability and allow for the identification of group-specific developmental patterns. Developmental literature likewise emphasizes that both age and gender are relevant factors influencing children's play preferences, activity levels, and motor skill acquisition (Trawick-Smith, 2014), making their inclusion critical in interpreting the present findings.

Parental educational attainment further contextualized the preschoolers' developmental environment. The data revealed that a substantial proportion of parents had attained higher education, with 55.00% identified as college graduates and an additional 41.00% having reached college level. High school graduates accounted for 44.00%, while parents with elementary-level education constituted the smallest proportion at 13.00%. This relatively high level of parental education suggests an environment that may be conducive to developmental support, as prior studies have consistently shown that parents with higher educational attainment tend to be more engaged in their children's schooling and developmental activities (Coleman, 2018). Educated parents are often better equipped to provide learning materials, structured activities, and supportive interactions that enhance both cognitive and motor development. Conversely, lower parental

education has been associated with fewer developmental resources and limited exposure to enriching play opportunities (Rubin, Coplan, & Bowker, 2004). These findings underscore the compensatory role of teachers, particularly in supporting preschoolers whose home environments may offer fewer opportunities for play-based motor development.

The number of siblings further shaped the social and developmental context of the preschoolers. Most participants (61.00%) had one to two siblings, while 19.00% had three to four siblings, 12.00% were only children, and 8.00% had five or more siblings. Children from smaller families may benefit from greater parental attention and access to resources, which can positively influence opportunities for guided play and motor practice (Barger, McLaughlin, & Smith, 2019). In contrast, children from larger families may experience reduced individualized attention but potentially greater exposure to peer-like interactions through sibling play, which can enhance social competence and gross motor development (Berk, 2009; Rubin et al., 2004). These patterns highlight the nuanced role of family structure in shaping play behavior and motor development, reinforcing the importance of classroom environments that provide equitable play opportunities regardless of family background.

Level of play behavior of the preschoolers

The analysis revealed that preschoolers demonstrated very high levels of play behavior across all five components, with a grand weighted mean of 4.82 and a grand standard deviation of 0.47, indicating both intensity and consistency of engagement in play. Reticent behavior recorded the lowest yet still very high mean of 4.40, suggesting that while behaviors such as observing peers without joining, remaining unoccupied, or acting as spectators were prevalent, they coexisted with more active forms of play. High ratings for behaviors such as “watches or listens to other children without trying to join in” (WM = 4.76) and “takes on the role of onlooker or spectator” (WM = 4.39) reflect tendencies toward social wariness or shyness, which have been associated with temperament and parenting styles (Rubin, Burgess, & Hastings, 1997). Although reticent behavior can limit opportunities for social and motor engagement, it does not necessarily imply maladjustment at the preschool level; rather, it signals the need for supportive environments that gently encourage participation without coercion.

Solitary-passive play emerged as one of the most prominent behaviors, with an aggregate weighted mean of 4.92 and a low standard deviation of 0.31, indicating uniform engagement in quiet, independent activities such as drawing, puzzle-solving, and object exploration. High ratings for “plays alone, exploring toys or objects” (WM = 4.94) and “plays by himself/herself, drawing or doing puzzles” (WM = 4.93) suggest strong concentration, creativity, and fine motor engagement. Consistent with Coplan and Rubin (1998), solitary-passive play often reflects preference rather than social withdrawal and can support attentional control and emotional regulation. However, excessive reliance on solitary play may reduce opportunities for peer interaction, emphasizing the need for balanced classroom practices that integrate both independent and social activities.

Similarly, solitary-active play registered a very high aggregate mean of 4.91 (SD = 0.38), indicating frequent independent engagement in physically active behaviors such as running, pretend play, and sensory-motor activities. These behaviors support gross motor development by enhancing balance, coordination, and body awareness (Gallahue et al., 2012). High ratings for “plays by himself/herself, engaging in simple motor activities” (WM = 4.92) and “plays alone in an active fashion, enjoying an activity for the physical sensation it creates” (WM = 4.92) highlight

the developmental value of independent physical exploration. Nonetheless, the absence of peer interaction in these activities suggests potential limitations in developing cooperative motor skills, reinforcing the need for guided social play opportunities (Coplan & Rubin, 2010).

Social play emerged as the most dominant play behavior, with the highest aggregate mean of 4.94 and a standard deviation of 0.24. Preschoolers frequently engaged in cooperative and interactive play, as evidenced by high ratings for "talks to other children during play" and "plays make-believe with other children" (both WM = 4.95). These findings align with developmental theories emphasizing the role of social play in fostering communication, cooperation, and complex motor coordination (Gallahue et al., 2012). Through group games and pretend play, children practice synchronized movements, role negotiation, and shared problem-solving, all of which enhance both gross and fine motor skills.

Rough play also registered a very high aggregate mean of 4.92 (SD = 0.27), indicating that playful physical interactions such as mock fighting and rough-and-tumble play were common among the preschoolers. These activities are widely recognized as developmentally appropriate and beneficial when properly supervised, as they promote strength, agility, self-regulation, and social negotiation (Pellegrini & Smith, 1998). The prevalence of rough play underscores its importance as a natural avenue for gross motor skill refinement and emotional regulation, provided that safety and boundaries are maintained.

Taken collectively, the uniformly very high ratings across all play behavior components reflect a rich and diverse play environment. Each type of play contributes uniquely to development: social and rough play primarily enhance gross motor and social competencies, while solitary-passive and solitary-active play support fine motor control, creativity, and self-exploration. Reticent behavior, though less prominent, signals the importance of inclusive strategies that encourage participation without undermining individual temperament.

Level of motor skills of the preschoolers

Consistent with the high levels of play behavior, preschoolers demonstrated very high motor skill development, with a grand weighted mean of 4.91 and a grand standard deviation of 0.33. Gross motor skills were slightly more developed, registering a mean of 4.92 (SD = 0.28), compared with fine motor skills at 4.89 (SD = 0.37). Preschoolers showed exceptional proficiency in tasks requiring large muscle coordination, such as climbing, stair navigation with alternating feet, jumping, and throwing. Indicators such as climbing furniture independently and ascending or descending stairs without assistance recorded the highest weighted means of 4.95, reflecting advanced balance, strength, and coordination.

Fine motor skills were likewise highly developed, particularly in basic grasping and manipulation tasks. Skills such as picking up objects with the thumb and index finger, demonstrating hand preference, and manipulating small objects all recorded weighted means of 4.93, indicating readiness for pre-writing and self-care tasks. Slightly lower yet still very high ratings were observed in more complex drawing tasks, such as drawing human figures (WM = 4.82) and houses using geometric forms (WM = 4.83), which require higher-level motor planning and visual-motor integration (Case-Smith & O'Brien, 2015). These findings suggest that while foundational fine motor skills are well established, continued exposure to structured activities is necessary to refine precision and complexity.

Relationship between play behavior and motor skills

Correlation analysis revealed statistically significant relationships between play behavior and motor skills. A moderate positive correlation was found between play behavior and gross motor skills ($r = 0.529$, $p = 0.000$), indicating that higher levels of play engagement are associated with stronger gross motor development. This finding supports longstanding assertions that active play is a primary mechanism through which children develop strength, coordination, and locomotor skills (Goodway & Branta, 2003; Pellegrini & Smith, 1998). In contrast, the relationship between play behavior and fine motor skills, though still significant, was weakly positive ($r = 0.325$, $p = 0.001$), suggesting that play contributes to fine motor development but to a lesser extent. This weaker association may reflect the need for more targeted, structured activities to refine fine motor precision beyond what general play affords.

While these correlations affirm the importance of play in motor development, they do not imply causation. As noted in previous studies, certain forms of play, such as reticent or solitary-passive behavior, may not directly enhance gross motor competence (Krombholz, 2006). Moreover, some researchers argue that fine motor development follows a more complex trajectory influenced by cognitive, environmental, and instructional factors (Morita et al., 2019). Nonetheless, the present findings reinforce the value of integrating varied play experiences within early childhood education to support holistic motor development.

Synthesis

Overall, the results demonstrate that preschoolers at Bais City Pilot School exhibit very high levels of play behavior and motor skills, with meaningful and statistically significant associations between these domains. Play behavior, particularly active and social forms, appears to be more strongly linked to gross motor development, while fine motor skills benefit from both play and structured learning experiences. These findings underscore the central role of play as a developmental catalyst and provide empirical support for play-based pedagogies in early childhood education. By contextualizing these results within demographic characteristics and established literature, the study contributes to a deeper understanding of how diverse play behaviors interact with motor skill development. The findings thus provide a solid empirical foundation for the formulation of targeted action plans and teacher training programs aimed at optimizing play environments and enhancing preschoolers' overall development.

CONCLUSION

The findings of this study affirm that play behavior plays a significant and meaningful role in the motor development of preschool children, exerting a substantial influence on both gross and fine motor skills. Empirical evidence demonstrated that the relationship between play behavior and gross motor skills was stronger, as reflected in a moderate positive correlation ($r = 0.529$), compared with the weaker yet still significant positive correlation observed between play behavior and fine motor skills ($r = 0.325$). This pattern indicates that play activities involving large body movements—such as running, jumping, climbing, and other physically dynamic actions—are particularly effective in enhancing gross motor development. Through such movements, preschoolers strengthen large muscle groups, improve balance and coordination, and develop body awareness, all of which are foundational for physical competence, functional independence, and

overall developmental readiness. At the same time, the results underscore that play also contributes to the development of fine motor skills, although to a comparatively lesser extent.

The relatively lower correlation between play behavior and fine motor skills suggests that while play supports the development of small muscle movements required for tasks such as drawing, writing, and object manipulation, these skills may benefit more from intentional and focused activities designed to refine precision, control, and hand–eye coordination. This finding highlights the importance of adopting a diversified approach to motor skill development in early childhood, wherein active, full-body play is complemented by targeted fine motor activities. Taken together, the results reinforce the view that play should not be regarded merely as a leisure activity but as a central developmental process that supports children's physical, cognitive, and social growth. The multidimensional benefits of play behavior, particularly its stronger influence on gross motor development and its meaningful contribution to fine motor skills, emphasize its indispensable role in early childhood education and development.

In light of these conclusions, the study underscores the shared responsibility of schools and families in providing consistent and meaningful play opportunities for preschoolers. Educational settings are encouraged to integrate both structured and unstructured play activities into daily routines, ensuring that children have ample opportunities to engage in physically active play as well as in focused fine motor tasks. Purposeful inclusion of activities such as arts and crafts, puzzles, building blocks, threading beads, and other manipulative tasks can help refine fine motor precision and coordination, which are essential for academic readiness and self-care skills. At the same time, active play opportunities that involve running, climbing, ball games, and similar activities should be sustained to promote the continued development of gross motor strength, balance, and coordination.

The findings further highlight the critical role of parents in supporting motor development at home by encouraging both active physical play and quieter, hands-on activities that engage the small muscles of the hands and fingers. Collaboration between parents and teachers, including workshops or structured partnerships, may help create supportive and developmentally appropriate play environments across home and school contexts. Moreover, the careful planning of play settings is essential to accommodate both gross and fine motor activities, with outdoor environments designed to support physical movement and indoor spaces equipped with materials that promote fine motor engagement. Ensuring safety within these environments remains a fundamental consideration to allow children to explore and learn through play without unnecessary risk.

Finally, this study provides a foundation for future research that may further examine specific types of play and their distinct effects on various aspects of motor development, as well as explore the influence of socio-economic and cultural factors on play behavior and motor skill acquisition. Overall, the conclusions and synthesized recommendations emphasize the necessity of providing timely, balanced, and developmentally appropriate play opportunities for preschoolers. By doing so, educators, parents, and other stakeholders can more effectively support holistic development and foster optimal motor, cognitive, and social outcomes during this critical stage of early childhood.

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