HEALTH SCORES!

“Evaluation of a real world intervention using professional football players to promote a healthy diet and physical activity in children and adolescents from a lower socio-economic background: a controlled pretest-posttest design”

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Background Health Scores! intervention

- Overweight and obesity rates among children and adolescents ↑
- In low SES children and adolescents ↑↑



(Lobstein & Frelut, 2003; Wang & Lobstein, 2006)

Background Health Scores! intervention

- Reason overweight and obesity?
  - Several complex and interacting processes
    - Genetic predisposition
    - Social, cultural and environmental factors
  - **Chronic energy imbalance!** $E_{in} > E_{ex}$

(Buttle et al., 2007; Baranowski et al., 2000)

Background Health Scores! intervention

- Energy imbalance
  - Energy intake: dietary intake
  - Energy expenditure: physical activity

$E_{in} > E_{ex}$

Background Health Scores! intervention

- Energy imbalance





$E_{in} > E_{ex}$

Background Health Scores! intervention

- Unhealthy dietary intake and low levels of PA → overweight and obesity
- Socio-economic disparities in these behaviours

  - Low SES adolescents less PA
    higher soft drink consumption
    lower daily fruit intake

(Broderson et al., 2007; Hanson & Chen, 2010; Vereecken et al., 2005)

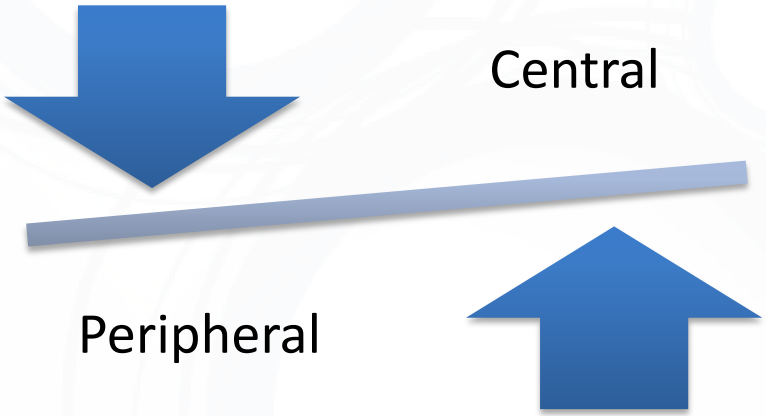
Background Health Scores! intervention

- Need for obesity prevention in low SES children and adolescents
- Hard to reach target population
- Elaboration Likelihood Model (ELM): persuasive communication

(Petty & Cacioppo, 1986)

Background Health Scores! intervention

- ELM:
  - Two ways of processing information



(Petty & Cacioppo, 1986)

Background Health Scores! intervention

- Central route
  - Motivation and ability to process information **high**
- Peripheral route
  - Motivation and ability to process information **low**
  - Peripheral cues (e.g. characteristiscs of the source): ↑ information processing

→ HEALTH SCORES! intervention (Petty & Cacioppo, 1986; Jones et al., 200

Background Health Scores! intervention

- Professional football players as role model/ credible source
- Promotion of PA and a healthy diet
- Socially vulnerable children and adolescents (10-14 year)

Intervention development

- Local-regional network for prevention
- Football^{+} Foundation
- Based on the Dutch intervention ‘Scoring with Health’

Intervention development and implementation

- Three intervention components



Intervention development and implementation

- Implementation took place during september 2011 to March 2012
- By local practitioners

Intervention development and implementation



- Implemented in football clubs

  - Healthy breakfast at the football club
  - Training and warming up with the professional football players
  - Signing a lifestyle contact
  - Certificate of participation signed by professional football players

Intervention development and implementation



- Implemented in school
  - Lessons and activities on PA and healthy diet (e.g. free fruit, active playground, activity breaks, fruit and vegetable quiz,…)
  - Video messages and two letters from the professional football players on PA and a healthy diet.

Participants

- **Intervention group**
  - Intervention was presented to all 8 professional football clubs in Flanders
  - Selection of schools in collaboration with the Centres for Student Counseling
  - Schools were ranked according to the proportion of socially vulnerable pupils
  - Each club could include as many classes of pupils as they wanted, with a minimum of 50.
  - Inclusions of last two years of elementary school and first two years of secondary school → 10-14 year olds

Participants

- **Control group**
  - Similar selection procedure
  - Received care as usual (including PE lessons)
  - Matched on region, school authority, grade of pupils
  - Ratio 1/3 control and 2/3 intervention

Measurements

- Controled pretest-posttest design
- Self-administered questionnaires:
  - Flemish Physical Activity Questionnaire (Philippaerts et al., 2006)
  - Food Frequency Questionnaire (Vereecken et al., 2003)
  - Intervention group: additional questions at follow-up to obtain process data

Procedure

Data collection at baseline and follow-up through self-administered questionnaires.

Intervention:

- at start clinic (September – November 2011)
- four months later during end clinic

Control:

- at school during same time periods

Data analysis

Preliminary analysis:

- Descriptive statistics of sample characteristics
- Drop out analysis on baseline demographic and behaviour characteristics
- Independent samples t tests and chi square tests

Intervention effects:

- Repeated Measures analyses of variance (MANOVA)

Process data:

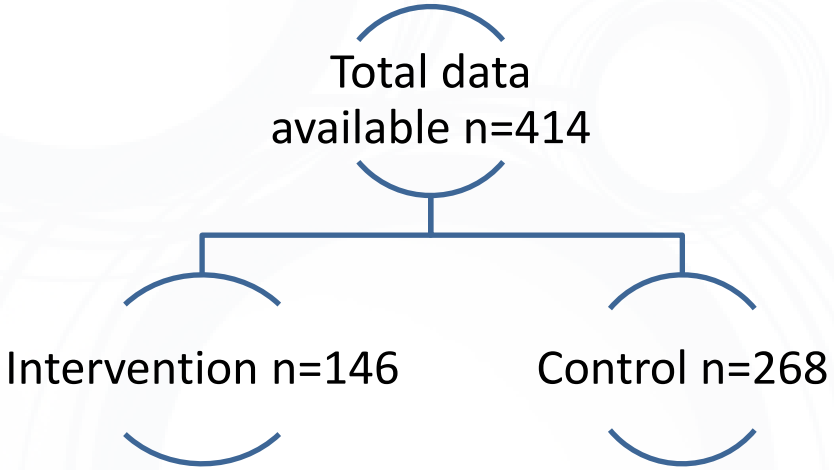
- Descriptive statistics

Level of statistical significance was set at $p<.05$

$< .10$ was considered a trend towards significance

Sample characteristics

Higher proportion of girls in the contol group (n=172, 39%) than in the intervention group (n=19, 12%) (<.001) → girls were excluded

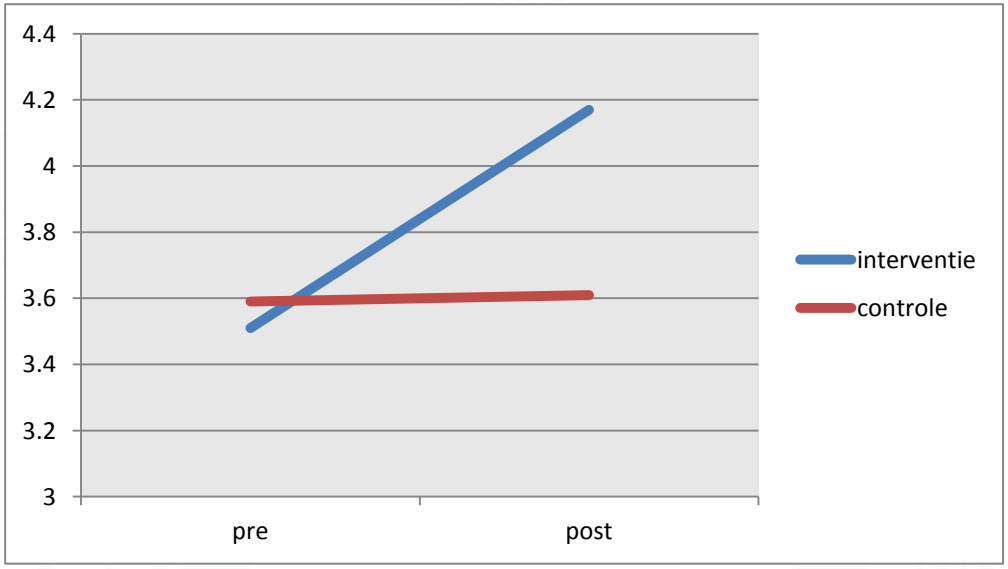


Sample characteristics

Baseline comparability			
	Intervention (n=146)	Control (n=268)	X^2 or t (p)
Age (years)	12.57 (1.02)	12.08 (1.58)	3.61 (***)
Employment status father (% employed	88%	84%	0.86 (ns)
Employment status mother (% employed)	44%	62%	9.86 (**)

Intervention effects

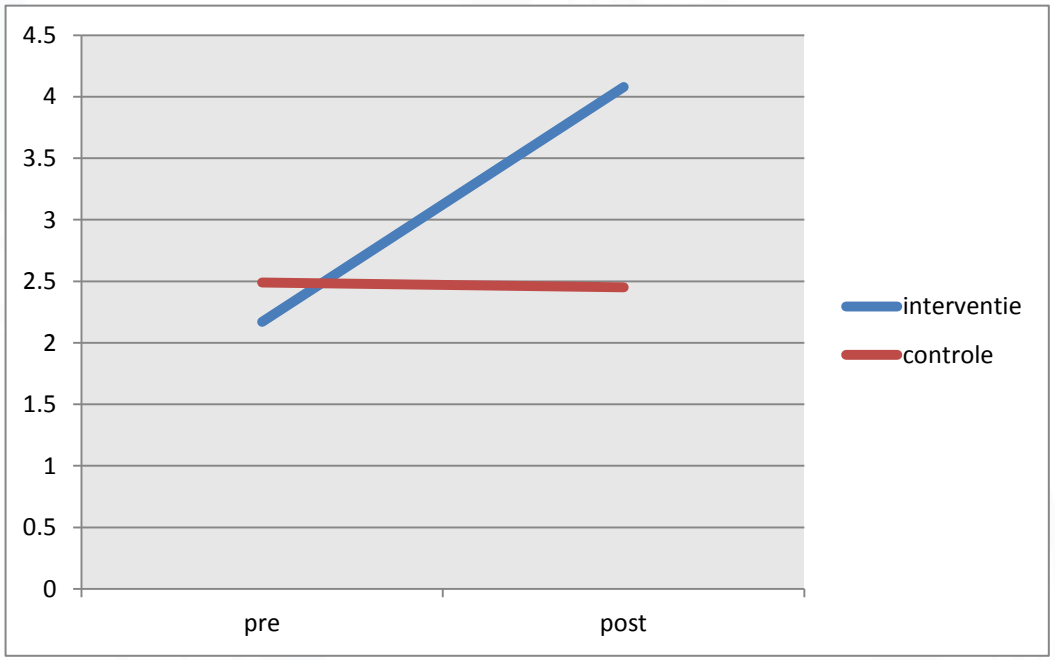
Self-efficacy daily breakfast (scale 1-5)



(p<0,01)

Intervention effects

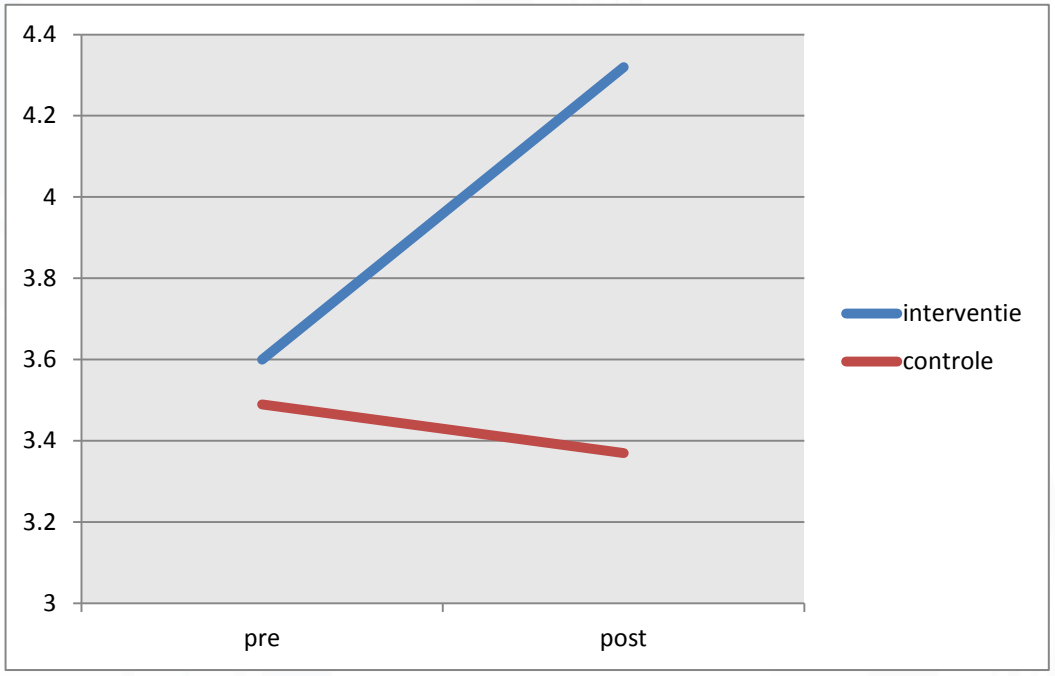
Attitude less soft drink consumption (scale 1-5)



(p<0,001)

Intervention effects

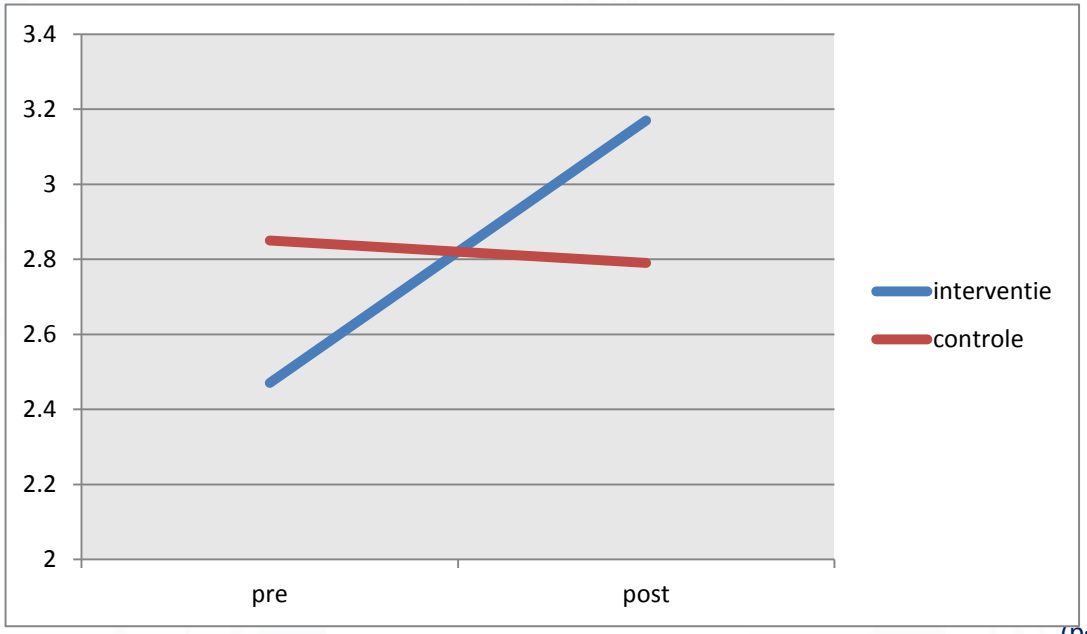
Attitude vegetable consumption (scale 1-5)



(p<0,01)

Intervention effects

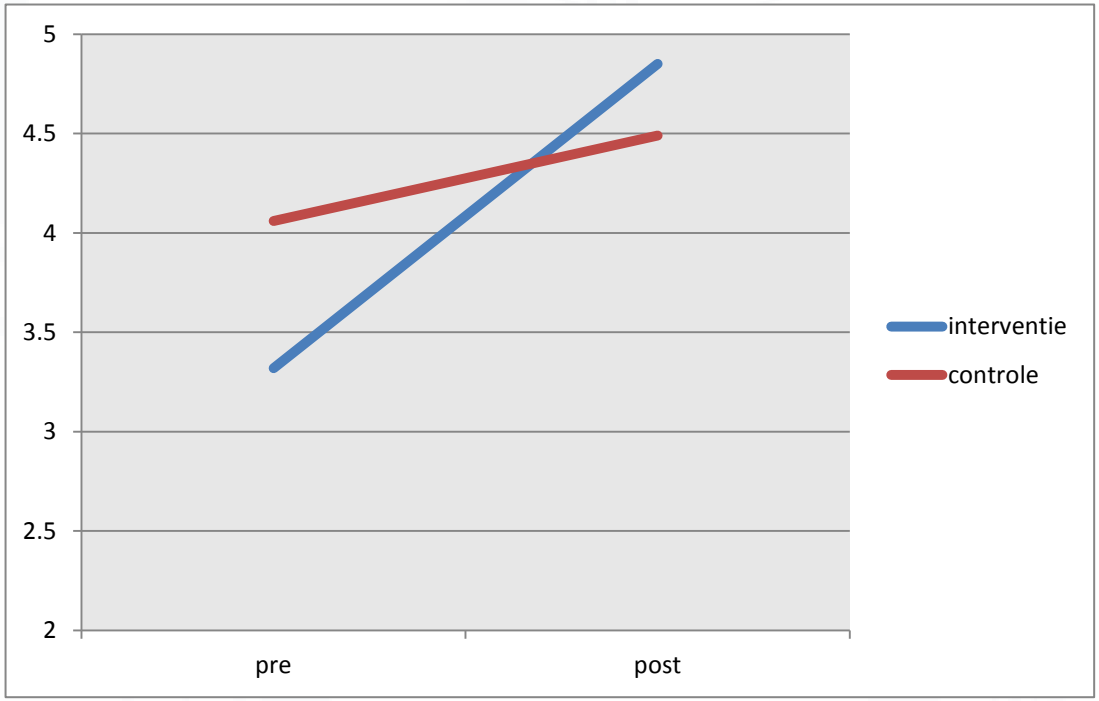
Consumption of water (number of glasses/day)



(p<0,10)

Intervention effects

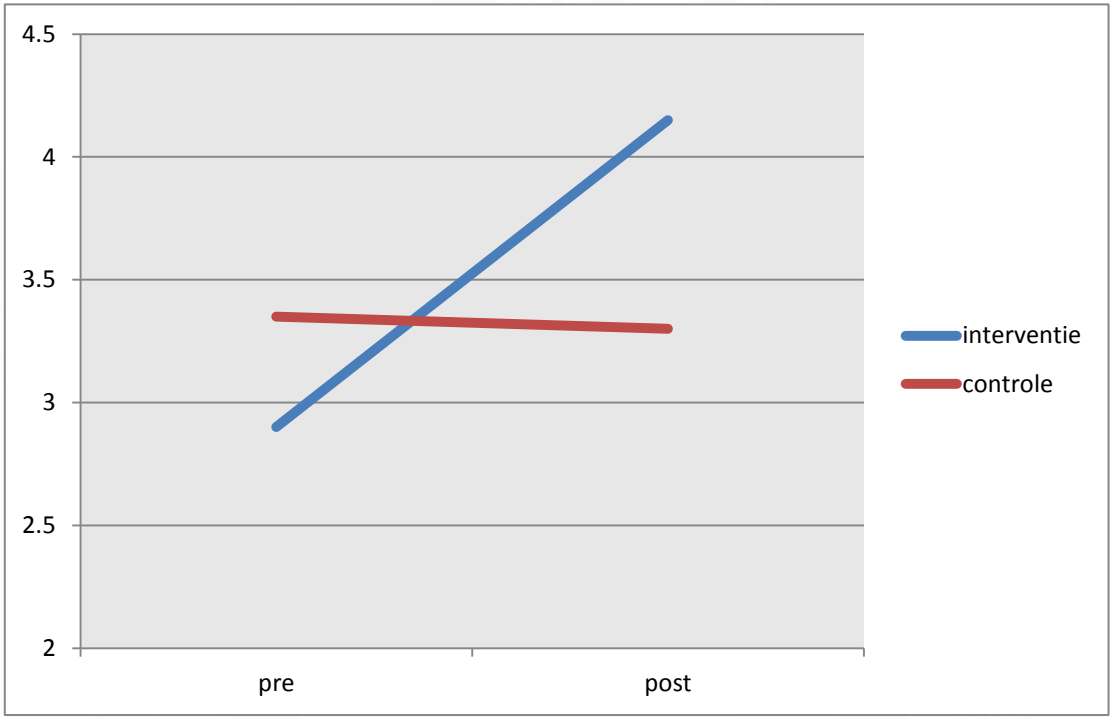
Consumption of vegetables (times/week)



(p<0,10)

Intervention effects

Self-efficacy for PA (scale 1-5)



p<0,10

Intervention effects

No significant interaction-effect for:

- Attitude towards daily breakfast
- Breakfast consumption
- Fruit consumption
- Soft drink consumption
- Attitude water consumption
- Attitude sweet and savoury snacks
- Consumption sweet and savoury snacks

Intervention effects

No significant interaction-effect for:

- Attitude PA
- Sport participation
- Active transportation

Process data

Topics mostly discussed in class:

- Breakfast
- Vegetable consumption

About 54% saw video messages and letters from professional football players

Process data



Positive project evaluation by pupils:

- Positive evaluation of the contact moments with the professional football players

- High total project appreciation score: 7,82 (2,38) / 10

Conclusions

Intervention mainly succesful in increasing **psychosocial correlates** of PA and a healthy diet.

= Dutch intervention no intervention effect was found for breakfast consumption and sweet and savoury snack consumption

≠ Dutch intervention: no intervention effect was found for soft drink consumption

No intervention effect for PA

→ PA not often discussed during classes

→ About 40% did not see video messages and letters from the professional football players.

Conclusions

Intervention mainly succesful in increasing **psychosocial correlates** of PA and a healthy diet.

Possible explanations?

- Duration intervention program not long enough to influence behaviour
- Lack of parental envolvement (important role in the development of healthy eating habits)
- Perception of professional football players as role models in different cultures

Conclusions

Limitations

- Intervention was implemented by local practitioners and not researchers → methodological weaknesses:

  - Non-random assignment of pupils
  - Limited number of pupils in the intervention group, no full estimation of intervention impact
  - Limited number of girls → intervention effect among girls could not be examined
  - No process evaluation among teachers
  - Researchers and teachers not trained to assist with the self-completion of the questionnaire → possible bias

Conclusions

Strenghts:

- Evaluation of a real world intervention
- Most studies on information processing and source characteristics are embedded within advertising → one of the first reporting on the effect of using a credible source to promote PA.
- The use of valid and reliable measures

Conclusions

Overal conclusion and recommendations for future research:

Using professional football players as a credible source to promote PA and a healthy diet in socially vulnerable children and adolscents is a **promising strategy**.

Though…

Conclusions



Further research questions:

Is the strategy of professional football players as a credible source to promote PA and a healthy diet effective in girls?

Are professional football players perceived as heroes/ role models by children from different ethnic backgrounds?

Can longer intervention period achieve larger intervention effects?

…

More information:

Dubuy V et al. 2014. Evaluation of a real world intervention using professional football players to promote a healthy diet and physical activity in children and adolescents from a lower socio-economic background: a controlled pretest-posttest design. *BMC Public Health* 14: 457.

Thank you.

Questions?

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