

Findings:

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The IKONS study in the context of Erasmus + scientific research was conducted under the direction of the University Foro Italico of Rome (Italy)

The University of Rome "Foro Italico" (FORO ITALICO) The State University of Rome "Foro Italico" is the only Italian and one of the few European vocational universities entirely devoted to sport and exercise science. It was created in 1998 from the upgrading of the previous Higher State Institute of Physical Education and as the direct heir of the National Academy of Physical Education established in the late 1920s in the especially developed and world famous monumental sport complex of "Foro Italico".

The title of the study was : Inclusive Karate : a new perspective to reduce the sedentary lifestyle of persons with Down syndrome and to increase their self-value. With the aim: to promote and improve the social inclusion of persons with Down syndrome by practicing karate through a new method, to improve the basic physical conditions (motor skills, coordination and cognition), to train karate coaches in the new method so that they can participate in the study in a scientifically sound way and to organize karate competitions with the aim of, among other things, inform the public about the value of motor exercise in maintaining a good health status, i.e. the benefits of exercise for individuals with Down. In a first part of the study, the study groups were put together (Italy, Belgium, Hungary, Romania, Austria) and a survey was conducted on the basic characteristics of the participants (age (15-40 years), gender (M=V), basic motor skills (e.g. via the TGMD-3 test), ADL status,...) Unfortunately, the Covid-19 pandemic in 2019-2020-2021 also had a significant (negative) impact on the study with a longitudinal design of 43 weeks. Some groups had to deviate from the basic protocol. We started with 89 individual questionnaires and 83 questionnaires completed by sports facilities. In the end, 57 athletes completed the entire study project in accordance with the protocol.

The profile and level of movement of this study group of individuals with Down corresponded well with the characteristics reported in the literature, I refer to figures published in the Dutch guidelines for people with Down as in chapter 16: Exercise and Sport of the book "revalidation for kids" (published by Van Gorcum). The results of the individuals who completed the entire study are clear: there was a significant improvement in motor skills as measured with the Gross Motor Development Skills, at 0.05 level. (3 locomotor skills and 4 object control skills) and confirmed by 2 of the parents of the participants in terms of interest in moving.

Better movement so better "general daily life" level.

In conclusion, it can be said that moving and sport are an essential contributor to the health status, including the cognitive and social well-being of individuals with Down syndrome.

Karate, learned and trained through the IKF I-karate GLOBAL method (Eric Bortels), is ideally suited for this.

by Eric Bortels

Founder I-Karate Global / ICP-Move

The Erasmus + sport project IKONS

» Improving the sedentary lifestyle for people with DS," was a very big but also interesting challenge for me.«

It was already clear to me that my students with any disabilities improved physically and cognitively through my methodology 'which I have been applying starting in 2006, but never before had there been a strong line of evidence. In consultation with the university, sports department, of Rome and supported by an Erasmus program of the European Union, my method could get more substantiation.

The countries Italy, Hungary, Romania and Austria, together with Belgium, started a following my written manual. For me it was important that the coaches learned to convey karate in a simple, understandable and constructive way to the students, supported by colors and icons.

Every week 2 trainings were given by 2 trained coaches from these 5 countries and this for 40 weeks. Every 2nd training of the week was a refresher lesson.

The end goal was to have the students with DS perform a complete kata and a kumite form, possibly with fewer tools than in my basic methodology.

Coordination, balance, reaction, speed, breathing and of course use of a comprehensible language from the coach were the key to success. This method only stand in combination with the coach.

We can say that there was a clearly measurable progression on a physical level. On the 13 "gross motor development" physical tests there was improvement everywhere. On 7 tests there was a huge improvement. There was also a cognitive improvement, because in the training program intermediate exercises were done before performing the actual exercise. In this project, less emphasis was placed on this, but it can be deduced from the testimonies of the coaches and the parents. The training started in September 2019 and ended in June 2020.

In the middle of the 40 weeks of training (February-March), COVID hit. We then had to switch quickly with the entire team because there was no longer physical training possible together.

The idea came to teach everyone in each country 1x a week online and we planned to give a 2nd lesson international, each time by a different coach from one of the 5 countries. This went well at first but not everyone could connect. Romania and Hungary, in particular, did not have these means to participate. For example, the percentage of participants quickly went down, in Belgium by 30% but for example in Romania even with 80%.

In Belgium we gave our students an extra possibility: I made training videos that can still be viewed on our YouTube channel 'I-Karate Global'. And as it turned out, after questioning our Belgian participants, this was very popular in this Covid period and... they practiced even more, even now as we speak. For example, some of our participants trained up to 7 times a week now.

Apparently it was fun to train at home and repeatedly watch the movies, this with the IKONS mat in front of the Television screen. After the weakening of COVID, we were allowed to organize outdoor training again and we noticed a huge improvement with the DS students who had trained at home!

Normally the training sessions stopped in June but due to the postponement due to COVID we continued training until August 2020 and we were able to bring the 40-week program to a successful end. Nevertheless, we have put down clear evidence, although the dropout (mainly due to COVID) greatly reduced the average number of participants. But... according to Dutch sports studies, it appears that if you have still 37 participants out of 66 after one year of training. This percentage is high for solid evidence. We can now conclude with certainty from this study by the European Union that this method brings an improvement on a physical level in persons with DS. I

want to finish with: That I am very happy that I took that 3 years challenge together with this great team of 5 countries.

We all have made a huge contribution to the karate in its evolution.

Thank you all. Eric Bortels

Now it is more interesting and intriguing to listen to the conclusions of some parents

So I am happy to share this 2 statements.

of a parent from a child involved in the project

Father of Kris (speaking on behalf of the father)

I have been asked to share our experience after a year of Erasmus Project karate.

Kris' swimming coach has put us in touch with this project.

At first we were absolutely not convinced to participate in this project. Karate? We have already done so much for Kris his development, and a lot was a failure, what can he still learn was my question, Kris was 39 years old then?

A conversation with Eric brought clarity. The goal of the project was not only sports and exercise. The development of the whole personality was the ultimate goal. Both intellectual, social, and emotional skills could improve. We did not want to let this pass us by. We decided to participate in this project. Driving to the trainingplace 2 times a week was the assignment.

After a few weeks of training we saw no noticeable improvement. We did notice that Kris always was ready on time for every training and was happy that he could go to the karategroup. This was all ready the motivation for us to persevere.

But eventually it didn't stop there.

The first improvement we saw with Kris after months of training was his balance. Standing on one leg had never been possible, not even after all the exercises we had done with Kris by ourselves. Now Kris can stand on his left or right leg without any help. (Chris demonstrates) Congratulations Kris.

A second improvement was concentration. In the beginning, during class, you saw his attention decrease after 15 minutes. The switch to digital classes was initially a test of concentration. Now Kris can perform and focus on the exercises correctly during the entire karate session of 50 minutes.

A third improvement : Due to the system of the red and blue straps on the wrist, kris has improved his feeling for right and left. Applying red and blue straps to his bicycle has made cycling with the family simplified and safer. It is now clear for Kris witch side to turn.

Also the social enviroment, practicing in group, feels very nice for Kris. The group dynamics give him energy to persevere.

In summary, as a parent, I can say that we are happy that we accepted the invitation to participate in this Erasmus Project IKONS. The most important thing is that Kris has taken another step forward in his development. Thanks to the trainers and all the staff.

Participants give yourselves a tremendous applause.

of a parent from a child involved in the project

Mother of Niels (speaking on behalf of the mother)

Niels and karate Niels,

Niels then 17, is a boy with not only Down syndrome, but also with a half-sided paralysis (hemiplegia) after a stroke at the age of 7 years. Niels did not do many sports, had been given physiotherapy 2 to 3 times a week for years.

I let him participate in the Erasmus project in the hope that he might do some more sports.

He himself was only moderately enthusiastic. After the first training, the enthusiasm was already a bit bigger with him, I thought he would never be able to practice this sport, that it would be too difficult for him with his disability. But his enthusiasm grew week after week, and I too began to see changes in the movement of his left arm. Sticking his arm in the air and stretching was otherwise very difficult and only with the help of the physiotherapist.

After a few weeks of karate training, we suddenly saw that this went much smoother and that he also spontaneously started to do so during other activities. The physiotherapist was also impressed. Slowly on, we saw more and more positive changes such as his serious improvement of the balance. Than before he started the training, he could hardly maintain a balancing act with the physiotherapist for 5 counts, after a few months of karate he could already keep the same exercise for 60 counts. A physiotherapist, who had not seen him for a while and did not know that he was doing karate, was very surprised.

The only thing that had changed were the karate training that Niels followed. After this we saw small improvements in his movements again and again, his motivation to practice also got bigger and bigger. It was also very good to see that he really made an effort to stretch his arm while practicing. He also started practicing movements spontaneously, more and more and asked regularly to set up training videos so that he could train more.

After the holidays, and therefore no training sessions, we clearly saw that it took much more effort to stretch his arm. After the completion of the project, Niels' motivation was so big that he now continues to practice this sport.

Since this year he has started training even more often, on the one hand because he likes it very much, on the other hand because the physiotherapist advised this because this is clearly an added value for his motor skills and his self-confidence. For us, this Erasmus project was a great success, both in terms of sports, motor development skills and social level.

Thank you.

