Physical activity promotion in schoolchildren. Intervention-study centered on *playground marking*

PHYSICAL ACTIVITY PROMOTION IN PRIMARY SCHOOLCHILDREN. INTERVENTION-STUDY CENTERED ON PLAYGROUND MARKING
(PLAYGROUND MARKING IN PRIMARY SCHOOLS)

Maria Scatigna, MSc, PhD
Researcher
Department of Life, Health and Environmental Sciences
University of L'Aquila
Ospedale San Salvatore – Delta 6
67010 COPPITO (L'AQUILA) ITALY

Telephone +39 0862 434692
Mob +39 328 0204032
Fax +39 0862 433425
Email maria.scatigna@cc.univaq.it

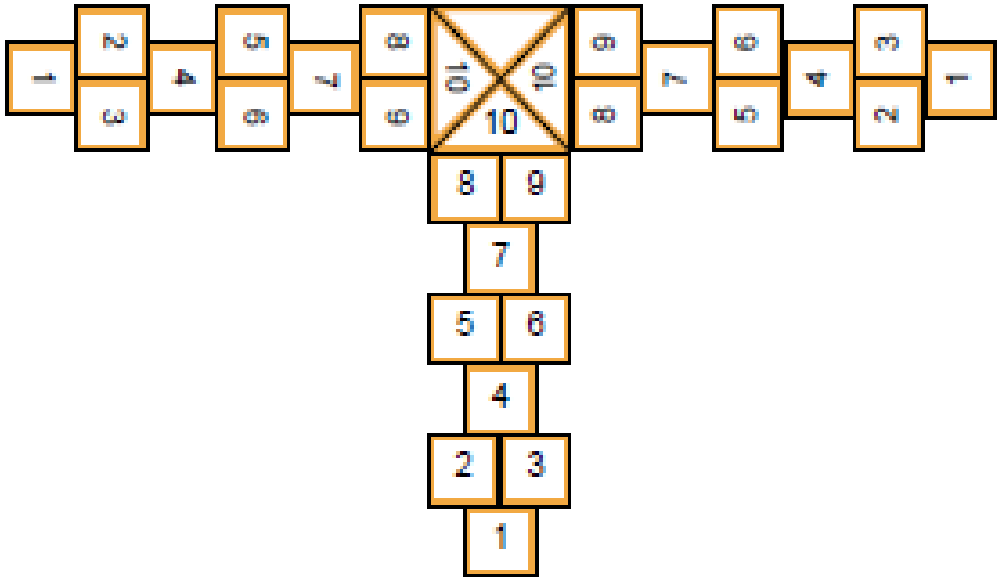
Introduction

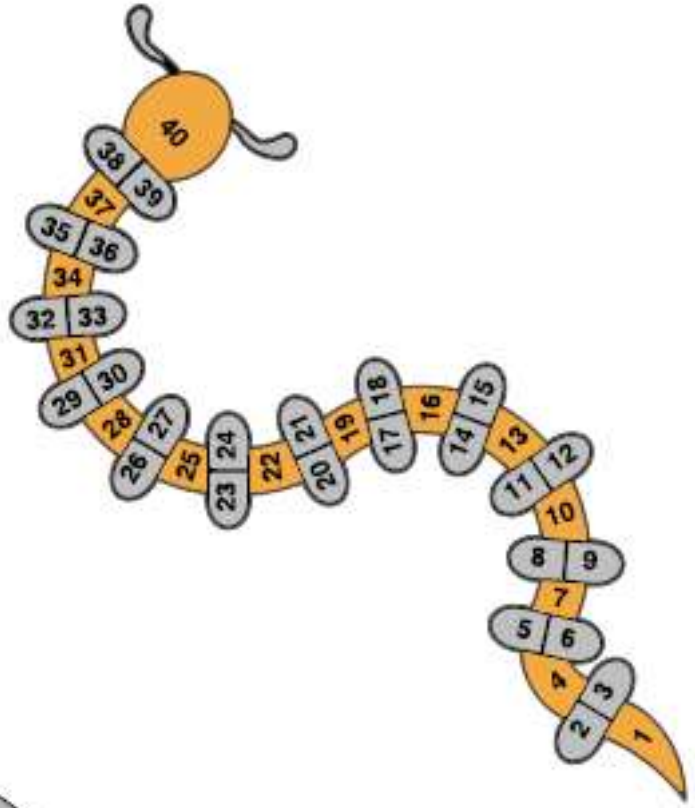
- The practice was realized in the school setting, specifically the primary schools.
  - It used a comprehensive approach in which the whole life school is involved in promoting Physical Activity
  - Our practice, in particular, was centered on playtime, also called recess time

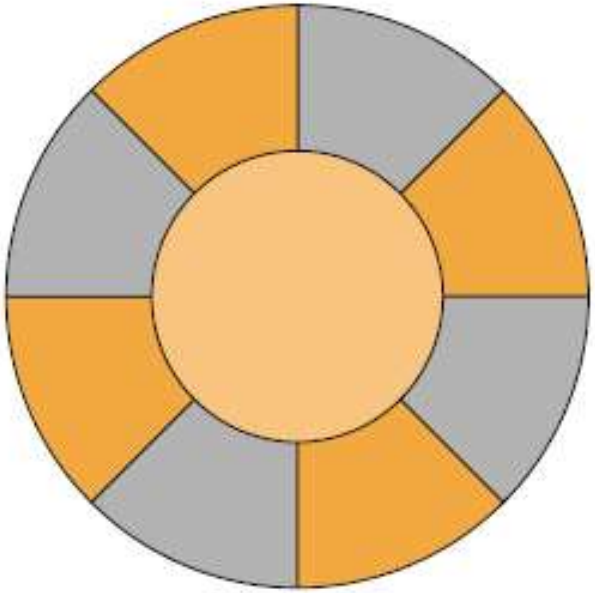
- We used the **playground marking**, on the basis of evidence-based literature.

Introduction

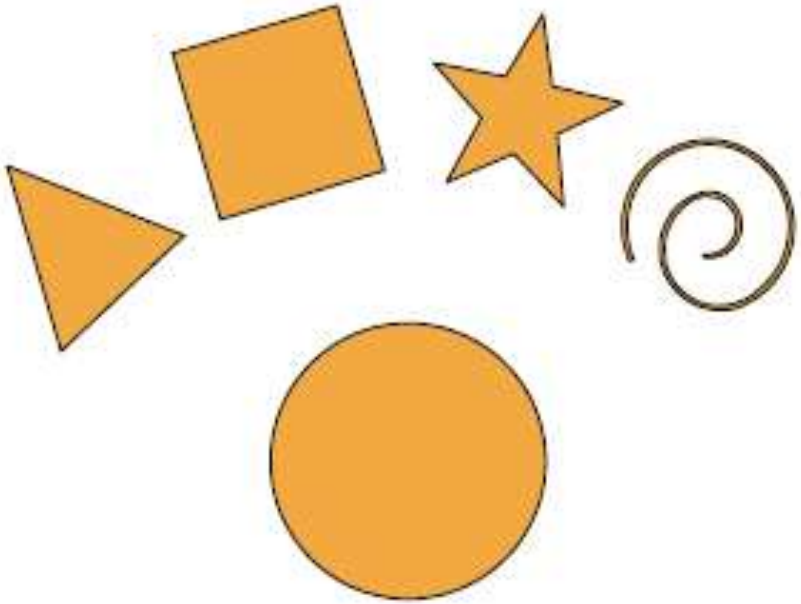
- The marked playground is an outdoor area of the school where children can play
- They were guided by colorful shapes painted on the surface (geometric, symbols, roads, footprint, animals, etc.)
  - At the beginning, children were trained about games, strictly defined by rules.
  - After a few weeks they were free to change the rules and create new ways to use the marks.
  - They also painted some original drawing created by themselves, practicing a sort of divergent thinking.

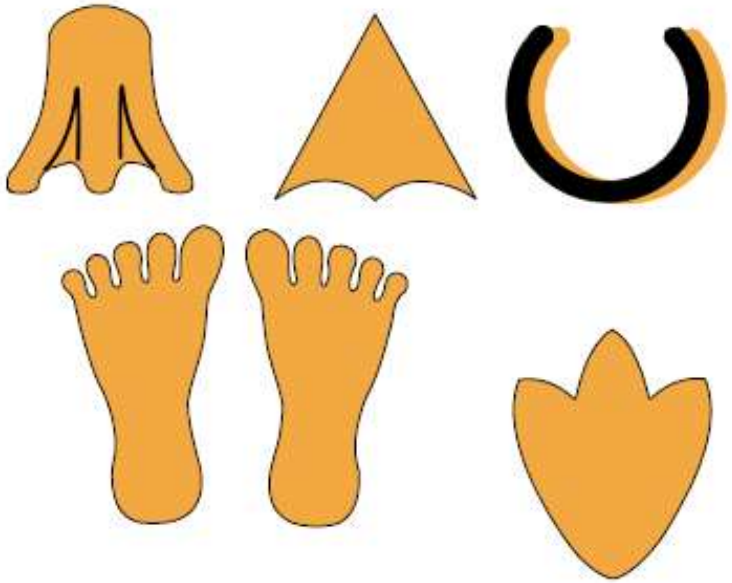




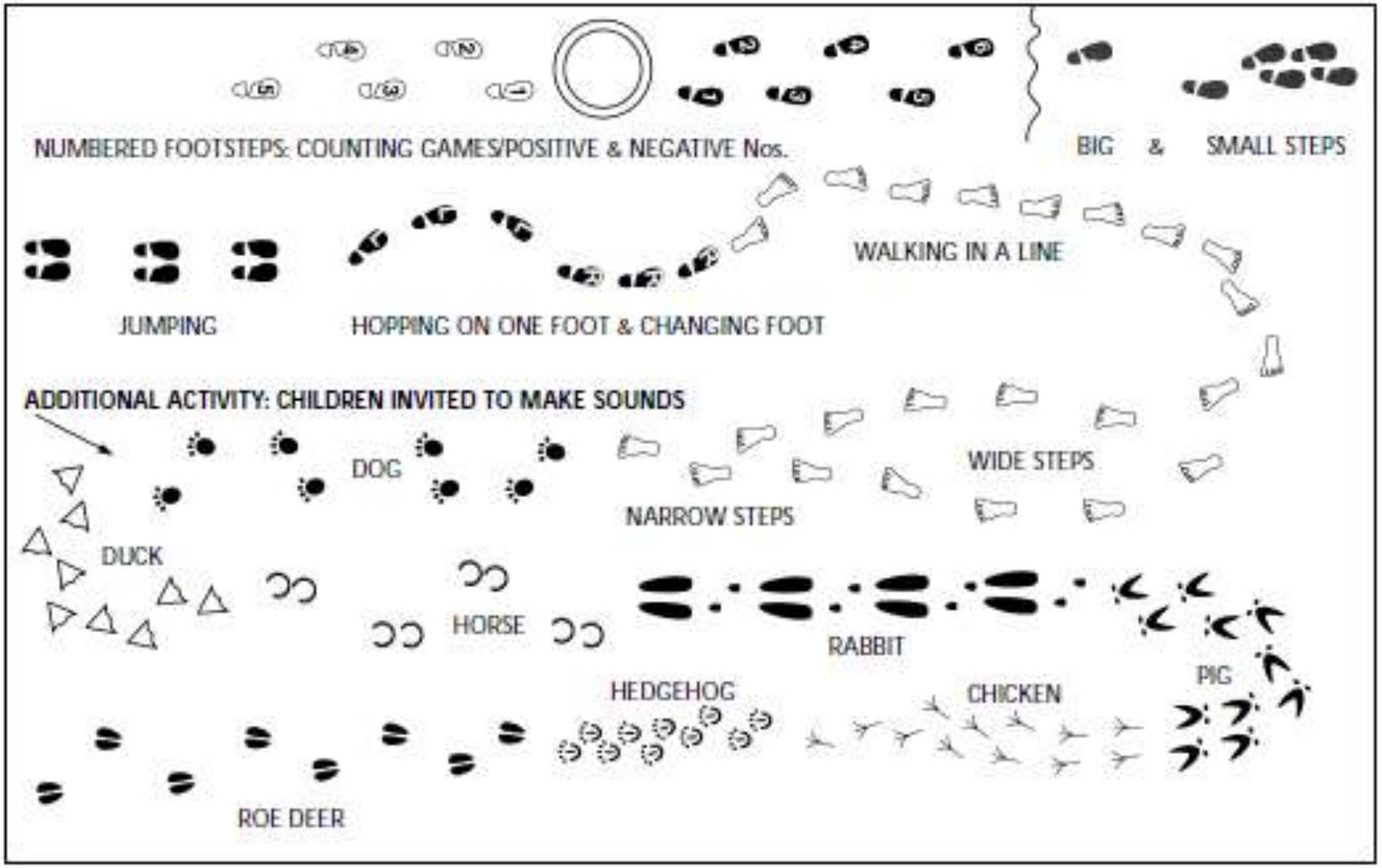


Welsh Assembly Government - Health Promotion Division, Office of the Chief Medical Officer. The Health Promoting Playground Ideas for marking your school playground. 2002, Cardiff. ISBN 0 7504 3061 3.

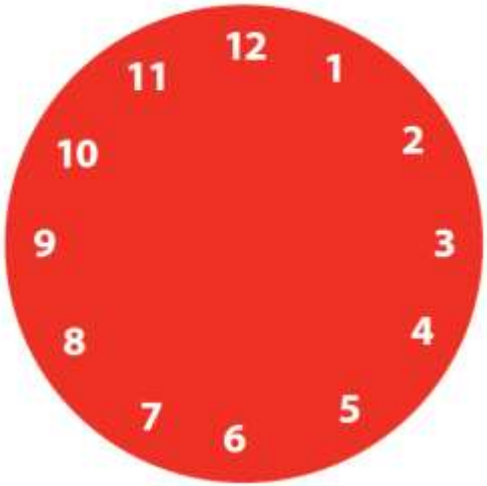




Welsh Assembly Government - Health Promotion Division, Office of the Chief Medical Officer. The Health Promoting Playground Ideas for marking your school playground. 2002, Cardiff. ISBN 0 7504 3061 3.



Welsh Assembly Government - Health Promotion Division, Office of the Chief Medical Officer. The Health Promoting Playground Ideas for marking your school playground. 2002, Cardiff. ISBN 0 7504 3061 3.



British Heart Foundation (BHF). Active Playgrounds. A Guide for Primary Schools. Active School. BHF 2001.

Objectives

- The main objective was to increase the **volume of daily physical activity (PA)** in children
  - to increase the amount of children's PA during school playtime (i.e. recess, lunch, before or after lessons);
  - to improve children's health-related fitness (i.e. motor skills such as running, throwing, jumping, catching and motor capacities such as aerobic endurance, muscular strength);
  - to teach children about active games that they can reproduce outside the school, by means of simple tools, e.g. by painting some colorful drawing by themselves on the home courtyard or street surface;
  - to improve children's behaviour and enhance the socialization at school and to make the classroom management by teachers easier;
  - to enhance children's academic achievement by improving attention and readiness to learn during lessons after the playtime;
  - to provide the institute with an environmental resource (the area of marked playground) available for the entire school community which remains

Intervention

- Preparation/painting of the *marked playground*
- Training of staff
  - Teachers
  - Supervisors
- Training of children
  - Rules for anagement of space and time
  - Rules for Safety
  - Games rules
- During one school year, the children used the playground after lunch time, with an accurate scheduling in school timetable

Intervention

- Supervisors and the same children were trained also about the rules for safety and management of the space and of the time
- They were also advised for managing the conflicts that might arise.
- During one school year, the children used the playground after lunch time, with ab accurate scheduling in school timetable.

Evaluation

- Outcomes
  - Physical activity levels
  - Physical fitness
  - Other skills (behavioural, social, academic)
- Feasibility / Liking
  - parents, headmaster, teachers and other staff
- Impact on school setting
  - Management of classes
  - Opportunity for extra-class & extra-school activities

Outcomes evaluation

Instruments

- **Questionnaires**
- **Antropometry**
- **Accelerometers**
  MPA, VPA, steps
- **Motor tests**
  - Cooper (6 min)
  - Eurofit (*Standing broad jump, shuttle run, sit ups*)
  - Coordinative for arms-legs (jump rope)
  - Coordinative of eyes – hands (ball throwing)

Epidemiological design

Controlled longitudinal

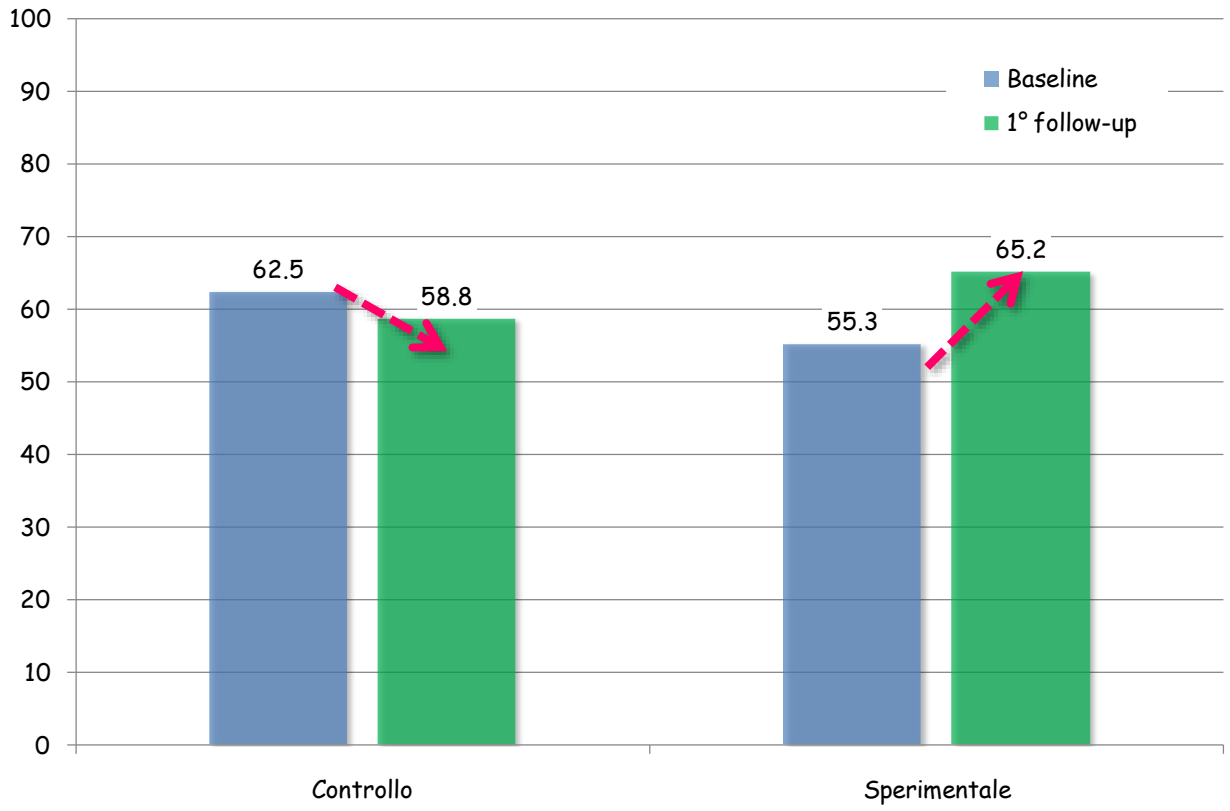
- Intervention classes and control

Study design

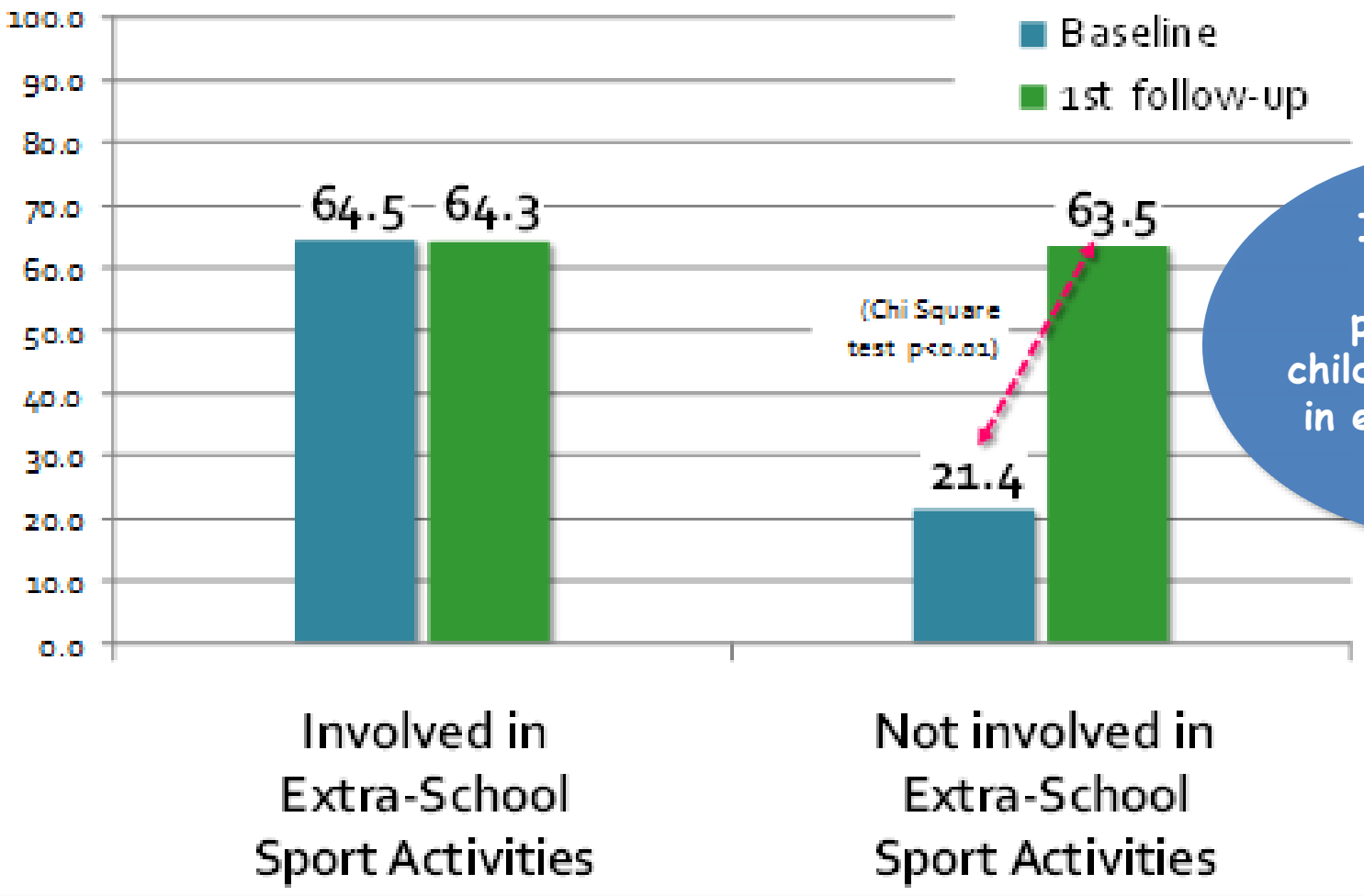
Activity	Group	Sep - 2012	Oct - 2012	Nov - 2012	Dec - 2012	Jan - 2013	Feb - 2013	Mar - 2013	Apr - 2013	May - 2013	Jun - 2013
Supervisors' training											
Data assessment - baseline motor tests, questionnaires, accelerometers	Classes I - III - V										
	Classes II - IV										
Playground use	Classes I - III - V										
	Classes II - IV										
Data assessment - 1st follow-up motor tests, questionnaires, accelerometers	Classes I - III - V										
	Classes II - IV										
Data assessment - 2nd follow-up motor tests, questionnaires, accelerometers	Classes I - III - V										
	Classes II - IV										

Proportion of children reaching the recommended daily MVPA levels (minimun, 60 min/day)

58,2 % at BASELINE and **62.5 %** at 1° FOLLOW-UP

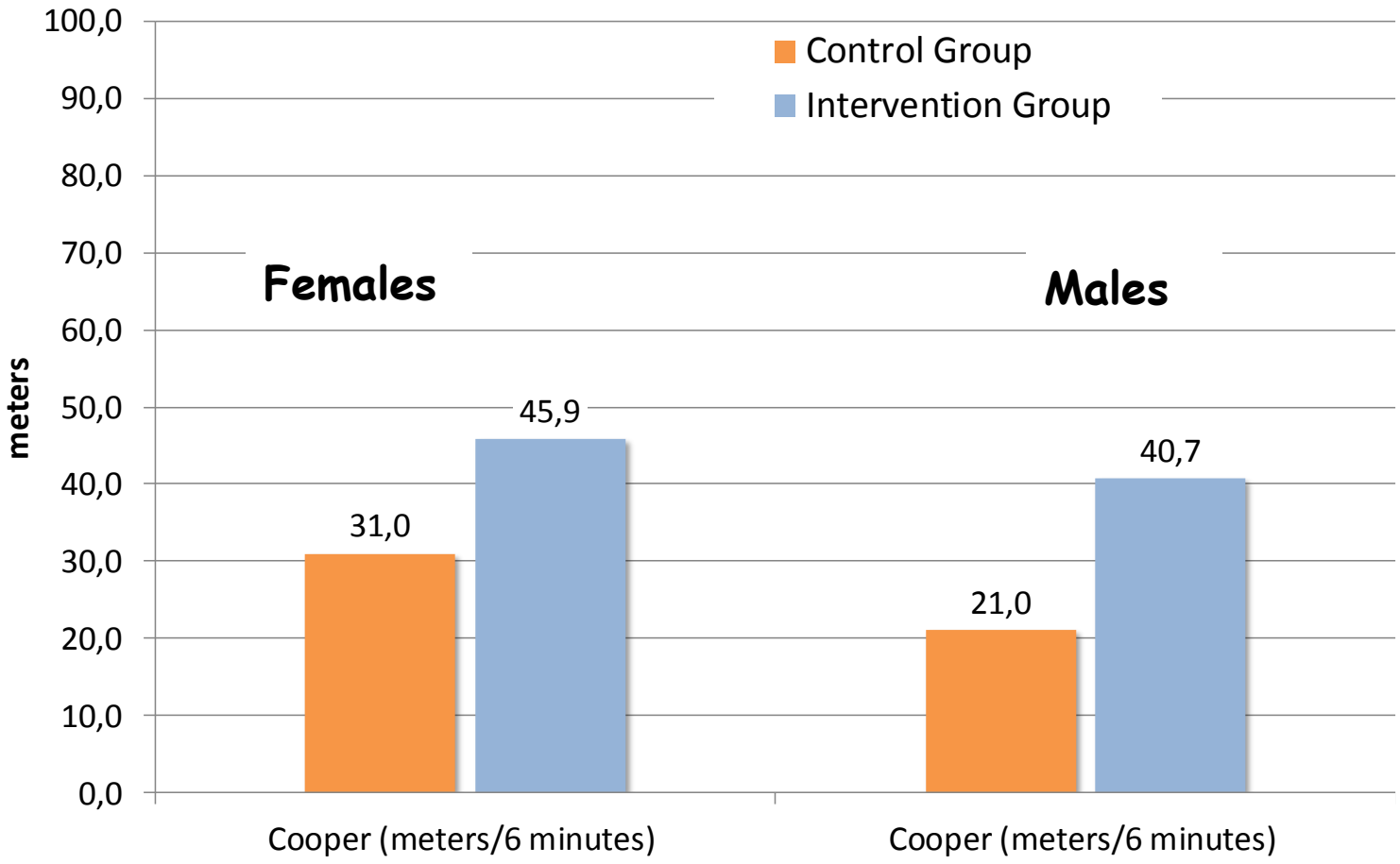


Percentuale di bambini che raggiunge i livelli minimi raccomandati di MVPA

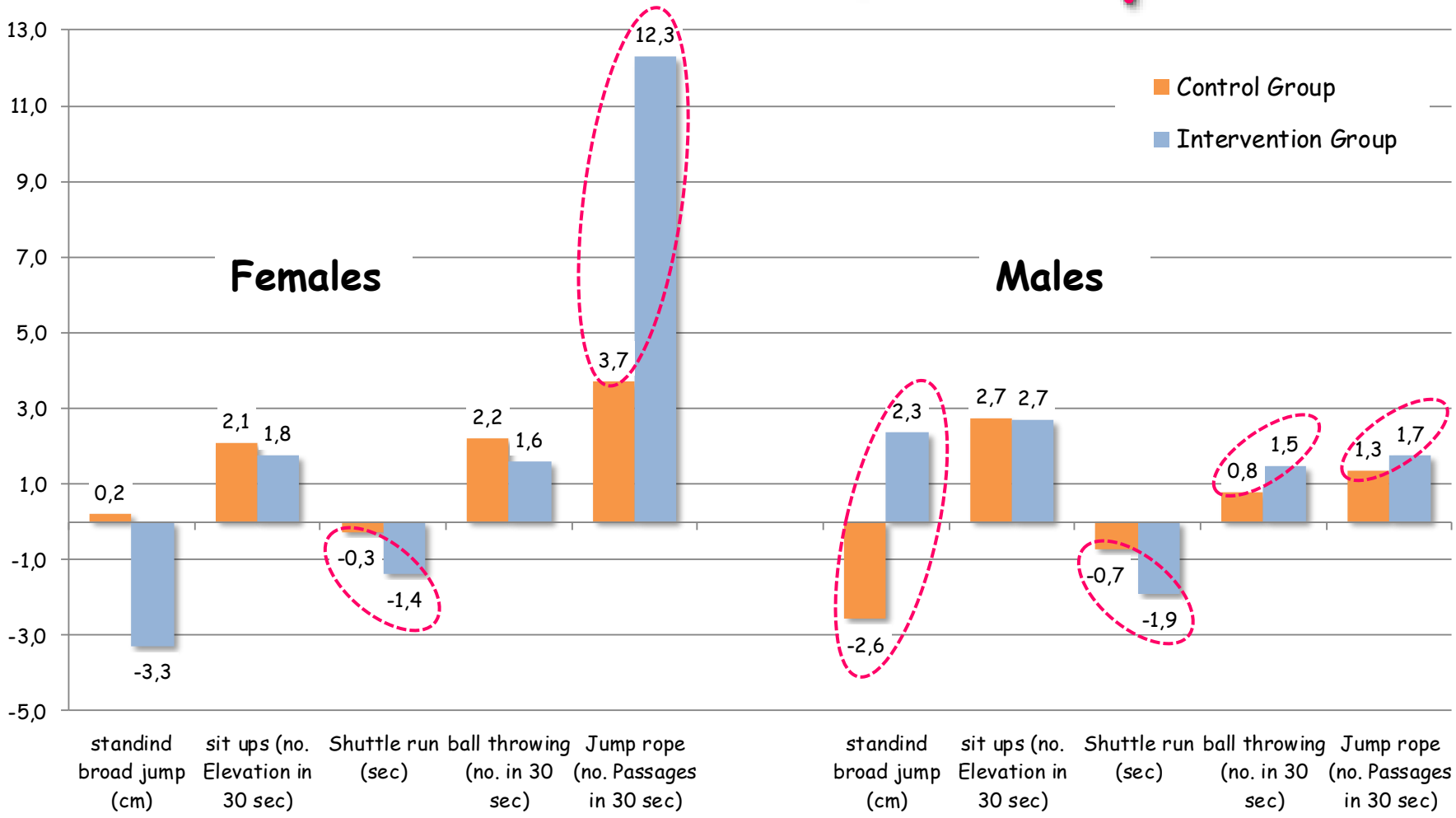


Il *playground* resulted as possibility for children not involved in extra-school PA and Sport

Difference between baseline and 1°follow-up



Difference between baseline and 1°follow-up



Evaluation

- The main outcome we obtained was a significant increase in proportion of children that reached recommended daily PA levels.
- There was also a significant improvement in some motor skills.
- Moreover, teachers referred a positive impact on behaviours, social skills and attention in the classroom lessons

Conclusions

- The intervention resulted effective and equitable, it appeared sustainable in the time and about the costs.
- Furthermore, it is reproducible in other settings (such as in the municipalities areas), so could produce an enhancement of community action in promoting opportunities for children to be active in their daily life.