

# Examining the Impact of a Peer-led Heathy Living Intervention using an Equity Lens

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## Background & Rationale

Childhood obesity rates in Canada have nearly tripled in the past 25 years. In Manitoba, the prevalence of childhood overweight and obesity (26%) is higher than the national average.

Healthy Buddies is a peer-led obesity prevention program that aims to promote healthy behaviours among elementary school-aged children in Manitoba.

Previous analyses of Healthy Buddies<sup>1</sup> demonstrated overall improvements in several health outcomes, including reductions in waist circumference and improved knowledge of healthy behaviours. However, it is not known whether the program is equally effective across the socioeconomically and geographically diverse participants.

## Objective

To evaluate the impact of the Healthy Buddies program, an elementary school-based, peer-led healthy living intervention, on health outcomes using an equity lens.

## Approach

- Nineteen schools in Manitoba were randomized to receive Healthy Buddies (HB) lesson plans or regular curriculum (control).
- Weekly lessons were delivered with the help of grade 4-6 students to grade 1-3 students for 21 weeks. Lessons were based on three themes:
  - Go Move!** (Aerobic fitness sessions)
  - Go Fuel!** (Lessons in healthy eating)
  - Go Feel Good!** (Lessons in self-efficacy, positive self image)
- Outcomes in younger students (**waist circumference, healthy living knowledge, and self-efficacy**) were measured at baseline and follow-up
- Waist circumference (in cm) was measured using a flexible tape at the level of the iliac crest. Healthy living knowledge and self-efficacy were assessed using standardized questionnaires<sup>2</sup>.
- Mixed effect modeling was used to test for an overall program effect, and also within sub-groups of equity measures (**sex, area-level income, and urban/rural status**). Models were adjusted for these equity measures and participant age.

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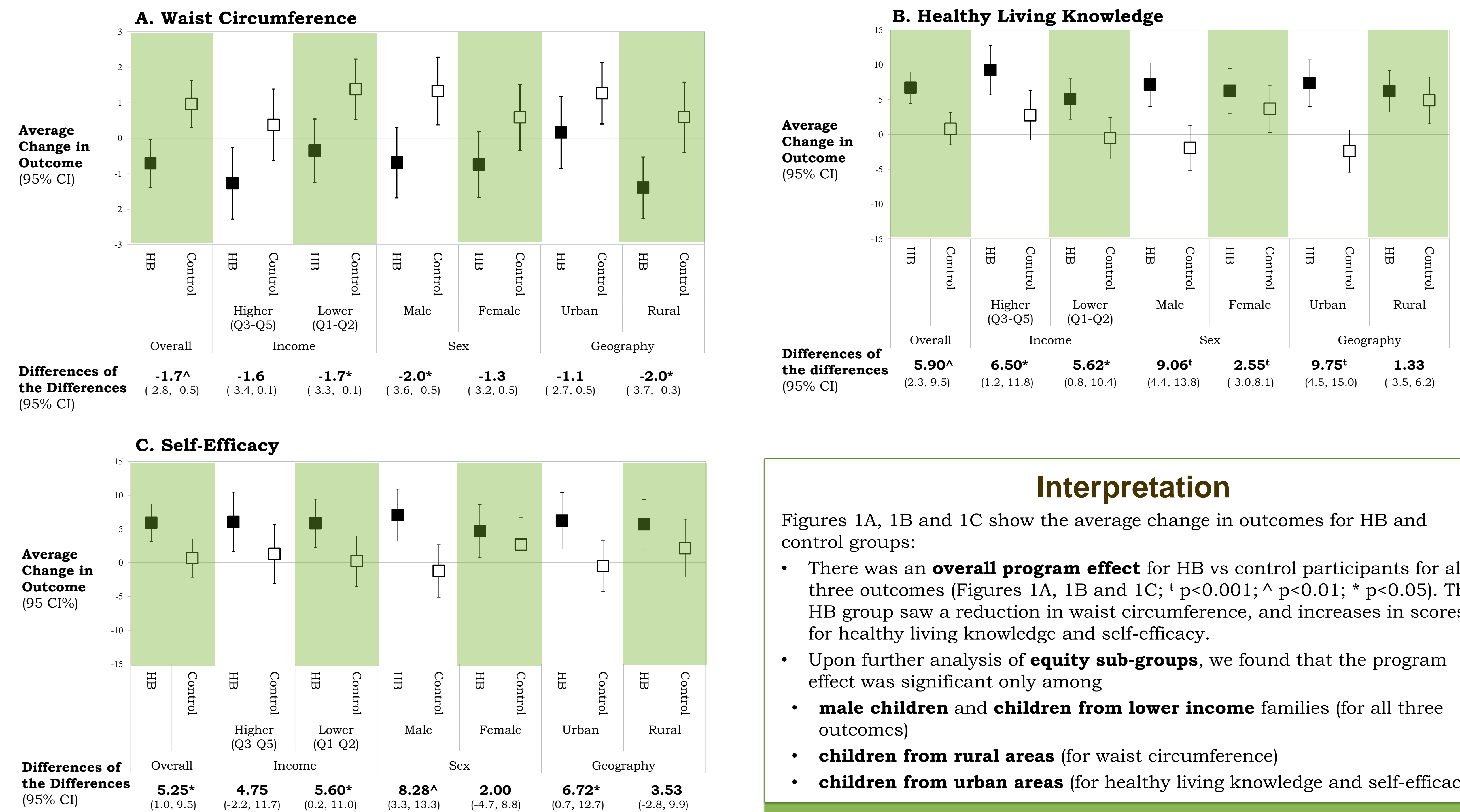
## Results

Table 1. Baseline Sociodemographic Characteristics and Outcomes

	n (%)	Age (%)		Sex (%)		Geography (%)		Income Quintile (%)			Outcomes		
		≤8	>8	Male	Female	Urban	Rural	Lower (Q1-Q2)	Higher (Q3-Q5)	Not found	Waist Circumference (cm)	Healthy Living Knowledge (score/100)	Self-Efficacy (score/100)
<b>Healthy Buddies</b>	156 (100%)	60.5	39.5	52.2	47.8	44.0	56.0	47.8	38.2	14.0	62.79*	76.65	83.20
<b>Control</b>	151 (100%)	89.0*	11.0	51.3	48.7	55.8*	44.2	50.3	39.7	10.0	60.47	78.55	86.31

\* At baseline, control group participants tended to be younger (p<0.001) than the HB group, live in urban neighbourhoods (p<0.035), and have a slightly smaller waist circumference (p<0.017).

Figure 1. Adjusted program effect on participant waist circumference, healthy living knowledge, and self-efficacy, overall and by equity measures.



## Interpretation

Figures 1A, 1B and 1C show the average change in outcomes for HB and control groups:

- There was an **overall program effect** for HB vs control participants for all three outcomes (Figures 1A, 1B and 1C; <sup>†</sup> p<0.001; <sup>^</sup> p<0.01; \* p<0.05). The HB group saw a reduction in waist circumference, and increases in scores for healthy living knowledge and self-efficacy.
- Upon further analysis of **equity sub-groups**, we found that the program effect was significant only among
  - male children** and **children from lower income families** (for all three outcomes)
  - children from rural areas** (for waist circumference)
  - children from urban areas** (for healthy living knowledge and self-efficacy)

## Conclusions and Implications

The Healthy Buddies program was developed to help improve weight-related outcomes and healthy living knowledge and behaviours in children. Our analyses demonstrate that the program is effective, but only for sub-groups of children (e.g., males, children living in lower income areas). The program has the potential to improve the health of children, but new or enhanced strategies are required to ensure the effectiveness of this program across sub-groups of socioeconomically and geographically diverse children.

## References

- Santos RG, Durksen A, Rabbani R, Chanoine JP, Lamboo Miln A, Mayer T, McGavock JM. Effectiveness of peer-based healthy living lesson plans on anthropometric measures and physical activity in elementary school students: a cluster randomized trial. *JAMA Pediatr.* 2014 Apr;168(4):330-7.
- Stock S, Miranda C, Evans S, Plessis S, Ridley J, Yeh S, Chanoine JP. Healthy Buddies: a novel, peer-led health promotion program for the prevention of obesity and eating disorders in children in elementary school. *Pediatrics.* 2007 Oct;120(4):e1059-68.