

Prevention of Injuries Through The Teaching of Judo-Based Falls

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Abstract: *The consequences of unintentional falls are the second leading cause of death from unintentional injuries worldwide, with a higher incidence in children and older adults. Judo, through the teaching of ukemi, can help eliminate or reduce the severity of injuries caused by such falls in these populations. This article presents two programmes based on judo that are aimed at tackling fall-related injuries: Safe Falls-Safe Schools© and Adapted Utilitarian Judo. The implementation of these programmes has produced significant results for the variables analysed, which indicates that both programmes are useful tools to reduce the risk of injury caused by unintentional falls.*

Key words: *Ukemi, judo, childhood injuries, public health, health promotion, older-adult, falls*

Originally, judo was not conceived by Jigoro Kano as a competitive sport, but as an educational instrument with a high content of values, which should serve as a tool for the integral formation of people. Judo should then contribute, through its practice, to the improvement and benefit of society. For the true benefit of oneself one must also take into consideration the benefit of society. One's greatest prosperity can be achieved through service to humanity" (Kano, in Maekawa and Hasegawa, 1963). Master Jigoro Kano distinguished between "kyogi" or judo in the limited sense, such as that practiced with the sole purpose of physical improvement and better combat technique, and "kogi" which responds to judo in the broad sense, focused on the integral education of people and thus on improving society.

At present, the European Judo Union (EJU) has the following phrase next to its logo, 'Judo - more than sport.' These words are not the slogan of a mere advertising campaign, but they are loaded with meaning that recalls the principles present in the historical roots of judo.



Taking into account this perspective of humanistic vocation present in judo, a collaboration agreement was established between the EJU and the research group 'Physical Education, Health and Sport' of the University of Seville (Spain), with the aim of promoting other social aspects that are linked to the foundation values of judo, such as social judo for the improvement and protection of health, agreeing on the creation and development of the Safe Fall Programme.

The project aims to provide useful judo-based responses to public health problems posed by falls (World Health Organisation, 2018). The consequences associated with falls have become a threat at a global level, with the World Health Organisation (WHO) pointing to school children and the elderly as the main populations at risk. The WHO warns in its fact sheet 344 (2018) that falls have become the second leading cause of death as a result of accidental or unintentional injuries and proposes to establish effective, comprehensive and multi-faceted prevention programmes that are consistent with the creation of safer environments and that eliminate factors that make falls possible. Thus, effective fall prevention programmes should aim to reduce the number of people who fall, decrease the frequency of falls and reduce the severity of fall injuries (WHO, 2018), which could be achieved by teaching people how to fall in a safe way.

Programme Overview

As a response to the approach proposed by the WHO, a research project has been carried out that resulted in the presentation of the Doctoral Thesis: Design, Implementation and Evaluation of Two Proactive Judo-Based Programmes for Teaching Falls in Risk Populations, defended by Luis Toronjo and co-directed by Oscar Del Castillo (2019). It develops the contents and methodologies of two programmes, one aimed at the population of children of school age (Safe Falls-Safe Schools©, CSES©) and the other aimed at older adults. These programmes have the approval and endorse-

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ment of the Portal of Ethics of Biomedical Research of Andalusia (Spain), have been granted several international awards and have research contracts 68/83 with the company Ceroone Technology (2016) and the Andalusian Federation of Judo and Associated Sports (2017).

They are developed by Doctors Del Castillo and Toronjo, from the 'Physical Education, Health and Sport' research group of the University of Seville, who have published thirteen articles on the subject, in high-impact scientific journals, in collaboration with other researchers. Examples of the latest research published in Q1, with high impact rates and scientific relevance are:

- Effects of Fall Training Program on Automatization of Safe Motor Responses During Backwards Falls in School-Age Children. *International Journal of Environmental Research and Public Health* (Switzerland), doi:10.3390/ijerph16214078, with a JCR impact index of 2.468. November 2019.
- Decreasing the Fear of Falling in Older Adults. The use of Adapted Utilitarian Judo. Chapter in the book *Sport Coaching Whith Diverse Population: Theory And Practice*. Edited by Routledge (London, UK), to be printed in February 2020.

The results have been presented at 18 international congresses including the EU Safety Congress 2019 (Belgium, Luxembourg), the World Conference on Injury Prevention and Safety Promotion 2018 (Bangkok, Thailand), the 16th Hungarian Sports Science Congress (MSTT, Nyíregyháza, Hungary), International Society for Behavioral Nutrition and Physical Activity (ISBNPA, Prague, Czech Republic), III National Congress and IV International Congress on Quality of Life and Healthy Lifestyles (Chillán, Chile), VII Conference on Ethnography and Qualitative Research (Bergamo, Italy), and the VI International Congress on Education Sciences and Development (Setúbal, Portugal). In addition, the promising results have given the researchers the opportunity to have a meeting at the WHO Office for Europe in Copenhagen (2018), with the director of the injury prevention programmes.

The involvement of the EJU has enabled the international expansion of the research, by organising the 1st International Conference on Training and Research CSES© in Cadiz (Spain, 2018), with the collaboration of the Andalusian Judo Federation and DA. The Seminar was attended by technicians and researchers from 10 European countries: Germany, Denmark, Hungary, Italy, Czech Republic, Russia, Serbia, Sweden, Switzerland and Spain.

For the implementation and research of the CSES© programme, scientific criteria are followed based on an experimental methodology, with a protocol based on the collection, analysis and interpretation of evidence, with intervention and control groups. The international coordination is carried out by the research group of the University of Seville (Spain), with the participation of the University of Studies of Milan (Italy), the University of Pécs (Hungary), and the Southern University of Denmark (Denmark). The research has been carried out on a population of 22,800 schoolchildren, with a

research sample of more than 3,000 children. In all cases, collaboration agreements have been signed between the EJU, the Universities and the national judo federations and in all countries the approval of the corresponding national ethics committees have been obtained.

Currently, the data obtained in the implementations carried out by the research teams of Italy (Invernizzi), Hungary (Morvay), Denmark (Henning) and Spain (DelCastillo and Toronjo), are being correlated to present the results and conclusions of the international research.

In safe falls programmes, the teaching methodology and content have been adapted specifically to each of the target populations. The characteristics of each age group have been taken into account in order to offer a useful response, through the creation and implementation of proposals aimed at the prevention and improvement of health and safety in children and older adults.

The programme aimed at children is implemented in schools within physical education classes, with the ultimate goal of helping to reduce the consequences of accidental falls, in which mortality may be the most important result, but not the only one, since there are a high number of cases in which injuries, psychological problems and sequelae with varied significance and types of disability occur.

For the older adult population, judo for health is valued as a tool to promote an active aging of the older population, through a programme designed within the framework of innovation, longevity and quality of life, which uses the adaptation of the technical elements present in traditional judo, adapting them to the needs and characteristics of older adults. Another aim of this programme is to contribute to the reduction of risk factors associated with falls.



The results are significant and very encouraging in both cases, having proven that the implementation of the CSES© program in children significantly reduces the risk of injury in all children, regardless of variables such as BMI, gender, academic year and level of sports practice. In the implementation of the programme of safe falls in older adults, there have been improvements in fundamental variables of the prevention of falls, the most relevant ones being: the re-

duction of the Fear of Falling (FOF), the improvement of all the items analysed by the Falls Efficacy Scale-International (FES-I), both in its social and domestic dimensions.

Conclusion

These programmes contribute to improve the image of judo, positioning it within the space of social responsibility, as a sport activity that contributes to the protection and prevention of the physical integrity of children and to the active aging and improvement of the quality of life and health of the older adult population. Judo, through the use of an adapted and utilitarian methodology of *ukemi*, can be a holistic activity, aimed at preventing falls and reducing the risk of injury, adding a unique and innovative element in the strategy of treating falls in at-risk populations. Therefore, it is an ambitious project that requires thoughtfulness and social commitment from all the parties involved in the practice and diffusion of judo, as its primary objective is to increase protection for vulnerable groups in society, contributing to the maintenance and improvement of their safety, health and quality of life.

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