Assessing Social Determinant Differences in Physical Activity Among Children

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Background

- Previous literature demonstrates a difference in children's physical activity (PA) patterns based on family income.[1-2]
  - Children from less affluent homes obtain fewer minutes of PA than their more affluent peers.
- Animal research has demonstrated that activities done within a social setting, regardless of length of PA, were more effective.[3]
- As our focus moves from PA quantity to quality, we must revisit this income association to see if differences exist and, if so, why.

Purpose of Study

- The purpose of this study was to re-examine the association between family income and children's PA opportunities (quantity and type).

Study Methods

- Children (10-12 years) enrolled in a rural school setting were eligible to participate in a physical activity intervention study.
- Parent baseline surveys provided: demographics, children's PA and sedentary behaviors, and parent support of their children's PA.
  - Parent reports of children's sedentary behaviors were based on: (1) none; (2) 15 minutes; (3) 30 minutes; (4) 1 hour; (5) 2 hours; (6) 3 hours; or (7) 4 or more hours
  - Parent reports of knowledge and support were based on: (1) Never/Almost never; (2) Monthly; (3) Weekly; (4) Almost Daily; (5) Daily
- Descriptive analyses were conducted on all study variables for sample characteristics. ANOVAs were used to compare differences in children's PA and parental PA support based on family income.
  - Study outcomes were compared across three income levels: (1) ≤ $15,000; (2) $15,001-$99,999; (3) ≥ $100,000

Participant Characteristics

- 560 parents completed baseline questionnaires
- Parent race/ethnicity:
  - Majority were Caucasian (93.3%); 1.3% African American, 1.5% bi-racial or multi-racial, 0.6% Asian, and 0.6% Hispanic
- Family income:
  - 12.1% families lived at or below poverty level (≤ $15,000)
  - Majority (66.7%) reported salaries between $15,001 and $99,999
  - 16.3% reported incomes ≥ $100,000
- 86.0% mother responding
- 34.7% some college; 25.7% high school
- 70.1% married

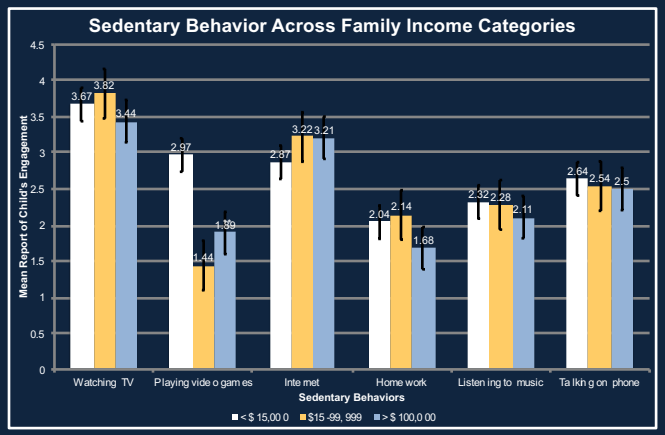
Children's Physical Activity

Mean Minutes of Physical Activity

- Average sample PA (in minutes) during the weekday: 965.38
- Average sample PA (in minutes) during the weekend: 932.29
- Average PA did not significantly differ by family income group.

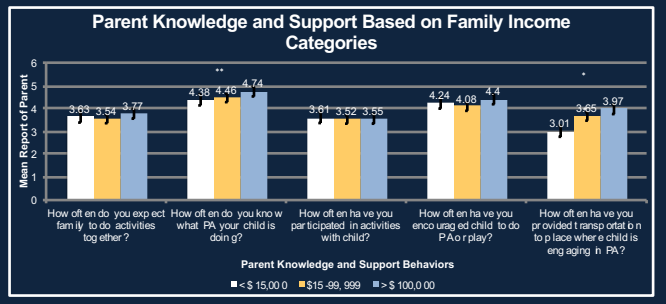
Sedentary Activities

- Significant differences were found in children's video game playing (p<.001) based on family income (greater means = greater engagement).
- No other significant differences were noted.



Parent PA Knowledge and Support

- Significant differences were found in how often parents knew what PA their children were doing based on income (p<.05)
- Transportation to PA opportunities also significantly differed by income (p<.001)
- No other significant differences in parent knowledge or support/encouragement of PA was noted by income levels



Conclusions

- Children from less affluent families obtain just as much PA as their more affluent peers.
- Most children engaged in similar levels of sedentary behavior EXCEPT for video game play where children from the two extreme income brackets played video games more often than those from middle-class families.
- Parent knowledge about the type of PA their children engaged in significantly increased with family income as did parent reports of transportation options to and from PA events. All other parent support indices were similar by income levels (e.g., encouragement for PA).
- While based on a selective sample of parents at one time point, these findings support that not all differences in PA based on income cast a negative light on those with less income.
- Future studies may wish to revisit associations between children's PA (quality and quantity) and health outcomes to see if less affluent children continue to experience poor health outcomes related to limited PA specifically.

References

[1] Shropshire J, Carroll B. Family variables and children's physical activity: Influence of parental exercise and socio-economic status. 1997. Sport, Education, and Society; 2(1): 95-116.

[2] Tandon PS, Zhou C, Sallis JF, Cain KL, Frank LD, Saelens BE. Home environment relationships with children's physical activity, sedentary time, and screen time by socioeconomic status. 2012; Int J Beh Nut and Phys Act.; 9 (88): 1-9

[3] Hillman CH, Erickson KI, Kramer AF. Be smart, exercise your heart: Exercise effects on brain and cognition. 2008. Nature Reviews Neuroscience; 9: 58-65.

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