SAFE FALLS, SAFE SCHOOLS

Teaching children how to fall during PE lessons
Results of an experimental application

Dr. Óscar del Castillo Andrés¹, Dra. María del Carmen Campos Mesa¹, María Teresa Toronjo Urquiza², Dr. Luis Toronjo Hornillo³, Dr. Luis Toronjo Urquiza⁴

¹ Lecturer, University of Sevilla. ² EJU, Education Scientific Commission. ³ Guest lecturer, University of Sevilla. ⁴ University of Sheffield.
• Falls are a real global public health problem

• The WHO considers that children in school age are a population at risk
Background

"Preventive strategies should emphasize on education, training, creating safer environments and should prioritize research related to falls and establishing effective policies to reduce risks"

(WHO report, January 2018)
Modelo seguido

1. Identify the risk
2. Study relevant associated factors
3. Development of the program (which worked)
4. Expand the implementation of the working strategies
Code of good scientific practice of the Ethics Committee of the CSIC

Code of Ethics for the US teaching and research staff

ETHICAL APPROVAL

- Research program
- Confidentiality agreement
- Participant information sheet
- Informed consent
- Research protocol

USE AND PROTECTION OF PERSONAL DATA

Ley 14/2007. Ley Orgánica 3/2018
Procedure and design of the CSES© program

Context

Tools

Mechanical analysis

Teaching levels
# CEIP Jacarandá

Seville, Spain

<table>
<thead>
<tr>
<th>Primary Education GROUP A</th>
<th>Primary Education GROUP B</th>
<th>Primary Education GROUP C</th>
<th>STUDENTS PER YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1º, 25 students</td>
<td>1º, 26 students</td>
<td>1º, 25 students</td>
<td>76 students</td>
</tr>
<tr>
<td>Boys 16 / Girls 09</td>
<td>Boys 13 / Girls 13</td>
<td>Boys 13 / Girls 12</td>
<td>Boys 42 / Girls 34</td>
</tr>
<tr>
<td>2º, 26 students</td>
<td>2º, 26 students</td>
<td>2º, 26 students</td>
<td>78 students</td>
</tr>
<tr>
<td>3º, 26 students</td>
<td>3º, 25 students</td>
<td>3º, 25 students</td>
<td>76 students</td>
</tr>
<tr>
<td>4º, 26 students</td>
<td>4º, 27 students</td>
<td>4º, 24 students</td>
<td>77 students</td>
</tr>
<tr>
<td>5º, 25 students</td>
<td>5º, 25 students</td>
<td>5º, 25 students</td>
<td>75 students</td>
</tr>
<tr>
<td>Boys 14 / Girls 11</td>
<td>Boys 12 / Girls 13</td>
<td>Boys 15 / Girls 10</td>
<td>Boys 41 / Girls 34</td>
</tr>
<tr>
<td>6º, 26 students</td>
<td>6º, 25 students</td>
<td>6º, 26 students</td>
<td>77 students</td>
</tr>
</tbody>
</table>

**TOTAL NUMBER OF STUDENTS, BOYS AND GIRLS**

459 students

Boys 223 / Girls 236

**Safe Fall, Safe School®**

- **48,60%**
- **51,40%**
IMPLEMENTATION ANALYSIS

✓ Presentation and to the Management Team – request for approval
✓ Meetings with
  • Director of Studies and Director of the PE Section
  • Teachers
  • Parents’ association
✓ Informed consent
  • To project participation and to the use of images
✓ Development of the schedules for different levels and groups
✓ Direct work in classroom sessions
✓ Remote support to teachers
✓ Reporting of results to the Centre and the parents’ association
Duration
6 weeks

Intervention
Pre-test
Classroom session (1 hour)
10 PE classes x 10 minutes
Post-test

Control
Pre-test
Classroom session (1 hour)
10 PE classes x 10 minutes
Post-test
Classroom session (1 hour)
10 PE classes x 10 minutes
Post-test II

Injuries or accidents < 1
<table>
<thead>
<tr>
<th>Kappa index</th>
<th>Valor de k</th>
<th>Consistency of agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neck variable</td>
<td>0.95</td>
<td>Poor</td>
</tr>
<tr>
<td>Hands variable</td>
<td>0.99</td>
<td>Low</td>
</tr>
<tr>
<td>Trunk variable</td>
<td>0.93</td>
<td>Moderate</td>
</tr>
<tr>
<td>Hips variable</td>
<td>0.87</td>
<td>Good</td>
</tr>
<tr>
<td>Knees variable</td>
<td>0.88</td>
<td>Very good</td>
</tr>
</tbody>
</table>
Comparison of variables regarding the response to an unexpected backward fall

These results are consistent with the frequency of the most common injuries that occur to the head, and upper limbs *

CONCLUSIONS

• It is possible to develop a program based on the learning of falling techniques to be implemented in school Physical Education sessions.

• It could educate motor responses in minors, appropriate to increase safety and protection against a fall backwards.
Limitations

• It is necessary to verify the transfer of acquired motor responses to contexts other than those used in the research.
• Increase sample size and age range.
• The lack of references on the teaching of falls in target populations limits the discussion of the results of the CSES© program, with respect to other interventions.
Final thoughts

• The CSES© is oriented to offer a response to the WHO's proposals regarding research and implementation of educational programs related to falls, for children in school age (a risk population).

• This program offers an innovative tool to complement existing programs, which meet the limit of "preventive intervention" to address the problem caused by falls in the target population.
Prospects

- Expand the CSES© program by including fall exercises in other directions.
- To study the effect of the CSES© program in different sports activities.
- To carry out longitudinal studies that determine the persistence of the learned gestures.
- To determine the rate of injuries and severity, produced by falls in the participants.
- To analyze the transference in a different situation to the context of the program.
Thank you for your attention

For further information, you can get in touch with us through

hola@judoks.com

María Teresa Toronjo Urquiza

Dr. Óscar del Castillo Andrés, Dra. María del Carmen Campos Mesa,
Dr. Luis Toronjo Hornillo, Dr. Luis Toronjo Urquiza