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Schoolyard Activity of Children At Risk for Communication and/or Language Delays

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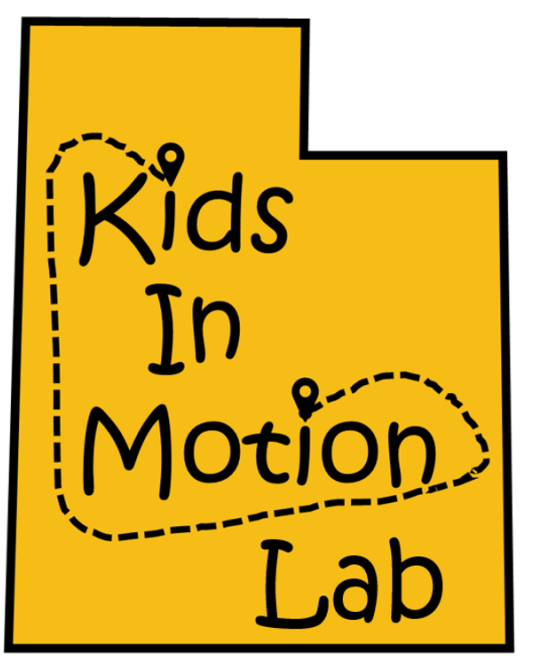
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Schoolyard Activity of Children At Risk for Communication and/or Language Delays



Play was mostly social and active, similar to observations in other populations

Introduction

Outdoor time during school or child care (i.e., recess) affords **unstructured free-play** which can positively benefit motor, cognitive, and social development.¹

- Schoolyard design influences children's ability to realize these benefits.²

Low parental education, hearing loss, premature birth, and several developmental disorders put **children at risk for communication and/or language delays**, which adversely affects social development and academic readiness.³

Optimizing schoolyard design may be an avenue to positively benefit children at risk for communication and/or language delays by promoting active play, conversation, and social interaction.

Our purpose was to characterize the free-play behaviors of children who are at risk for communication and/or language delays to inform schoolyard changes which promote physical activity, social interaction, and language development during outdoor play.



Figure 1. Research assistant completing observations

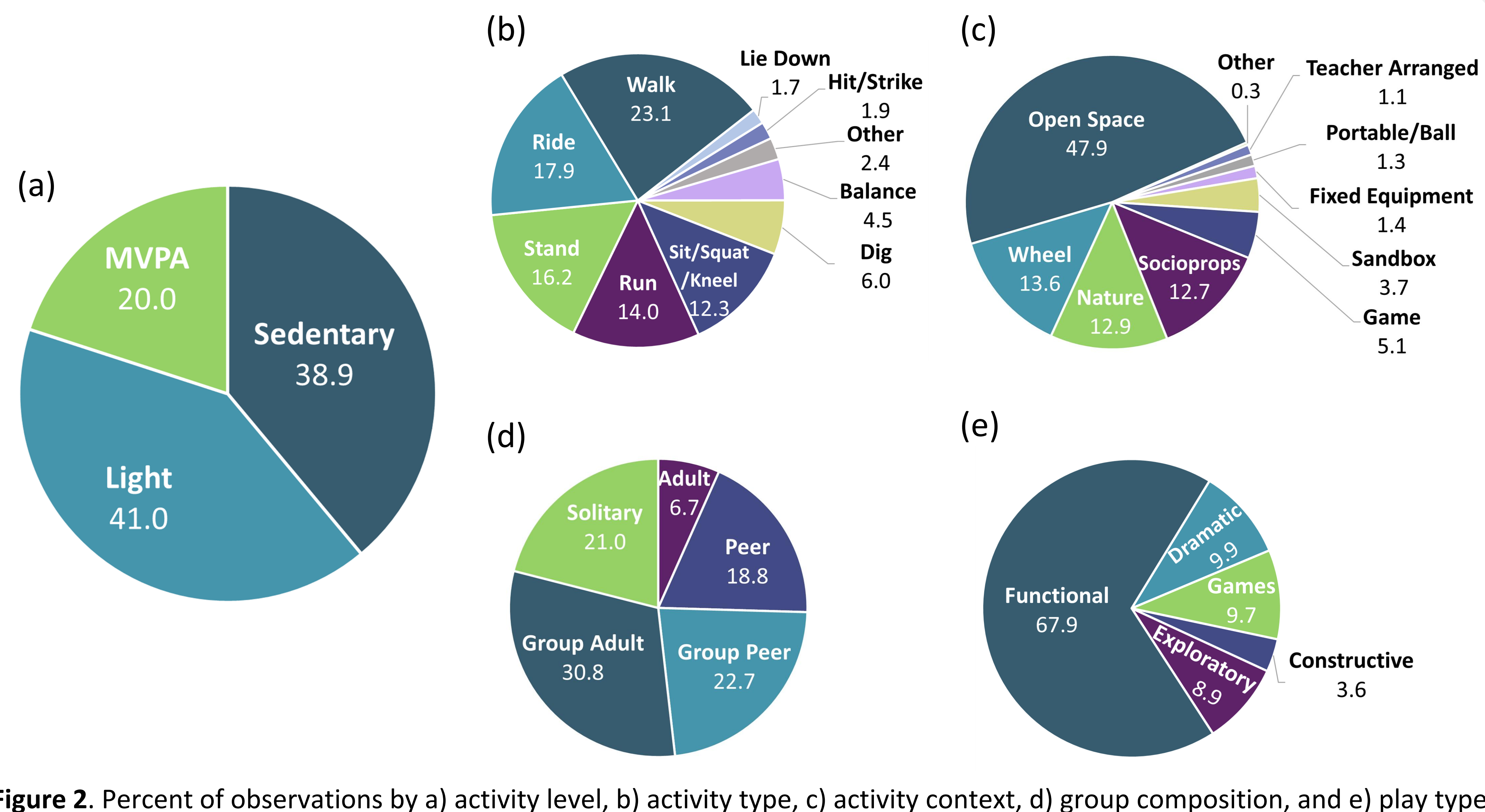


Figure 2. Percent of observations by a) activity level, b) activity type, c) activity context, d) group composition, and e) play type

Methods

Sample/Setting

- The Institutional Review Board designated this as non-human-subjects research as the purpose was program evaluation
 - No identifiable information were collected
- Preschoolers or kindergarteners (n=16) at risk for communication and/or language delays participated

Data Collection (Fall 2022)

- Each child was directly observed for 1 day which included 1 or 2 recess periods (Figure 1)
 - 5-sec observe, 25-sec record cycle (1 observation every 30-sec)
 - Cyber Tracker used to record outcomes from the *Observational System for Recording Activity in Children*⁴ and *Play Observation Scale*⁵

Data Analysis

- Mean and standard deviation were calculated

Results

- 25 individual recess periods
- 61% of observations spent in **total physical activity** (Figure 2a)
- Walk, ride, and stand were the most common **activity types** (Figure 2b)
- Open space, wheel, nature, and socioprops were most common **activity contexts** (Figure 2c)
 - Play in/with **nature** occurred for 19% of observations
- Majority of observations (79%) were spent in a **social setting** (Figure 2d)
- Most common **play type** was functional (68%; Figure 2e)
- Children engaged in **conversation** for 31% of observations

Conclusion

- Participants spent similar time in **moderate-to-vigorous physical activity**, compared to prior research (20 vs 17%)⁴
- Less time was spent in **fixed equipment or portable/ball contexts** than prior research⁴, likely due to the playground design (no fixed equipment present, little portable equipment)
- Children may have been more **solitary** than prior research (21 vs 15%)⁶
 - Lack of research with children at risk for communication and/or language delays so not clear why these differences exist

Limitations

- Small sample size (n=16)
- No comparison group (e.g., peers not at risk for communication delays)
- Did not control for variables like weather which could affect play

Future Directions

- Will use this data to inform **playground design** for children at risk for communication and/or language delays
- We are conducting similar observations of children's **indoor free-play** to inform optimal classroom design

References:

1. Truelove S et al. (2018). *Prev Med*.
2. Clevenger KA et al. (2020). *Kin Rev*.
3. Nelson KE et al., (2011). *First Lang*.
4. Brown WH et al. (2009). *Child Dev*.
5. Rubin KH. (1989). *The Play Observation Scale*.
6. Nicaise V. (2011). *Prev Med*.