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Enhance Health of Pre-School Children through Prolonged Engagement on Playgrounds

Obesity has become a major issue concerning children's health today, but another issue has arisen. Over 70% of children in the United States have insufficient levels of vitamin D. This deficiency can lead to rickets, osteoporosis, cardiovascular disease, and a host of other chronic ailments (Kumar et al, 2009, Reis et al, 2009). To maintain a healthy level of vitamin D requires 10-15 consecutive minutes of exposure to the sun twice a week (Brender, Burke, Glass, 2005). The barriers to children not being outside or having a limited range of play space have shifted over time from physical attributes to social ones. Reasons that children are not spending time outdoors include an increase in supervised activities, technology, and parental fear (Clements, 2004, Pyle, 2002).

Research was undertaken at the Preschool Laboratory at Cal Poly in San Luis Obispo to discern if an enriched play environment would engage children for longer periods of time. Research indicates that when preschoolers play, they have brief spurts of activity punctuated by rest periods (Bailey et.al, 1995). Does the design of the playground influence the duration of each of these and does it influence the overall duration of their engagement of play outside? This longitudinal study examines the play patterns of children when nature-based play opportunities supersede traditional playground equipment. The existing pre-school playground is a rectangular space bisected into two relatively equal spaces by a concrete sidewalk, and is surrounded by a masonry block wall. One half is a flat open lawn with a climbing structure and two large magnolia trees, and the other is a concrete slab with minimal traditional playground equipment, and a perimeter walkway defined by five foot wide planters. Children were observed in play for the fall quarter in this space with two video cameras positioned to record the largest area possible. Following this, a donor afforded the opportunity to redesign and construct a new nature based playground experience. I created a new design, which was constructed the following year and children were observed again during the fall quarter utilizing the same protocol measures. Initial analysis of the data from the original playground shows a limited number of children engaged in outdoor play. It also confirms results from the Bailey study, and additionally sheds light on play preferences exhibited by the children.

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