

## Physical Play

### The Role of Gender in Physically Interactive Group Play: An Observation Study

Through professional work with children of different ages in daycare, babysitting and summer camp settings, it appears that male children are more likely to engage in physically interactive group play. At first glance, it appears that male children are more physical in their types of play, tending to push, shove, touch each other or invade one another's personal space. Psychologists have paid close attention to the different play styles of male and female children in recent years. Scott and Panksepp (2003) looked specifically at the occurrence of rough and tumble play among 3 to 6 year olds. Their findings show a higher frequency of physically interactive play among their male subjects in free play environments, but did not find any significant gender differences in controlled environments. Manwell and Mengert (1934) found a higher frequency of group play among 3 year olds than with 2 year olds, and found boys more likely to engage in physical play than girls. Colwell and Lindsey (2005) analyzed differences in child play behavior with regard to the gender of play partners. Their findings also confirmed the higher incidence of physical play among male children, and showed that boys who engaged in physical play with same-sex children were more liked by peers than boys who engaged in physical play with opposite-sex children. These research findings all suggest that male children are more likely to physically interact in a group play setting than females, and that they are more likely to interact with other boys in this style of play. These studies are significant because they show a higher tendency of males to exhibit group play behavior and physically interactive play, such as rough and tumble play, and both of these factors are considered with the present study's focus on physically interactive group play.

In the present work we evaluated physically interactive group play at a University-based Children's Center in the Midwestern United States. Our research focused on observing the

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presence of physical group play in male and female subjects. We proposed that male children would show a higher frequency of engaging in physically interactive group play than female children.

### Method

#### *Participants*

The sample consisted of 20 children, aged 3-6 years old. There were 14 male and 6 female students. Five males were in the 5-6 year old classroom, 9 males were in the 3-4 year old classrooms and all 6 females were in the 3-4 year old classrooms. Each researcher randomly selected five children to observe upon arriving at his/her assigned classroom for observation at the center. The research team was unable to obtain background information on the children regarding racial identity, socioeconomic background, or personal or family history. The children belonged to three different classrooms at the Children's Center, one classroom for 5-6 year olds, and two classrooms for 3-4 year olds. The children did not receive any sort of compensation for their participation because they were not directly informed of the observation. The Children's Center informs the parents of the research and observations performed at the Center and the parents sign consent forms allowing for the observation of their children. By means of the consent forms that are kept on file at the center, the researchers received indirect parental consent to observe the children. The study did not present the children with any potential harm or risk. The center follows a philosophy that helps them care for the developmental needs of each child, while creating a fun and nurturing play environment for all. In this experiment, the researchers had no control over the classroom environments, but the different classrooms appeared to have similar quantities and styles of toys and play areas for the children to interact, learn and have fun.

#### *Procedure*

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Three investigators observed the children in two classrooms through one-way mirrors in an observation room. The investigators had to walk through the classroom to enter the observation room, allowing for a possibility of being seen by the subjects in one of the classrooms. The subjects did not seem to take any interest more than a quick glance. The researcher in the fourth classroom entered the classroom and sat quietly on a chair near the doorway, in full view of the children. Three of the investigators were non-participant concealed observers, and the fourth investigator was a non-participant non-concealed observer. The children were all observed during an assigned period of “free play” in the classroom. The four investigators each observed five children at one time, for a period of thirty minutes. Each investigator had a watch with a second hand to provide an accurate measure of time for the procedure. The children were recorded as showing a presence or absence of physically interactive group play every 30 seconds for 30 minutes, providing 60 items of data per child.

### Measures

We operationalized physical play as any sort of physical interaction between the subject and any of the other children in the room, with physical interaction including hugging, pushing, touching the other child while working together and touching the same toy at the same time. For example, two male subjects were coded as displaying physically interactive group play when they were standing together next to a large tray of putty and intertwined their arms as they laughed and pressed their hands into the putty. We did not code for physical interaction between the subject and the adults teachers in the room. The researchers recorded these findings using a number one to represent presence and a number zero to represent absence on a table with 60 increments for observations every 30 seconds over a 30-minute period. Each researcher observed five children over a 30-minute period.

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The inter-rater reliability was established between the four observers immediately before the observations began. The researchers all observed one randomly selected child, all individually coding for the presence or absence of physically interactive group play every 30 seconds for five minutes. Inter-rater reliability was established with a 90% rate of reliability. Having demonstrated an overall understanding of the team's operational definition of physical play, the researchers then went on to make their individual observations of different children.

## Results

Table 1 presents the descriptive statistics used to analyze the data and Table 2 presents the raw scores of the observations of the children in physically interactive group play. Our hypothesis predicted higher frequencies of group play for the male subjects than for the female subjects. Table 2 shows the range of the scores, with some subjects showing no instances of physically interactive group play (male subjects 1, 2, 3 and 7) while some male and female subjects exhibited much higher frequencies (male subject 14, female subjects 18, 19, 29). The ranges for both gender groups are similar, 38 for the male subjects (0-38), and 36 for the females (10-46). Table 1 displays the variance for each gender group, 113.67 for males with a standard deviation of 10.66, and variance of 191.07 and standard deviation of 13.82 for females. A small variance indicates that the scores all fall close to the mean, and the variances of 113.67 and 191.07 are not very small numbers, thus they do not suggest that the scores all fall close to the mean. The standard deviation scores, 10.66 for males and 13.82 for females suggest that the scores fall in a wide range around the median.

Table 1 presents the frequency and central tendency for each gender's data. For males, the overall frequency was 156 instances of physically interactive group play out of 840 observations, 18.57%, and females were recorded with 158 instances out of a possible 360

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observations, 43.89%. Our hypothesis predicted a higher frequency of group play among male subjects than females, but the raw scores show a higher frequency of group play among females than males. The male mean was 11.14, mode of 0 and median of 10. The male subjects had a mode of 0 because 4 of the 14 subjects were not recorded as displaying any instances of physically interactive group play. The female mean was 26.3, mode was not determined and median of 28. The data does not display a mode for the females owing to the small number of subjects (6) and that none of the scores repeated. Looking at Figure 1, it is apparent that the mean observed interactions for the female subjects is more than twice the mean observed interactions for the male subjects. These results show that the female subjects showed a higher tendency to display instances of physically interactive group play, as noted by the greater mean and median than those of the male subjects. These results fail to support our research hypothesis that males would show a higher tendency of physical group play, and as analyzed by the different forms of descriptive statistics, the results actually appear to refute our hypothesis.

## Discussion

The purpose of this study was to examine the differences in frequencies of physically interactive group play of 3-6 year old male and female children enrolled at a research-oriented preschool. We proposed that through observation of these children during free play in their classrooms, we would observe a higher frequency of physically interactive group play among the male subjects than the females. The findings of this study clearly did not support our hypothesis, showing that female children showed higher average rates of physical play than males. These findings do not necessarily discredit the findings of the previous research studies used as background research, due to the many limitations of this study.

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Our results showed a higher frequency of physically interactive group play among females, contrary to the findings of Scott and Panksepp (2003) which showed a higher frequency of physical play among males. Our research assessed the frequencies of physical group play though, while Scott and Panksepp (2003) looked only at the occurrence of rough and tumble play, which may attribute to the differences in our findings. While our research did not record for rough and tumble play specifically, it was included in the coding of physical play, allowing for the possibility of rough and tumble play to be coded along with pro-social and gentle physical group play. Our results do not support the findings from the research by Manwell and Mengert (1934) that boys are more likely to exhibit group play behaviors. Colwell and Lindsey (2005) showed higher instances of group play among male children, which is not supported by the findings of our research, but this study also focused on the gender of play partners, a variable that was not coded for in this observation study.

The external validity of this study was limited by the small sample size ( $n = 20$ ) and the lack of random assignment of the subjects. The subjects in the sample all attended the same preschool program with a play-based and research oriented philosophy in a middle-upper class university town in the Midwestern United States. Future studies should try to incorporate larger sample sizes from different populations to improve upon the external validity of the study.

It was not known how long the children had been attending the preschool, how long they had been in the classroom with their peers. It is entirely possible that some of the subjects had been in the same classrooms together for different periods of time, allowing them to become more familiar with each other and less inhibited to engage in physically active group play with one another. While the results of the present study do not support the research hypothesis, they provide the background for further research into the different factors that may affect levels of

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familiarity that allow children to comfortably engage in physically interactive group play. Future studies should identify the levels of familiarity between the different subjects, by identifying how long they have known each other and if they have any social interactions outside of the classroom. Other issues to consider are cultural background, an analysis of family behaviors; whether they encourage or discourage physical play at home, and a look at different gender interactions. These studies could identify different factors that affect children's comfort and likelihood of engaging with peers in a physically interactive style.

As a classroom-based observation, the researchers were unable to manipulate the setting, such as the number or gender of the children, the objects found in the classroom or the way the teachers interacted with the children. The different classrooms and different teachers are confounding variables that may have contributed to the children's different behaviors. Perhaps one classroom has more group-play style toys, encouraging the children to work together more and therefore providing the opportunity for more physical play, where another classroom has more books and art supplies, providing opportunities for solitary play. The observations took place during a brief time slot assigned by the preschool, during the free play period at the beginning of the day while the children were arriving. During the observation, different children were arriving to the classroom, and many children appeared to be talking animatedly to the teacher, discussing what had happened since their last class together. Because of the early hour of the observation, the children may not have been behaving in the same way that they would at a later hour, or in a free play session in a different setting outside of the classroom, such as the playground. This sample consisted of children aged 3-6 who come from different family backgrounds. Perhaps the children experience sadness or mental anguish at their parents departure and are less likely to engage in intimate, physical play with peers in the very beginning

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of the day, but they may become more comfortable as the day goes on and show higher levels of physical play. Future studies should incorporate time of day and location into the research design to try to explain these confounding variables.

While the findings of this study failed to support the research hypothesis, they still pave the way for future research ideas. Although there exists a plethora of research findings that show male children are more inclined to physically interactive group play, the present study found females were actually more likely to engage in physical play. Future research should address the confounding subject variables, such as the subject's family background and culture, length of time children have known each other and time of day. In addition, the research design should accommodate for different situational variables, identifying what style of toys are found in the environment, using both indoor and outdoor environments, and noting the presence or absence of adult figures.