

A longitudinal cohort study of obesity, depression and health related quality of life among pre-adolescent urban disadvantaged children

Dr Sonam Prakashini Banka¹, Dr John Hyland², Dr Pauline Hyland², and Professor Catherine Comiskey¹

Population Health and Behaviour Research Group

¹School of Nursing & Midwifery, Trinity College Dublin & ²Psychology Department, Dublin Business School

Introduction

Children's physical and mental health are ongoing concerns for schools, more so in disadvantaged areas (Comiskey et al., 2012; Duncan & Lamborghini, 1994). School-aged children's health outcomes may vary depending on the schools they attend, and this is due to variations in the environment of the schools (Bonell et al., 2013). Generally, more health issues are observed among the school-level disadvantaged (Barnes, Belsky, Broomfield, Melhuish, & the National Evaluation of Sure Start (NESS) Research Team, 2006).

School-level disadvantage is defined as schools that are larger in size, have more children who require special educational assistance, and provide free meals (Barnes et al., 2006). To address these health concerns, internationally recognised health promotion programmes are delivered in schools in an attempt to improve the physical and mental health outcomes of children (Denman, Moon, Parsons, & Stears, 2003).

Two key health-related issues such programmes focus on include childhood obesity and depression, both of which have been seen to increase in recent years.

Objectives

The aim of this study was to provide a longitudinal analysis of obesity, depression and health related quality of life among urban disadvantaged children over a three-year period.

Methods

A sample of 449 children aged between 8 to 12 years took part in a longitudinal cohort study from 2009 to 2011. Children completed self-reported psychometric measures to gather data on their health status and psychosocial wellbeing. Measures included the Children's Depression Inventory (Kovacs, 1992) and the KIDSCREEN-27 (KIDSCREEN Group Europe, 2006). A children's nurse recorded the Body Mass Index measurements

Before data collection began, written consent was sought from parents, and assent to participate from children. The survey component took approximately 40 minutes to complete. Once completed, children's weight and height were individually recorded by the children's nurse.



Drawings from participants in the study

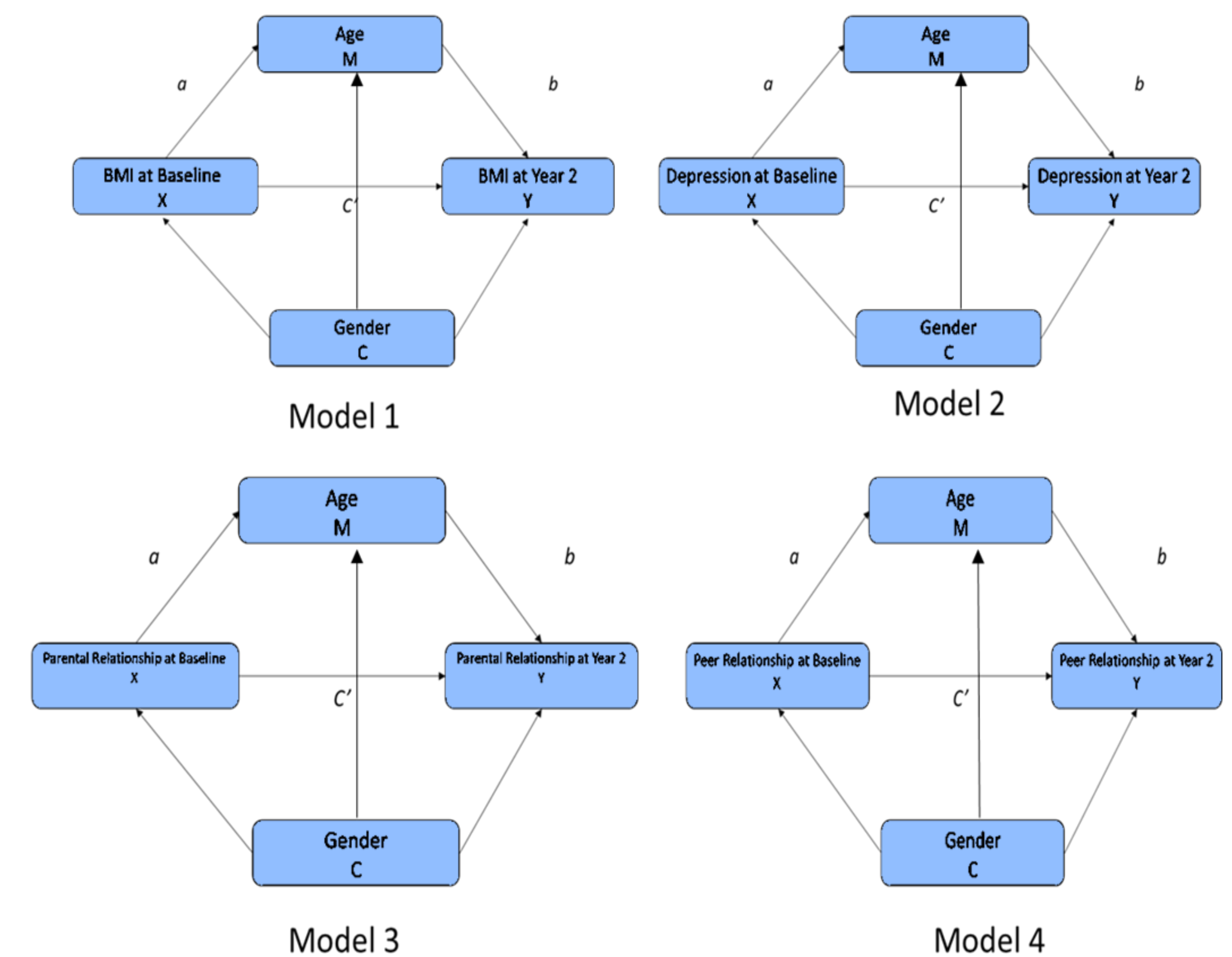
Results

To explore the changes in children's physical and mental health outcomes over time, BMI, depression, and HRQoL, the non-parametric Freidman's tests were employed, as the data were not normally distributed.

Mediation analyses were conducted on variables that were significantly affected over time, with age as a mediator and gender as a covariate. The aim of mediation models is to analyse the effect of a mediating variable (M) on two other variables. The mediating variable, M, is an intermediate between a predictor (X) and an outcome variable (Y) (Fairchild & MacKinnon, 2009; Preacher & Hayes, 2004). For example, in model one of the current study, X is BMI at baseline, Y is BMI at year 2, and M is age. In this case, gender is also included in the model as a covariate to control for its effect on the model. This was applied to all four models reported.

Results suggest that health status did not change for these urban disadvantaged children. Children with initially poor or good health continued to exhibit poor or good health over the three year period. In addition increases in BMI and decreases in depressive symptoms were also observed.

	Baseline	Year 1	Year 2
Male	229, 51	220, 51.4	163, 51.7
Female	220, 49	208, 48.6	152, 48.3



Conclusion

Despite the young age of these children, physical and mental health conditions appeared to be entrenched and persistent. School and community based prevention programmes need to be provided an earlier stage to tackle these challenges. Findings suggests that children's obesity levels (based on BMI scores) increased over time. However, on a positive note, Depression symptoms decreased over time. Children's parental relationship and peer relationship scores increased over time, indicating improved relationship with family and friends. The mediation models reported that age and gender did not influence children's health status from baseline to year 2. However, baseline health status itself predicted children's health status at year 2.



References

- Childhood Development Initiative. (2017). *Community Research*. Retrieved April 6, 2018 <https://www.twcdi.ie/research-policy/community-research/>
- Comiskey, C. M., O'Sullivan, K., Quirke, M. B., Wynne, C., Hollywood, E., & MGilloway, S. (2012). Baseline results of the first Healthy Schools evaluation among a community of young, Irish, urban disadvantaged children and a comparison of outcomes with international norms. *Journal of School Health, 82*(11), 508–513
- Denman, S., Moon, A., Parsons, C., & Stears, D. (2003). *The health promoting school: Policy, research and practice*. Routledge.
- Hollywood, E., Comiskey, C., Begley, T., Snel, A., O'sullivan, K., Quirke, M., & Wynne, C. (2013). Measuring and modelling body mass index among a cohort of urban children living with disadvantage. *Journal of Advanced Nursing, 69*(4), 851–861.