Title: Path models of neighborhood effects on child injuries

Authors: Jim McDonell, D.S.W.

Tracy Waters

Contact: Institute on Family and Neighborhood Life

Clemson University

158 Poole Agricultural Center

Clemson, SC 29634 USA

Phone: (864) 250-4663

Fax: (864) 250-4633

E-mail: JMCDNLL@clemson.edu

Abstract: Drawing on data from observations of neighborhood characteristics and ICD-9 CM coded hospital inpatient and emergency room discharge diagnoses for injuries to children, this presentation reports the results of path analysis models predicting child injuries resulting from road vehicle accidents and falls.

Proposal: This presentation draws on observational data collected on 244 neighborhoods from 136 block groups in South Carolina. The 41-item Neighborhood Observation Scale produces eight sub-scales, which have been shown to be reliable and valid (McDonell & Waters, 2010). Of rated neighborhoods, 69% were residential only and 16.8% were predominantly residential. Housing stock varied: 53.3% of residences were single-family detached, 16.4% duplex or row housing, and 14.3% mobile homes. On a 10-point scale, with higher scores indicating the positive end of the rated dimension, the average sub-scale values were 7.18 (SD=1.55) for neighborhood physical appearance, 7.89 (SD=.33) for school physical appearance, 3.30 (SD=.54) for neighborhood social quality, 4.69 (SD=.99) for indicated social engagement, 3.24 (SD=.86) for observed social engagement, 5.37 (SD=.45) for park/public space social engagement, 2.41 (SD=.91) for resident watchfulness, and 5.44 (SD=.95) for neighborhood safety risk. Rates of child injuries were calculated for the same 136 block groups using ICD-9 CM coded discharge diagnoses for injuries to children. Twenty-one categories of child injuries were collapsed into 9 primary types of injuries calculated as rates per 1,000 children. The average rate of child road vehicle injuries per block group was 21.9 (SD=18.2) and the average rate of child falls was 28.0 (SD=21.4). Path analyses indicate that neighborhood characteristics predict 13.2% of the variance in child injuries resulting from road vehicle accidents [χ²(4) = 10.47, p < 0.05, CFI = 0.997, RMSEA = 0.038] and 14.7% of the variance in child injuries resulting from falls [χ²(2) = 2.8, p = 0.230, CFI = 1.00, RMSEA = 0.021]. This presentation will 1) report on the results of path analysis models, 2) discuss the direct, indirect, and interaction effects of neighborhood characteristics on child injuries, and 3) discuss the implications for research design and policy development.