
The Outdoor Recess Activities of Children at an Urban School

Longitudinal and Intrapreiod Patterns



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Based on a study of 149 parochial-school students enrolled in kindergarten through eighth grade, this article explores children's outdoor recess activities in an urban setting—with a focus on how age, gender, and size of play group influence their outdoor play preferences—and examines changes in children's activity preferences over a single recess period. The majority of the children in the study have African American and Hispanic ethnic heritages and lower-socioeconomic backgrounds. Both boys and girls spent most of recess socializing with their peers, though their play varied by gender and age. Most girls spent the majority of their recess talking and socializing. Older boys engaged in physical, competitive activities such as sports and in larger boy groups. Younger children spent more time chasing each other in boy-girl groupings and in informal activities. Girls interacted with their teachers more than boys. The author argues that these and other findings from the study have applied value, expanding our understanding of how cultural and historical factors have shaped the play of American children and indicating that urban school children of African American and Hispanic heritages are at a greater risk for obesity. Such findings would be useful in shaping school policy regarding the duration of recess breaks, the types of activities that should be encouraged, and the impact the policy might have on children's overall health. **Key words:** age influences on play activities; cultural influences on play activities; gender influences on play activities; outdoor recess; play references; school recess; time-sampling studies

RECCESS AT SCHOOL, like vigorous physical play, receives relatively little attention in the play literature. This lack of attention is interesting in light of the ongoing debate regarding the benefits of recess for children and the movement to abolish recess in school settings. Contemporary works on recess all draw attention to the developmental benefits it provides children (Jarrett 2002; Jarrett and Maxwell 2000; Pellegrini 2005). Some school boards and policy makers, however, have disregarded these findings and chosen to omit recess as part of children's school experiences (Pellegrini and Holmes 2006). One might expect

to find more empirical studies on recess to support the benefits of this part of the school day to children. Additional studies are sorely needed as they should help convince policy makers and school administrators to preserve recess as an important part of a child's school experience.

Current existing empirical studies on recess include topics such as the developmental benefits of recess (Patte 2010); the relationship between recess and cognitive performance (Pellegrini and Holmes 2006); the connection between recess and attention (Jarrett et al. 1998; Pellegrini, Huberty, and Jones 1995; Pellegrini and Davies 1993; Holmes, Pellegrini, and Schmidt 2006); and cross-cultural comparisons (Blatchford 1993, 1994, 1998; Blatchford and Sumpner 1998). Their findings position outdoor recess as a necessary part of the school day, one that affects children's social, emotional, and cognitive development.

Outdoor school recess typically takes place in a playground setting. Previous studies on outdoor recess address playground design and developmental benefits (e.g., Frost et al. 2004; Waite-Stupiansky and Findlay 2001); children's perceptions of recess (e.g., Jarrett and Duckett-Hedgebeth 2003); and children's playmate and activity preferences (e.g., Jarrett et al. 2001; Lewis and Phillipsen 1998). Recess is one of the few times during the school day when children have the opportunity to socialize with their peers in the absence of adult supervision (Pellegrini 2005). Such interactions help children develop cognitive and social skills related to negotiating conflict and maintaining and sustaining relationships (Jarrett and Duckett-Hedgebeth 2003; Patte 2009; Pellegrini and Holmes 2006).

For example, Jarrett and Duckett-Hedgebeth (2003) focus on how teens interact on the playground and in what types of activities they engage. These authors collected student perceptions of recess and the rationale behind their decision to participate in it. Observations and student surveys revealed that recess provided the adolescents with time to socialize with peers, to engage in physical activity, and to play games, all with little adult interference. The authors concluded that recess helps facilitate social development because it allows for play and other social behaviors that do not occur in structured, teacher-led physical-education classes.

In a related study, Patte (2009) employed the play-work dichotomy to explore fifth graders' perceptions of activities in which they engaged during the school day. The play-work dichotomy views the constructs of play and work as an antithetical pair in which comparisons can be drawn between the two phenomena (e.g., Holmes 2005). Raw material obtained through participant observation and interviews revealed that these children viewed playing at recess

akin to an unalienable right. These children believed that recess was a part of the school day when they were free to select activities voluntarily and to engage in them with little adult supervision. They mentioned their preferences for playing organized games, activities, and sports. In addition, children enjoyed walking around the play area and talking and socializing with their peers. Children viewed recess as one of the few times when they were free to do things and to talk about them without adults controlling them.

In his observational work with preadolescents, Pellegrini (1992) examined how the preferences of boys and girls for outdoor, vigorous activity changed as they made the transition to middle school. He observed sixth- and seventh-grade students over the course of a year and recorded the following: the children's preferences for outdoor play, the time they spent outdoors, and the play in which they engaged on the playground. In addition, he collected the teachers' ratings of the children's levels of achievement, physical attractiveness, and facility in games and the peer ratings regarding dominance status. He found that younger children preferred to play longer outside than older children and that boys preferred to play outside longer than girls.

Teachers rated the behavior and personalities more favorably for younger children presumably because they found younger children more obedient and compliant as they adjusted to their new school. Younger boys also initially engaged in more rough-and-tumble play perhaps to assert their dominance and to establish their social status among their peers. The need to rely on aggressive displays in establishing friendships declined as they progressed through middle school and became more familiar with it.

Lewis and Phillipsen (1998), in their observational study with elementary-school children, examined the influence of age, gender, group size, and playground area on children's playground preferences. They observed first and second graders and fifth and sixth graders during outdoor playground interactions. Employing a time-sampling procedure, they recorded the sex, ethnicity, and group size of all interactive play in several playground areas during each age group's recess period.

Their findings revealed interesting trends: First and second graders interacted more in boy-girl groups than fifth and sixth graders; Fifth and sixth graders preferred larger play groups more than first and second graders; And fifth- and sixth-grade children played in same- and mixed-sex groupings in equal proportions. In addition, play-group size varied by age, gender, and ethnicity. European and African American children preferred to play in pairs—or in

smaller groups—of children of the same ethnicity. The dyad, however, was not the preferred play group composition for mixed-ethnic play. Mixed-ethnic play most commonly occurred in small and large play groups.

Exploring similar factors, Blatchford, Baines, and Pellegrini (2003) investigated the relationship between gender and ethnicity in children's outdoor recess activities in the United Kingdom. They examined peer interactions, relationships, and activity preferences longitudinally, focusing on the gender and ethnic composition of play groups and the changes that take place over the course of the school year. Their observations of seven- and eight-year-old children suggested that children spend a great deal of their recess seeking out social interactions. The children socialized and participated in various games, in rough-and-tumble play, in chasing, and in fantasy play. Blatchford, Baines, and Pellegrini also noted that participation in ball games increased over the course of the year but that the frequency of chasing games decreased. The majority of social interactions were positive. Instances of aggression, teasing, and taunting were rare.

They also found that segregation between the sexes occurred often in play and that boy-girl play depended on the type of game. In general, participation in games led to larger social networks for boys who engaged in more active play such as ball games. By comparison, girls engaged in more sedentary activities, like conversation. Gender differences in active networks did not arise, however. Although children spent more time in groups of the same ethnicity, one exception occurred in game play. The authors concluded that the percentages of ethnic mixing in game play equaled proportionally the ethnic groups in their sample and that these became more integrated over time. Thus, in their view, instances of ethnic-group segregation rarely happened. Their findings suggested that playground activities encourage interethnic social relations. In their study, game playing that involved social collaboration and facilitated interaction among participants increased contact between children of different ethnic heritages.

In their observational study of preschool children in outdoor recess, Holmes and Procaccino (2009) use time-sampling approaches to record the play preferences of three- and four-year-old nursery-school children. Holding the child's gender as the independent variable and the play space (riding, sandbox, slide, jungle gym, open space, play castle or play house, swings) as the dependent variables revealed a significant effect of gender on the choice of play space: Boys preferred to play on the jungle gym and swings; Girls more often chose to play in the sandbox. The authors also investigated changes in children's play preferences over an entire recess. They found that the way girls and boys

used playground space changed over a single play period. For example, boys preferred some play spaces early in the recess and that girls preferred particular play spaces and equipment later in the period.

Using a mixed-method approach, Jarrett et al. (2001) explored the outdoor recess play preferences of urban, primary-school children. They combined qualitative approaches such as interviews, which were coded for content, with quantitative approaches such as recording observations, which were analyzed numerically. They also engaged the children as researchers. Their sample, which consisted of first, third, and fifth graders, recounted their play preferences at home and at school. Teachers recorded observations during outdoor recess, and children asked elder community members about their childhood play experiences. They found that these children enjoyed physical types of play such as chasing, playing on equipment, and rough-and-tumble play. They also observed decidedly cooperative play and reported low levels of fighting, bullying, and teasing. They reported that play differed by grade and gender: Girls played on equipment; Boys played games; And gender segregation appeared more frequently among the older children. The authors' findings broaden our understanding of how gender and age influence children's recess play preferences and provide empirical research confirming the infrequent instance of bullying and fighting during outdoor recess.

The current study expands on the findings of Jarrett and her coauthors (2001). In addition, I observed the gender and number of children present in a play group, recorded playground behavior over an entire school year, and explored how children's play preferences changed during a single recess session. The following questions informed the research:

- In what types of activities do children engage during recess?
- Do gender and age influence children's outdoor play preferences and the size of play groups?
- Does activity level and participation change over a single recess session?

The current study contributes to the play literature by addressing the outdoor recess play preferences of African American and Hispanic children in urban school settings during an entire school year, how these vary with age and gender, and how children's playful consumptions (selected play behaviors and activities) change over the course of a single recess. Intending the study

to have applied value for children's play experience at school, I pursue these issues for several reasons. First, the study of play has focused on Western frameworks and child participants of European American ethnic heritages to explain and understand children's play (Gaskins and Miller 2009; Lancy 2007; Roopnarine, et al. 2003). The omission of non-Western children in general and children from nondominant ethnic groups in the United States in particular has created a void in the literature regarding the connection between play and culture. Thus, studying children of color—that is, African American and Hispanic children—should contribute to our understanding of the link between cultural variability and play. In addition, with changing ethnic-group populations in the United States, such studies might illuminate any changes in American children's outdoor play preferences at school (e.g., the appearance and disappearance of play forms) and how these are shaped by historical and cultural factors. This information should contribute to our understanding of the relationship between play and culture, of the history of American children's play, and of the applied value of such knowledge for social interactions between children of different ethnic heritages.

Second, childhood obesity ranks high as both a national and global concern. In the United States, African American and Hispanic children are in higher risk groups for obesity than European American and Asian American children (Ogden and Carroll 2010). Many urban schools have either eliminated or reduced recess for such reasons as a lack of space, a concern about bullying, and a need for more time for academic instruction (Ahmed-Ullah 2011; Robert Wood Johnson Foundation 2007). A recent national report on recess revealed that lower-income children of color who attend large, urban public schools engage in far fewer minutes of recess (if they engage in recess at all) than similar schools located in nonurban areas (Robert Wood Johnson 2007). Studying the outdoor recess activities of these children should provide empirical information regarding the way they expend energy on the playground. This information might be useful in shaping school policy regarding recess, the types of activities that should be encouraged, and the impact they might have on children's overall health.

Third, there is little information directing decisions about the optimal time for recess (Pellegrini 2005). Do younger children need more recess time than older children? Do girls benefit from a shorter recess period more than boys? Investigating how children's activity levels and playful consumptions change over a recess period should help inform curriculum and policy makers on how much and what type of recess children need.

Theoretical perspectives from the play- and gender-development literature frame the current study. It accepts the interaction of biological and ethological factors (Pellegrini 2004b) with social and cultural factors (Maccoby 1988, 1998, 2000, 2002) to explain gender differences in children's play preferences. For example, past studies in play and gender theory suggest that both boys and girls enjoy socializing with their peers, although the forms of encounter vary by age and gender. Boys seem to prefer participation in high energy, vigorous, competitive, rough-and-tumble play, including games (Maccoby 2000, 2002; Pellegrini 2004b). In addition, boys seem to engage in larger-group interaction with more complex rules such as sports and active games, and this preference correlates positively with age.

In contrast, girls tend to engage in more intimate, sedentary activities such as sitting and talking that are relationship oriented and that support social collaboration (Maccoby 2000; Pellegrini 2004b). Also—as Thorne's (1993) notion of "border work" indicates—where boys and girls come together to play, competitive tomboys engage in the boys' activities. Developmental studies suggest that younger children prefer to engage in chasing and that older children tend to show a preference for more formal games like sports.

With these findings as an interpretive guide, I expected to observe similar playful behaviors among this group of children. Given that little research exists on changes in play during a single outdoor recess period, that children's outdoor play and play groups are often transient, and that the search for optimal recess timing continues (e.g., Pellegrini 2005), it seems plausible to expect children's behavior to change over the course of a recess period in a way that reflects their activity preferences, their levels of engagement, and the length of the recess itself.

Method

Participants

The participants attended a private, parochial, elementary school for children in kindergarten through the eighth grade located in an urban neighborhood in the Northeastern United States. There were 149 children (74 boys, 75 girls) and ages ranged from five to fourteen. Approximately 40 percent of the children were Hispanic; 39 percent, African American; 12 percent, Haitian; and 9 percent, European American. Most, if not all, came from lower-socioeconomic backgrounds. Class statistics appear in table 1. Children were treated according to the American

Grade	Boys	Girls	Total
Kindergarten	7	6	13
1st	7	5	12
2nd	9	10	19
3rd	7	12	19
4th	8	11	19
5th	9	7	16
6th	7	6	13
7th	10	10	20
8th	10	8	18
	—	—	—
	74	75	149

Table 1. Enrollment statistics by grade and gender of child

Psychological Association's 2002 guidelines for ethical treatment of participants. Because the participants were minor children, additional resources were consulted (Christensen and James 2008; Fraser 2004). An institutional review board, as well as the school's principal, granted permission for human subjects research.

Setting

The school playground has an asphalt surface and no fixed equipment. It is self-contained and situated between the school and other parish buildings. During recess, children have access to a portable basketball court, balls, Hula Hoops, and jump ropes.

Design and Procedure

This study used quantitative design and naturalistic observational approaches. An ethogram served to record observations of the children's play activities and playmate preferences. Preparation of the ethogram occurred over a pilot period of two weeks. Observers made no attempt to interact with the children. They made contact only when the children approached the observers. During the first few visits, some children were curious and asked the observers what they were doing. Observers told the children they were interested in what children do at recess.

The study began in September 2009 and ended in June 2010. Observations took place over the entire school year, three days a week during outdoor recess.

This equates to approximately one hundred visits or two thousand minutes per grade-designated recess. School recess lasted for approximately an hour subdivided into three, twenty-minute periods. Several grades occupied the playground during a recess period, starting with the youngest grades first. In the first twenty-minute recess, children from kindergarten through the second grade occupied the playground. In the second twenty-minute recess, third, fourth, and fifth graders had recess. The oldest children—in sixth, seventh, and eighth grades—stormed the play area during the final twenty-minute period.

Observers recorded children's play activities using an ethogram extracted from Jarrett and her coauthors (2001). Their work contained the following categories: chasing, rough-and-tumble play, play on equipment, talking in groups, teasing or bullying, fighting, children's games, and solitary behavior. In the present study, I added novel activities that did not appear in the 2001 study. For example, I included individual sports such as football, rope jumping, and games such as kickball. In agreement with the observations made by Jarrett and her colleagues, I recorded behavioral interactions with teachers, and cooperative behaviors such as helping. Expanding on the 2001 study, I recorded—along with the frequencies of behavior—the gender of the child or children demonstrating the behavior and the number of children in the play group. A minimum of two observers watched children on the playground at any given time to ensure observer reliability. Observers did not stand in stationary positions but roamed freely around the playground to maximize their ability to see the entire play area.

To record behaviors uniformly, I used time sampling. Rather than recording observations at spontaneous and inconsistent times, time sampling records observations at fixed, regular intervals of time and notes what occurs precisely at that moment (Pellegrini 2004a). For this project, I selected a time-sampling period of five minutes, in part because of its use in other studies that appear in the literature (Jarrett et al. 1998). For pilot trials, five minutes seemed ample time to cover the entire playground. I divided the playground into three quadrants—rectangular spaces in front of the two parish buildings and a triangular space between the two buildings. These divisions facilitated the ease of recording observations. Prior to recording, observers agreed in which direction they would begin observations. This was counterbalanced during each of the time sampling units in any single recess session. One observer held a stopwatch, which signaled the beginning and end of the five-minute sampling period.

Children gained access to the playground from double doors located at the back of the school. They walked in an orderly line until they passed beyond the

school building. Then children typically ran or walked to either preferred play areas or to other playmates and quickly settled into their preferred activities. Observations began at this time. During the observational periods, observers communicated with each other as to which child or group was the next target. We recorded all children in the quadrant in right-to-left and back-to-front directions before moving on to the next quadrant. We used this procedure for every quadrant, and its use enabled observers to equitably record all the children at play. Observers used a scan-sampling technique. When a five-minute period ended, researchers began the next five-minute time-sampling observation. In a single recess session, there were a minimum of four time-sampling units and a maximum of five. On some occasions, some grades did not go out for recess, while others stayed longer than the typical twenty-minute period. I selected 20 percent of the total observations with which to perform a reliability analysis, achieving a result of Cohen's Kappa of $k=.82$.

Results

Let us take a look at the children's playground behaviors and activities with both peers and teachers. I have reported the results here in terms of group frequencies over the entire year, and I also present the results subdivided into individual recess periods. Categories include the types of play activity, the gender or genders of the play group, the number of playmates, and the changes in play over a single recess period.

Play Preferences and Gender

The raw material for figure 1 consists of tallied frequencies across all play periods for all grades. This figure presents the children's play preferences by gender. Reported frequencies reflect all grade levels. Distinct trends along gender lines emerged. For example, as a group, girls preferred less physically vigorous play, like socializing (talking in pairs or groups), walking the playground, and playing jump rope. Talking and socializing constituted the typical recess activities for these girls, accounting for 19 percent of all observed play activities. Observations consistently found girls sitting and talking or walking arm-and-arm across the playground. Finally, as a group, girls interacted more with their teachers than did boys or boy-girl groups.

During recess, boys spent most of their time engaged in large-group, physically active games and sports across a wide range of territory. Such activities

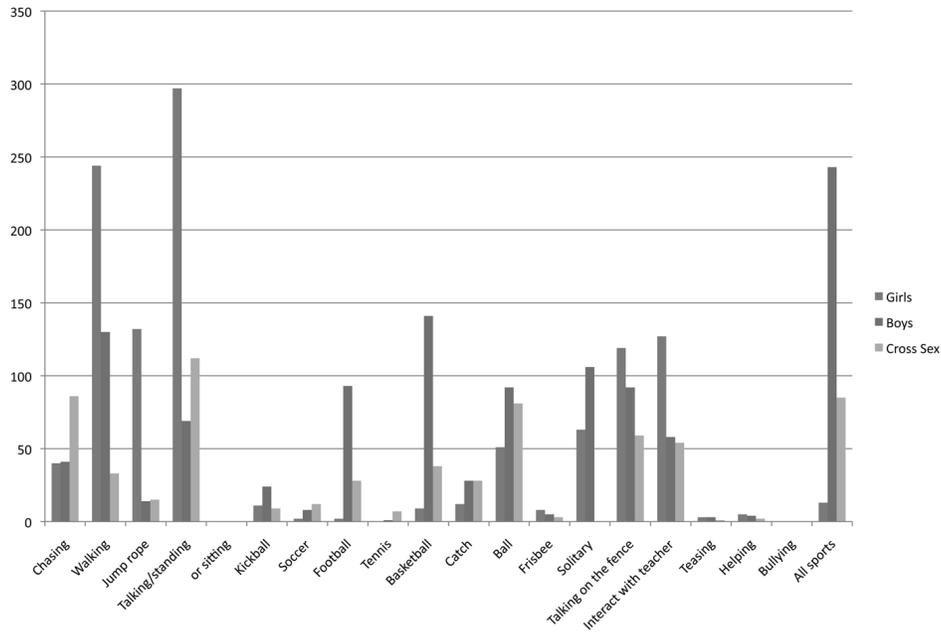


Figure 1. Children’s play preferences for all activities, time periods, and grades by sex

accounted for 13 percent of all observed play and included basketball, football, soccer, running, and other kinds of ball play. Boys rarely jumped rope in boy groups or boy pairs. Compared to girls, boys also engaged in more solitary play. Single-sex play was typical, and when boy-girl play occurred, it involved chasing, socializing, playing sports, or interacting with teachers.

Play Preferences by Grade

The material for figure 2 consists of tallied frequencies across all play periods. This figure presents frequencies for observed jump-rope activities by grade. Primarily younger girls engaged in jumping rope, and they did so typically in solitude or in pairs. We saw none of the traditional forms, like double Dutch or jumping rope while rhyming, that others have reported for older African American girls. Also, when younger children jumped rope, they quit sooner than older children, and they, too, talked and rhymed less as they jumped.

Figure 3 documents frequencies for playing sports by grade. Interestingly, younger children primarily played soccer, whereas older children engaged mostly

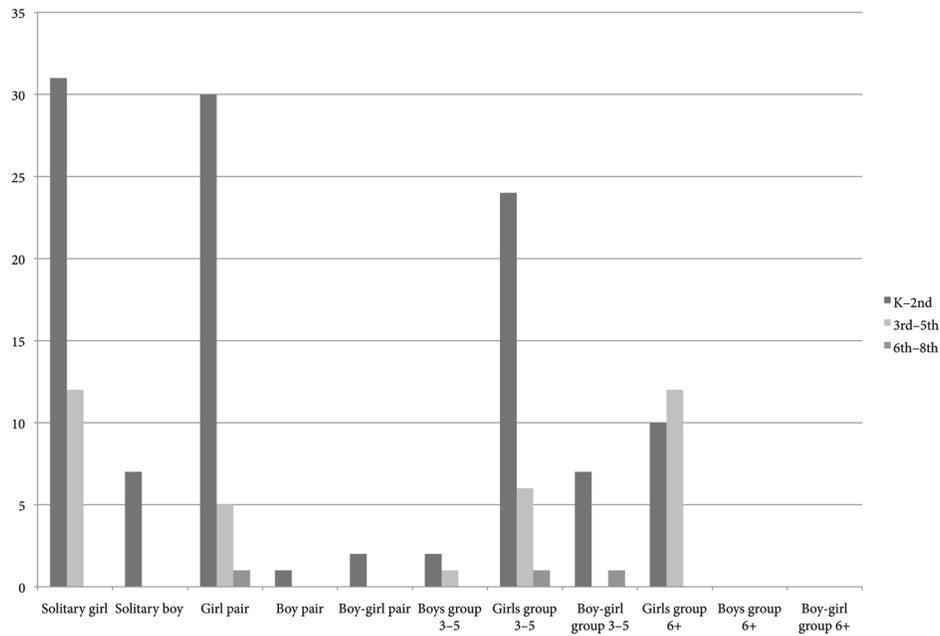


Figure 2. Jump rope: all time periods by grade and number of children

in football and basketball. Soccer games lasted the longest for those in grades three through five, and this group, too, played most of the sports we observed. They accounted for 55 percent of all the sports games we studied. Some games for each of the age groups occurred in boy-girl groups with more than six children and lasted an entire recess. Typically, larger boy-girl groups contained the same girls in each instance. Larger groups of six or more children consisted most commonly of boys.

Younger children rarely took up football. This sport, however, engaged students in grades three through five and grades six through eight. The older students played football primarily in boy-girl groups or all-boy groups in numbers ranging from two to six or more. Many of these games lasted an entire recess period with a few players moving in and out of the game. In many, if not all, instances of the less common boy-girl play, the same one or two girls joined in the game.

Anecdotal observations suggest that the quality of play of the children in kindergarten, first grade, and second grade differed from that of the older children. For example, younger children engaged in chasing more often than older

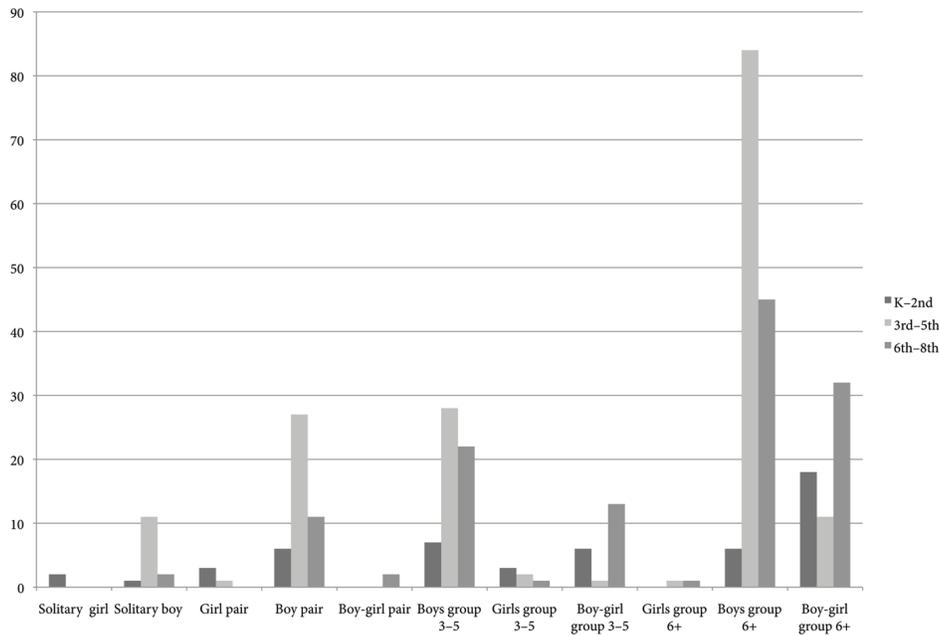


Figure 3. All sports for all grades and time periods by number of children

children. The younger children’s chasing, however, seemed capricious, performed for its own sake. Older children’s chasing appeared more purposeful or evolved from another play activity.

Figure 4 records frequencies for kickball by grade. The children in kindergarten through second grade enjoyed kickball. They accounted for 84 percent of all observed frequencies. In addition, boys’ groups of various numbers accounted for the bulk of this activity. Under these circumstances, we observed kickball among the children in kindergarten through second grade and in sixth through eighth grades. The children in grades three through five infrequently elected to play kickball.

Figure 5 indicates the instances of talking while standing or sitting for all grades. Children spent much of their time socializing and conversing with peers, which we observed in all grades in varying degrees. For example, talking with peers was much less common in the youngest grade levels. It was the preferred activity of children in grades three through five, who accounted for 42 percent of all observed talking, and of those in grades six through eight, who accounted

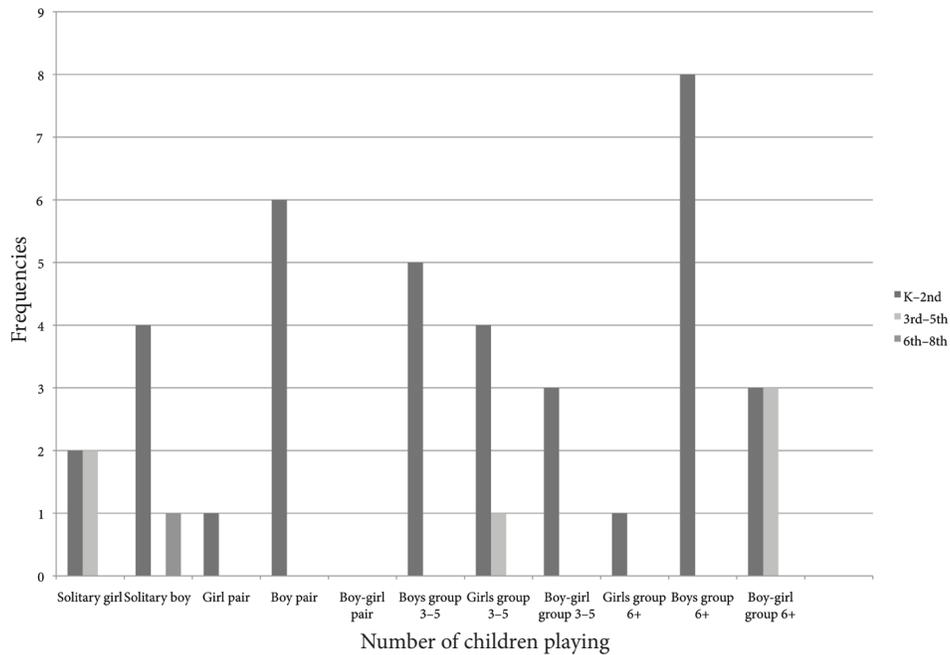


Figure 4. Kickball: All time periods and grades by gender

for 37 percent. Girls did most of the talking and standing. They accounted for 63 per cent of this activity, though it occurred in boy-girl groups as well.

These elementary-school children selected solitary play infrequently in comparison to social play. Figure 6 reports the frequency of solitary play for all grades. Boys engaged in more solitary play (63 percent) than girls did, although the form of the play differed. Boys often played alone with a ball, sat on available picnic tables, or walked aimlessly throughout the recess period. By contrast, solitary girls spent most of their time sitting or walking as if trying to find a peer with whom they could play.

Figure 7 documents the frequency of chasing among students in all grades. Although the youngest grades account for 42 percent of all chasing, it occurred across all grades and in almost all combinations of pairs and gender groups. The most typical arrangement for chasing involved boy-girl pairs and groups, which accounted for 52 percent of all chasing episodes.

Figure 8 presents the frequency of ball play. Younger children typically

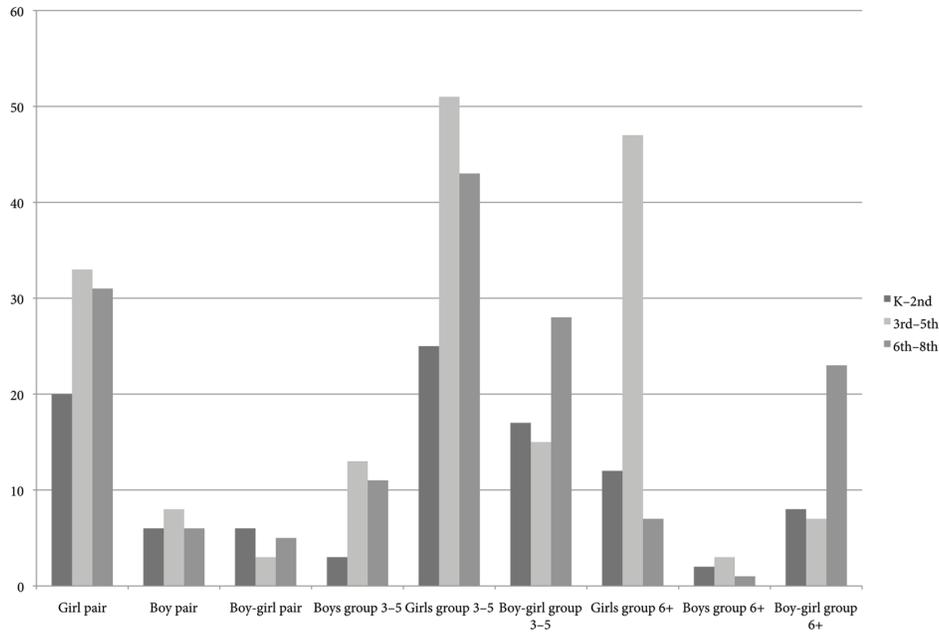


Figure 5. Talking: Standing or sitting by grade and number of children

played ball more than older children. Children in the youngest grades accounted for 67 percent of all recorded ball play. Solitary playing by boys and girls occurred most often, 35 per cent. Next came medium-sized boy groups at 12 percent. Solitary children often dribbled a ball as they walked around the playground. Boy groups tended to play catch or throw the ball against the wall in a modified game of catch, an activity we also observed in boy-girl play. In girl groups, the students tended to bounce the ball to one another rather than throw it.

Given the lack of play equipment on this playground, children often congregated by the fence, a popular play area. The frequency of this behavior appears in figure 9. We observed all children at some point talking while leaning on or in proximity to the fence. Girls in pairs and larger groups socialized on the fence more often than boys. Younger and older girls accounted for 68 percent of all observed play on the fence. However, we observed this activity in all grades and in all dyad and group compositions. Talking along the fence engaged primarily those in grades three through five (44 percent) and those in grades six through eight (38 percent) and frequently with groups that contained more

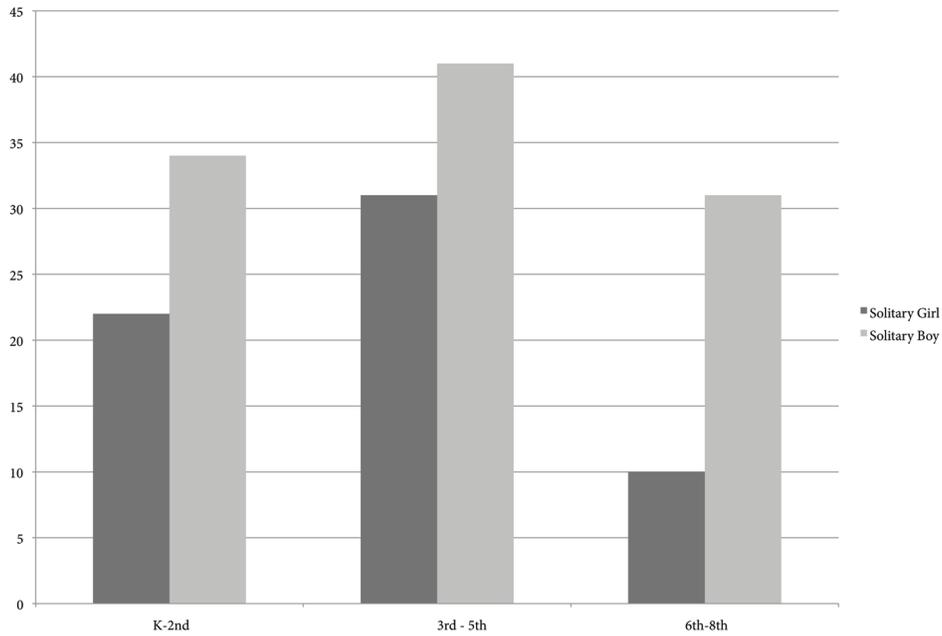


Figure 6. Solitary play: All time periods and grades

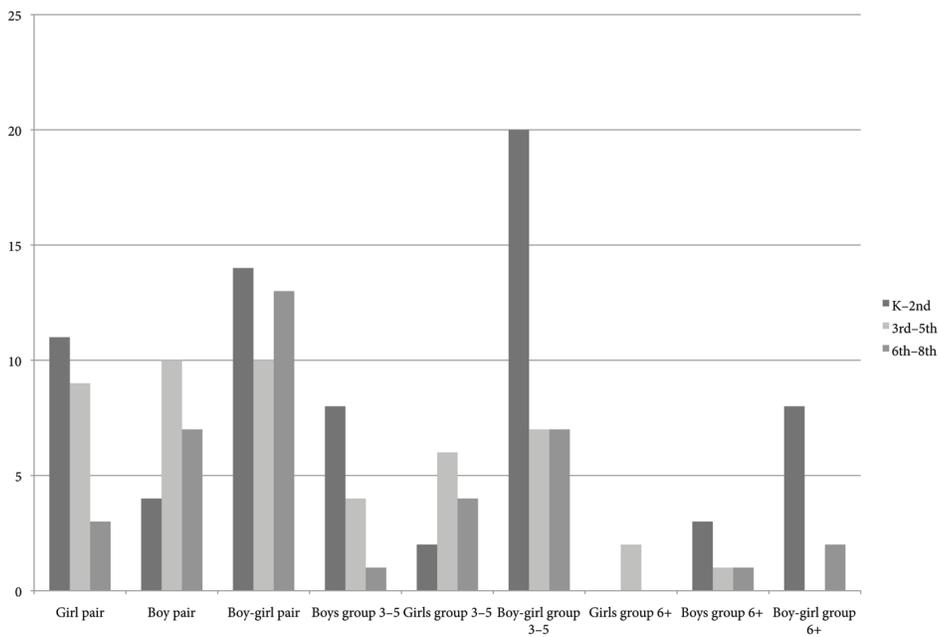


Figure 7. Chasing: All play periods by grade and number of children

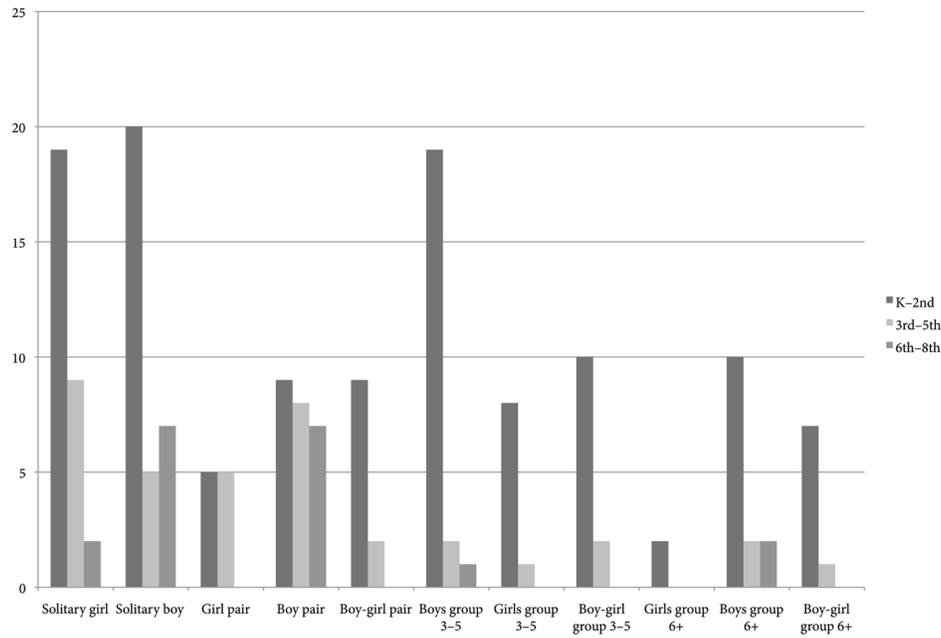


Figure 8. Ball playing: All time periods by grade and number of children

than six children. The activity that took place along the fence, however, differed for younger and older children. The younger children actually stood by the fence to rest in between chases, often leaning on it. Older children stood by the fence and conversed.

Although most children interacted with peers during recess, children also conversed with their teachers. These frequencies appear in figure 10. In general, solitary boys and girls interacted with teachers more than did children in pairs and groups. Solitary approaches to the teacher accounted for 37 per cent of all observed interactions. Also, boys in pairs or groups were less likely than girls in similar play compositions to interact with teachers. Most teacher-student interactions involved girl pairs and groups of three to five children. Excluding solitary girls, girls in pairs and groups accounted for 33 per cent of all interactions with teachers. Interestingly, students in grades three through five and those in grades six through eight interacted with their teachers more frequently than younger children. They accounted for 75 percent of all approaches to the teacher. With the older children, a typical scenario involved one or two children approaching their teacher joined later by other children. This was typical of interactions involving girls and boy-girl groups.

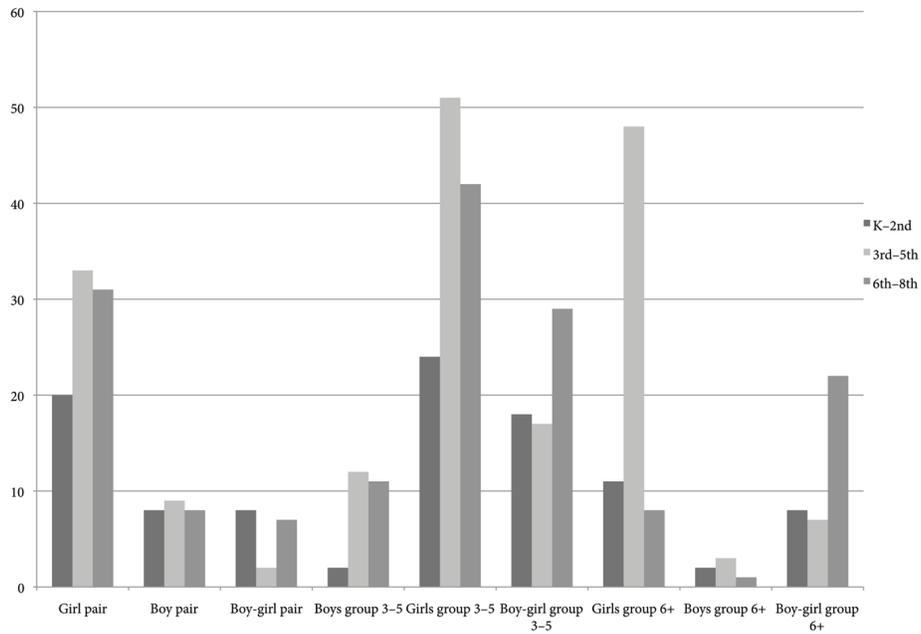


Figure 9. Talking along the fence: All time periods by grade and number of children

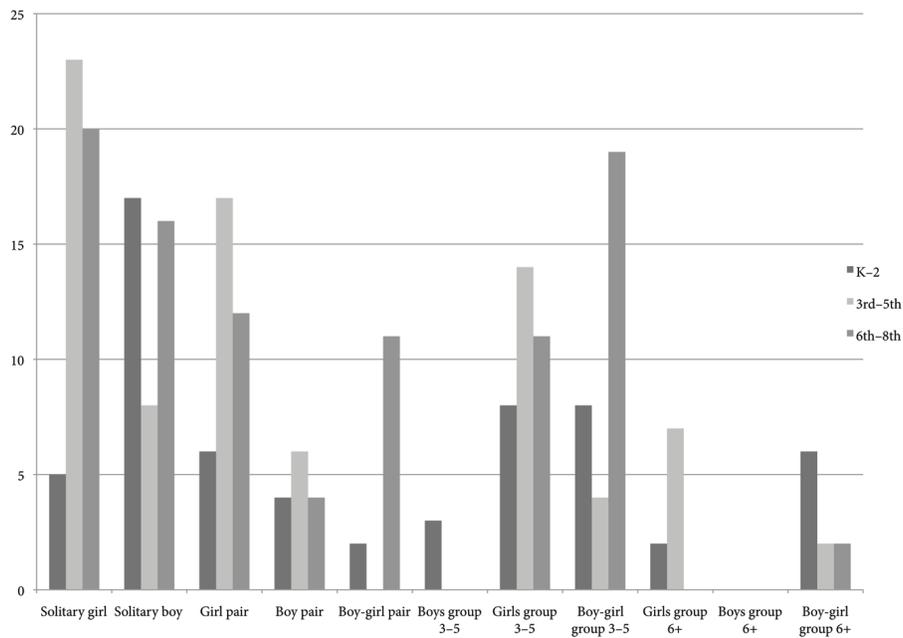


Figure 10. Interactions with teachers: All time periods by grade and number of children

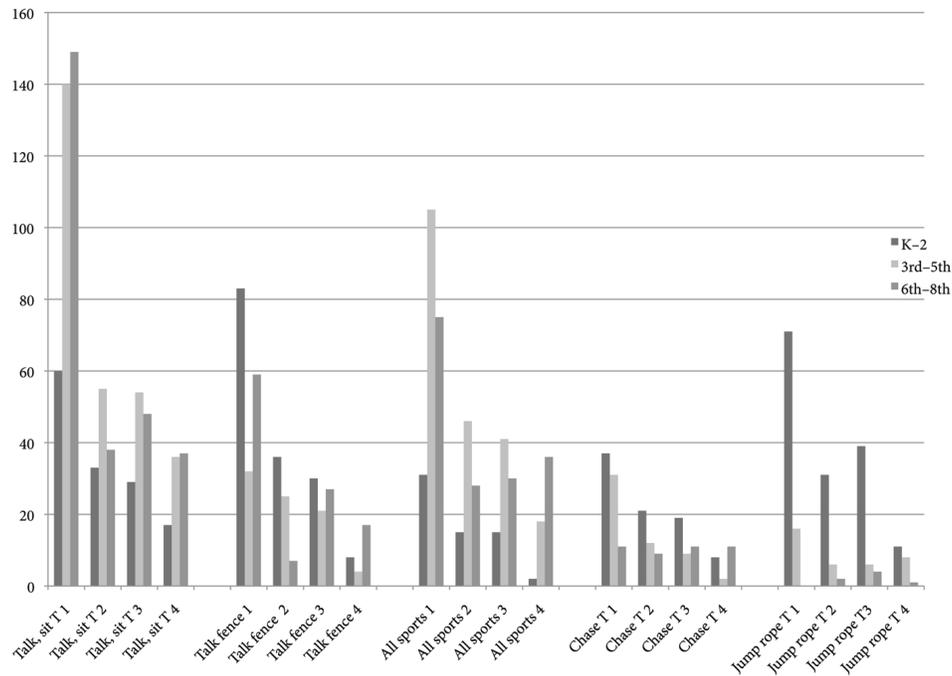


Figure 11. Activity by grade and time sampling unit

Changes in Play Preferences and Activity over a Single Recess Period

Figure 11 reports play activity engagement as a factor of time. Children’s activity levels and engagement in play correlated negatively as the recess period progressed, and this pattern emerged for all grade levels. Generally, children’s engagement in play and other socializing activities decreased from the beginning to end of the recess. During the first and second five-minute periods of a recess session, children were most active, then activity clearly dropped during the last five minutes of the recess period, though the drop varied by age and type of activity. At the beginning of recess and for the first ten minutes, large numbers of children from all grade levels engaged in a variety of activities ranging from sitting and socializing to playing sports. With few exceptions, play generally waned as recess progressed: children showed less activity in the last five minutes of a recess period. This observation held for both physically demanding and sedentary activities. The decrease in activity was particularly pronounced for the youngest students.

For example, younger children’s play decreased for socializing, chasing, and sports but not for jumping rope. In contrast, the amount of play for youngsters in grades six through eight seemed to rise and fall independently of the activity

they chose. Thus, this was true for socializing as well as for sports. The most dramatic changes occurred for older children who socialized and for those in graders three through five who participated in sports.

Discussion

As anticipated, the children we observed engaged in a variety of activities during their outdoor recess guided in part by the activities the setting supported. For example, there were no observations of jungle-gym play because the playground did not contain such equipment. Both boys and girls spent most of recess socializing with their peers, though the form of socialization varied by gender and age. That children enjoy socializing with their peers during recess finds support in the literature (Jarrett et al. 2001; Patte 2009, 2010).

This study agreed with earlier studies offering biological and sociocultural explanations of gender differences in play preferences. We confirmed that girls spent the majority of their recess talking and socializing with peers. Older children—particularly those in grades three through five—spent more time socializing than other age groups. Girls were responsible for most of this activity, and it frequently occurred in large group arrangements. Boys spent their recess playing sports (Maccoby 1990, 2000, 2002; Pellegrini 2004b). These competitive games entertained mostly the older children (third to fifth graders) and involved larger boy groups. The inclusion of select girls in sports participation supports Thorne's (1993) work on the play of tomboys.

This study supports the findings of Patte (2009) and Jarrett et al. (2001) that younger children—primarily in boy-girl groups and in boy-girl and girl dyads—spent more time chasing than older children. Chasing in boy-girl pairs occurred frequently among students of all grades. Thorne (1993) referred to this type of behavior as border work. In addition, younger girls jumped rope; and younger children, especially boys, played ball. The lack of traditional hand-clapping games, double Dutch, and jump-rope lore may be plausibly explained by advances in technology, by the fact that immigrant children who do not speak English as a first language and are not familiar with traditional American play forms, and by a disappearance of traditional play with rhymes and lore. This contrasts with Saloy's (2011) work on the folklore of African American children, which suggests that such rhymes and rhythms are alive and well in settings such as the neighborhood and home.

Solitary play seemed minimal compared to social play. This suggests that children enjoyed recess and they sought out play partners to join them in their play activities. Boys in all grades were responsible for most of the solitary play. It may be worth noting that just a few children accounted for the frequency of solitary play. Typically, the same two or three boys played in solitude or walked by themselves during play. Additionally, low levels of fighting and bullying surfaced. Jarrett et al. (2001) reported similar findings in their work with urban, public, elementary-school children.

Children often interacted with their teachers, girls more so than boys. As Maccoby (2002) noted, girls tend to approach their teachers more often than boys. The high frequency of these interactions may be explained in part because the children's teachers served as playground monitors, because children viewed their teachers as approachable, and because teachers of younger children sometimes participated in structured activities with the children. In addition, like Jarrett et al. (2001), we found instances of bullying and teasing rare. This may be plausibly explained by the presence of the children's teachers on the playground and by the social policies and values this particular school promotes.

Children's activities, as expected, changed over a single recess period. Engagement in play declined as time passed on the playground. The decline over time occurred when students participated in physically active games, such as sports, and when they engaged in more sedentary activities, such as sitting and talking. These findings support Holmes, Pellegrini, and Schmidt's (2006) work on recess timing regimens, where they found that preschoolers were more active in the beginning than at the end of recess.

Limitations

The sample of this study was relatively homogeneous with respect to ethnicity and socioeconomic status. In addition, several grades took to the playground at the same time, so we observed several grades together and had no way to distinguish students of different grades. The playground consisted of an asphalt surface with little playground equipment except for a portable basketball court. The setting clearly drove the behavior that occurred within it, and comparisons among different types of playgrounds would be interesting to pursue.

Future Research

Findings from this project suggest future avenues of play research. First, the reliance on Western children and theoretical frameworks with which to interpret

children's play has limited our understanding of the cultural variability that exists in children's play. Studying children with African American, Hispanic, and other ethnic heritages in the United States should contribute to our understanding of the link between cultural variability and play. Given the increase in the United States' Hispanic population, inquiries into American children's outdoor play preferences at school should expand our understanding of American children's play as shaped by historical and cultural factors (Göncü and Gaskins 2007).

Second, although the children in this project actively socialized with their peers during recess, girls, in particular, engaged in relatively sedentary activities, activities in which they did not expend a great deal of energy. This is an important habit to address given that concern about childhood obesity and about improving children's health is an issue receiving national attention. In the United States, African American and Hispanic children have a greater risk of being obese than European American and Asian American children (Ogden and Carroll 2010). National statistics reveal that low-income children of color in large urban schools enjoy far less recess than do children in other settings (Robert Wood Johnson Foundation 2007). Thus, introducing and encouraging both structured and unstructured physically vigorous activities could help improve children's overall health.

Studying the outdoor recess activities of these children should provide empirical information regarding the way children expend energy on the playground. This information would be useful in shaping school policy regarding recess breaks, the types of activities that should be encouraged, and the impact they might have on children's overall health. Finally, it should help fill the broad gap in information regarding the optimal length of recess and whether the same length of recess benefits children of all ages equally (Pellegrini 2005). Investigating how children's activity levels and playful consumptions change over a single recess period should help inform curriculum and policy makers on how much and what type of recess children need.

Future research might explore samples of children from different ethnic heritages and look at different types of playgrounds, concentrating on specific grade-level comparisons, exploring children's recess activities across rural, urban, and suburban playgrounds, and investigating how children's play changes with time during outdoor recess. Although preliminary in scope, findings from the study in this article suggest that children's activity levels and engagement in play change over the course of a recess period. Thus there is a real need for studies that explore optimal recess durations for children. Our findings also suggest that

gender differences surface in children's play preferences and that play environments guide the behaviors that occur within them. Such studies will broaden our understanding of children's outdoor play during recess at a time when some are attempting to eliminate recess as part of a child's school experience.

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