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Original Research Paper

Method as an adjunct kinesiotape in patients with Down syndrome toning

Physiotherapy

KEYWORDS: children, down´s syndrome, kinesiotaping, Mexico

Nallely Hernández Oyosa	Student Of Physiotherapy. Universidad del Valle de Mexico, Campus Villahermosa
Karen Stephanie Avalos García	Student Of Physiotherapy. Universidad del Valle de Mexico, Campus Villahermosa
Edgar García Rojas	Master of Science In Public Health. Full time research academic. Universidad del Valle de Mexico, Campus Villahermosa

ABSTRACT

Introduction. The kinesiotaping method has been used for muscle disorders and muscle tone in a quick and effective way to recover. Objective. To determine the improvement of muscle tone in Down Syndrome patients using the kinesiotape method at the Tabasco Special Education and Rehabilitation Center. Material and methods. A quasi-experimental, analytical, cross-sectional and prospective study in infants with Down's syndrome in Tabasco, Mexico, during 16 sessions, measured with Campbell's scale accepting a significant relation of p≤0.05. Nine men (56%) and seven women (44%) women were evaluated; According to the scale a final result of -. 75 ±. 775, finding improvement with the use of the technique (p = 0.002). Conclusion. Improvement was observed in the kinesiotaping method for adequate muscle tone.

Introduction

Down syndrome data as a genetic condition described in humanity, related to the change in gain of a chromosome, where it can detail the trisomy 21, translocation and mosaicism It is some that psychomotor development is formed by a series of learning that the child acquires through movement; However in children with Down syndrome this is characterized by a delay in the acquisition of motor skills, gross motor skills and fine motor. (Moreno , 2012)

Both genetic and environmental factors that will vary in each child involved in psychomotor development, hypotonia that they maintain a more passive attitude to the movement. Where the role of the physical therapist is to help control it, skill in their movements. (Buzunariz Martinez & Martinez Garcia, 2008)

Without a doubt the infantile stage must be preserved during the process, where the mind must retain the natural without being disturbed by external devices used in therapies. It is like kinesiotaping, besides being a technique that helps in the rehabilitation, offers a range of possibility; This was devised in 1970 by Dr. Kenso Kase, Japanese chiropractor which can be used in various areas such as shoulder, elbow, dorsum-lumbar, neck, foot and knee, (Muñoz Lopez , Ruiz Sanz , & Martínez Delgado, 2016) where 10 30 to 60 minute sessions have shown improvement of tolerance to pain.(Nemitalla Added , Pena Costa L O, & Yukio Fukuda , 2013)

(Thelen , Dauber, & Stoneaman , 2008) refers to the use of kinesiotape helps improving range of motion of shoulder for 30 days use. (Aguilera Eguía RA, 2014).

(Alves de Oliveira, Paixá Batista, Rodarti Pitangui, & Araujo Cappato, 2013)in athletes amateurs of Petrolina with ages of 22.00 ± 3,87 years treated with kinesiotaping showed decrease of the pain during the activities daily (p = 0.001) and pain at rest (p = 0.03).

By which the objective of this study was to determine the improvement of muscle tone in patients with Down Syndrome by using the method of kinesiotape in the Centre of rehabilitation and special education in Tabasco

MATERIALS AND METHODS

A quasi-experimental, analytical study, transversal and prospective in infants with Down syndrome in the Centre of rehabilitation and special education in Tabasco

Universe sample and sampling

The universe and sample was non-probability, selected by sampling by convenience

Data collection plan

Used an instrument of data collection which I had 20 items, being implemented by interns for the degree course in physiotherapy in the areas of rehabilitation and special education center. Scale Campbell, which is classified in values of "zero" as normal muscle tone, was used for the estimation of muscle tone "minus one" slight hypotonia, "but two" moderate hypotonia and less "three" as severe hypotonia ""

(Gomez Soriano J, 2012) (Artioli D P, 2014)

Used different techniques of application of neuromuscular bandage patients with Down's syndrome with different types of courts depending on the area to be treated: I cut, cut in and cut in X; the use of scissors was used to appropriate cuts and to have better grip and durability the bandage in the patient's skin.

Statistical analysis plan. The analysis of the data was conducted in Microsoft Excel® and SPSS programs version 23®. Data are presented on average ± standard deviation where required it, used the test of Pearson Chi-square, accepting a p≤0. 05.

Ethical considerations.

This research has aimed to determine the improvement of muscle tone in infants with down through the kinesiotaping method syndrome, for which according to the General health law in the last reform posted 01-06-2016 DOF, the title "Health research" fifth chapter only, article 96 and Article. (Secretary of health. Law General health DOF 01-06-2016. Available at, 2016)

This procedure does not affect the user in the biological, physical, mental, or labor; does not jeopardize your integrity or your life, the information gathered was used only for academic purposes, submitted to the Committee on Bioethics and research of the University of the Valle of Mexico, Campus Villahermosa.

RESULTS

This figure 1 details the relationship of infants by gender where nine (56%) were male and seven (44%) female. This sample was treated during 16 sessions with the kinesiotaping method. Figure 1.

In relation to the care of infant's age they ranged 195 up to 720 months old on average of 388.43 ± 177.50 monthsof age.

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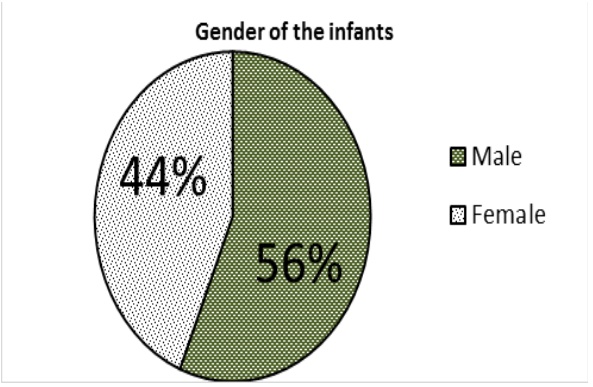


Figure 1. Gender of infants with Down síndrome
Source: Own elaboration

According to the start of the treatment with kinesiotaping is were four infants with hypotonia moderate and 12 with hypotonia mild, in scale of Campbell with average of -1. 25±. 447; back to the 16 sessions of treatment three cases with moderate hypotonia, mild hypotonia six and seven with normal muscle tone, with average values of-. 75±. 775, denoting relationship of improvement in muscle tone using kinesiotape (p = 0.002). Table 1.

Table 1. Comparison of muscle tone results using Campbell scale

Treatment	n	Half ±SD	p*
Start	16	-1.25±.447	0.002
End	16	-.75±.775	

* Student t test
Source: Own elaboration

In table 2 is denoted the final improvement by gender, where four male managed a muscle tone to "normal" and female three according to the scale of Campbell, without giving details is statistically significant relationship by gender (p = 0.635)

Table 2. Muscle tone per gender with kinesiotaping

Muscular tone	Gender		
	Male	Female	p*
Normal	4	3	0.635
Mild hypotonia	4	2	
Moderate hypotonia	1	2	

*Pearson Chi Square Test
Source: Own elaboration

DISCUSSION

Lopez et to the. (2012), in the city of Zaragoza in Spain use the kinesiotaping method in a sample of 10 infants with ages of 9.8 ± 2.04 years in track's seven months, in order to verify the efficacy of the control of the swallowing of saliva in these who were affected by disorders neuromotor, who at the beginning of the study on average had a frequency of drooling from seven episodes to the end with five events, and the change from bib ending in four changes of clothes for the event.

However the use of the technique has had little boom and award such as improvement of the muscular tone in various pathologies as anterior pain of the knee during the ascent or descent; It is evident that the degree of response is liable according to each individual where this can vary significantly with a large bias in information.

In the city of Chihuahua in Mexico, I used the method in a sample of 24 children aged 10 to 18 years for one month, applied 3 times a week, in lower limbs to improve the physical capacity, functionality, posture of children with moderate and mild cerebral palsy. In the 6-minute walk test in the control group, a statistically significant difference (p = 0.005) was found between initial and final measurements. The experimental group in the 6-minute test at the initial and final values showed differences between both measurements with a p = 0.020. The application of the kinesiotaping technique as part of the treatment of children with CP is an important and effective alternative.

CONCLUSION

In relation to the technique of method kinesiotaping has been controversial the use of this technique in the clinical area, where his home was implemented in sports; However, it has offered a range of possibilities to be used in this environment.

Where post-16 sessions in the sample of 15 infants aged on average of 388.43 ± 177.50 months, improvement of the muscular tone according to the scale of Campbell was observed (p = 0.002)

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