Eight years "*Maatjes In Balans*": an evaluation of an outpatient group treatment of middle school-aged children with obesity

Naets, T.[1], Peene, S.[2], Van De Steene, S.[2], Verdonck, L.[2], De Geeter, S.[2] & Braet, C.[1],

[1] Department of Developmental, Personality, and Social Psychology, Ghent University, Belgium
[2] AZ Alma, Eeklo, Belgium

az alma
zorg met een hart

INTRODUCTION

Today, obesity affects more and more children (Schalkwijk et al., 2015). Considering the negative consequences, like medical problems or malfunctioning peer contacts, it is necessary to implement evidence based protocols into treatment programs (Braet & Van Winckel, 2010). The implementation and evaluation of interventions developed at universities, can bridge the gap between research and practice. In this study, we investigate the effectiveness of "Maatjes In Balans", a treatment of AZ Alma (Eeklo), based on a protocol developed at the University of Ghent.

"MAATJES IN BALANS"

"*Maatjes In Balans*" treats obese middle school-aged children in an ambulant group setting. It is based on an evidence-based protocol (Braet et al., 2007). The main purpose lies in weight control en stabilization within a healthy lifestyle, since these goals are more important than drastic weight loss (Moens & Braet, 2012). The program consists of 16 child and 7 parent sessions in the first 6 months, and is followed by a follow-up period of 6 months of boostersessions. This study examines data of 8 years of the program.

METHOD

- PARTICIPANTS. 87 children
  - age: M=10, SD=1.53
  - 25 boys, 62 girls
  - 74.4% of the children has parents with overweight

- WEIGHT LOSS. By the "weight index", an adjusted form of the BMI scores
- PHYSICAL FITNESS. Shuttlerun, bicycling, and a far-jump
- EATING BEHAVIOUR. External, emotional and restrained eating (Nederlandse Vragenlijst voor Eetgedrag - Dutch Eating Behaviour Questionnaire, Van Strien et al 1986)
- FEELINGS OF PSYCHOLOGICAL COMPETENCE. Scholastic competence, social acceptance, athletic competence , physical appearence , behavioural conduct and overall self-worth (CBSK Competentiebelevingsschaal voor Kinderen - Self Perception Profile, Dutch Version, Veerman et al 2014, Harter 1985)

- DATA ANALYSIS.
  - Paired Sample T Tests
  - Missing Data Analysis: Intention To Treat & Expactation Maximisation
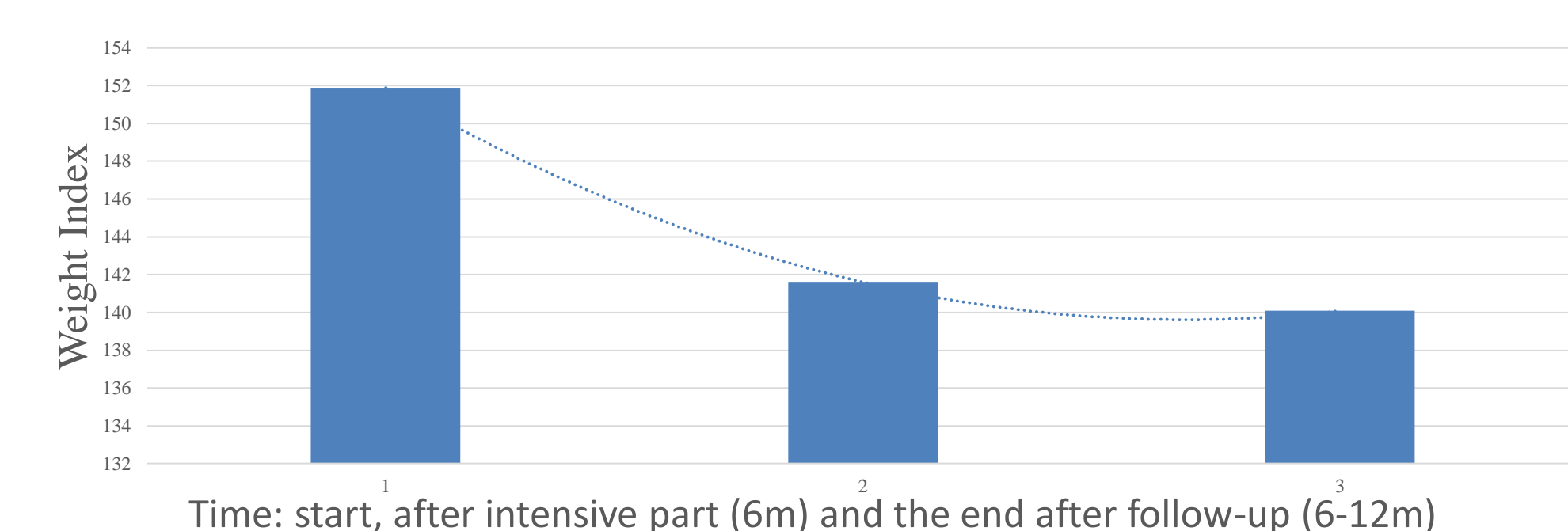
RESULTS

WEIGHT LOSS

Significant weight loss at start:
***End of treatment (Time 3) – Start (Time 1), $t(58) = 6.563$, $p < .001$. [150 -> 140]
***Intensive part (Time 2) – Start (Time 1), $t(78) = 9.285$, $p < .001$ [150 -> 141]

Stabilization instead of significant weight loss towards the end:
End of treatment (Time 3) – Intensive part(Time 2), $t(58) = -.452$ $p = .653$ [139 -> 140]

Time: start, after intensive part (6m) and the end after follow-up (6-12m)

% Weight Loss After 1 Year	# Children (%)
10-100	22%
5-10	14%
0-5	22%
Weight Gain	10%
Missing Data	32%

PHYSICAL FITNESS

*Shuttlerun: End (T3) – Start (T1), (60) = 2.932, p = .005 [28 -> 25s]
***Bicycle test: End (T3) – Start (T1), $t(46) = 4.509$, $p < .001$ [2,5 -> 3,2km]
Far-jump***: End (T3) – Start (T1), $t(60) = -3.842$. , $p = < .001$

EATING BEHAVIOUR

Emotional eating: End (T3) – Start (T1), $t(61) = 1.797$, $p = .077$
***External eating: End (T3) – Start (T1), 5.417 $p < .001$ [2,8 -> 2,4]
***Restrained Eating : End (T3) – Start (T1), $t(61) = 3.634$, $p = .001$. [2,6 -> 3,0]

FEELINGS OF PSYCHOLOGICAL COMPETENCE

End (T3) – Start (T1)
Scholastic Competence: $t(55) = .280$, $p = .708$
**Social Acceptance: $t(55) = 3.031$, $p = .004$ [17-19]
**Athletic Competence: $t(55) = 2.829$, $p = .006$ [14-16]
*** Physical Appearance: $t(55) = 4.823$, $p < .001$ [14-16]
** Overal Self Worth: $t(55) = 3.561$, $p = .001$ [16-18]
Behavioural Conduct: $t(55) = .705$, $p = .484$

MISSING DATA ANALYSIS

Intention To Treat	Expectation Maximization (MCAR OK)
Weight T3-T1: $t(74) = 6.649$, $p < .001$	Weight T3-T1: $t(86) = 6.929$, $p < .001$
Shuttlerun: $t(80) = 2.888$, $p = .005$	Shuttlerun: $t(86) = 4.074$, $p < .001$
Bicycle test: $t(68) = 4.235$, $p < .001$	Bicycle test: $t(86) = 5.784$, $p < .001$
Far-jump: $t(80) = 1.037$, $p = .303$	Far-jump, $t(86) = 1.537$, $p = .128$
Em eating: $t(84) = 1.788$, $p = .077$	Em eating: $t(86) = 1.472$, $p = .145$
Ext eating: $t(84) = 5.254$, $p < .001$	Ext eating: $t(86) = 6.849$, $p < .001$
Restr eating: $t(84) = 3.558$, $p < .001$	Restr eating: $t(86) = 3.133$, $p = .002$
Scholastic: $t(85) = .281$, $p = .779$	Scholastic: $t(86) = 1.161$, $p = .249$
Social Accept: $t(85) = 3.314$, $p = .001$	Social Accept: $t(86) = 3.635$, $p < .001$
Athletic: $t(85) = 2.769$, $p = .007$	Athletic: $t(86) = 3.695$, $p < .001$
Physical A: $t(85) = 4.226$, $p < .001$	Physical A: $t(86) = 5.931$, $p < .001$
Self Worth: $t(85) = 3.437$, $p = .001$	Self Worth: $t(86) = 3.755$, $p < .001$
Behavioural C: $t(85) = .706$, $p = .482$	Behavioural C: $t(86) = .472$, $p = .638$

CONCLUSION

After analyzing the data for several scientifically relevant determinants of obesity, we can conclude that the outcome of the program shows promising results. The children lost a significant amount of weight, got physically fitter, rely less on external eating and feel more competent within several psychological domains (social acceptance, athletic competence, physical appearance and overal self worth). Even when incorporating missing data with specific analysis, the results remain significantly powerful. We can state that the local implementation of the evidence based protocol can be considered as a succes. However, we see that the program wasn't able to lower emotional eating processes and there is still a significant group that doesn't reach the weight loss norm of 10%. This leaves a need for after care, more long-term follow-up and further scientific research.