



Artículo de investigación

The effect of internal and external focal point guidelines on the static equilibrium of male children with autism

El efecto de las pautas de los puntos focales internos y externos sobre el equilibrio estático de los niños varones con autismo

O efeito de diretrizes de pontos focais internos e externos no equilíbrio estático de crianças do sexo masculino com autismo

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Abstract

Postural control plays an important role in daily activities and independence movement. In recent years, attention has been paid to the conscientious aspects of postural control such as attention and cognitive processes for optimal performance. The purpose of this study was to determine the effect of internal and external focus on the static equilibrium of children with autism spectrum disorder.

The method of this research is semi-experimental and the statistical society of this study was composed of 153 students of all the students of Autism school in the two schools of Ahvaz, which were studying in the region (2014-2015). Among them, 23 knowledge the students were selected as a sample using an accessible and targeted method. The task involves maintaining a balance on the force plate in four normal stand states, standing with the focus of the inner focus, outer (near) outer (distant). Overall control, median-lateral and anterior-posterior stamina control indexes and velocity of displacement of the center of pressure were recorded for all subjects.

The findings showed that the subjects had better balance in external circumference

Resumen

El control postural juega un papel importante en las actividades diarias y el movimiento de independencia. En los últimos años, se ha prestado atención a los aspectos concienzudos del control postural, como la atención y los procesos cognitivos para un rendimiento óptimo. El propósito de este estudio fue determinar el efecto del enfoque interno y externo en el equilibrio estático de niños con trastorno del espectro autista.

El método de esta investigación es semi-experimental y la sociedad estadística de este estudio estaba compuesta por 153 estudiantes de todos los estudiantes de la escuela de autismo en las dos escuelas de Ahvaz, que estaban estudiando en la región (2014-2015). Entre ellos, 23 conocimiento, los estudiantes fueron seleccionados como muestra usando un método accesible y específico. La tarea implica mantener un equilibrio en la placa de fuerza en cuatro estados de soporte normales, de pie con el foco del foco interno, exterior (cerca) exterior (distante). El control general, los índices de control de la resistencia mediano-lateral y antero-posterior y la velocidad de desplazamiento del centro de presión se registraron para todos los sujetos.

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conditions compared with the near external attention conditions, internal focus and baseline conditions. The results of analysis of variance in the anterior posterior displacement of the center of the pressure showed that there is a significant difference between the base conditions with the circumferential outer circumference conditions ($p = 0.001$) and the near external attention conditions ($p = 0.02$); also, there is a significant difference between the center- The velocity of displacement of the center of pressure during the four conditions was significant.

According to the results of this study, it seems that the children with autism disorders have a better balance than the other conditions under the external attention guidelines.

Keywords: Autism, Static Balance, Focus attention

Los hallazgos mostraron que los sujetos tenían un mejor equilibrio en las condiciones de la circunferencia externa en comparación con las condiciones de atención casi externas, el foco interno y las condiciones iniciales. Los resultados del análisis de varianza en el desplazamiento anterior anterior del centro de la presión mostraron que existe una diferencia significativa entre las condiciones de base con las condiciones circunferenciales de la circunferencia externa ($p = 0.001$) y las condiciones de atención casi externa ($p = 0.02$); también, hay una diferencia significativa entre el centro- La velocidad de desplazamiento del centro de presión durante las cuatro condiciones fue significativa.

De acuerdo con los resultados de este estudio, parece que los niños con trastornos del autismo tienen un mejor equilibrio que las otras condiciones bajo las pautas de atención externa.

Palabras clave: autismo, equilibrio estático, centrar la atención.

Resumo

O controle postural desempenha um papel importante nas atividades diárias e no movimento de independência. Nos últimos anos, tem sido dada atenção aos aspectos conscienciosos do controle postural, como atenção e processos cognitivos, para um ótimo desempenho. O objetivo deste estudo foi determinar o efeito do foco interno e externo no equilíbrio estático de crianças com transtorno do espectro do autismo.

O método desta pesquisa é semi-experimental e a sociedade estatística deste estudo foi composta por 153 estudantes de todos os alunos da escola de autismo nas duas escolas de Ahvaz, que estudavam na região (2014-2015). Entre eles, 23 conhecimentos os alunos foram selecionados como amostra por meio de um método acessível e direcionado. A tarefa envolve a manutenção de um equilíbrio na plataforma de força em quatro estados normais de suporte, permanecendo com o foco do foco interno, externo (próximo) externo (distante). Controle geral, índices de controle de mediana ântero-lateral e ântero-posterior e velocidade de deslocamento do centro de pressão foram registrados para todos os indivíduos.

Os resultados mostraram que os sujeitos tiveram melhor equilíbrio nas condições de circunferência externa em comparação com as condições de atenção quase externas, foco interno e condições de base. Os resultados da análise de variância no deslocamento anterior anterior do centro da pressão mostraram que há uma diferença significativa entre as condições de base com as condições de circunferência externa circunferencial ($p = 0,001$) e as condições de atenção quase externa ($p = 0,02$); Além disso, há uma diferença significativa entre o centro - A velocidade de deslocamento do centro de pressão durante as quatro condições foi significativa.

De acordo com os resultados deste estudo, parece que as crianças com distúrbios do autismo têm um equilíbrio melhor do que as outras condições sob as diretrizes de atenção externa.

Palavras-chave: autismo, equilíbrio estático, atenção foco

Introduction

Autism spectrum disorder is a neurotrophic disorder characterized by severe deficiencies in

three important developmental areas: social interactions, communication, and the





occurrence of repeated and limited behaviors and behaviors (affective behaviors) in affected individuals. The children of autism have significant weaknesses and disadvantages in setting, organizing and integrating sensory and sensory data and sensory integration. The sensory integration process believes that the integration of sensory receptions is the origin and origin of all the skills and performance of an individual (Abidoglu et al., 2017). Any disorder and failure in this process can disrupt the person's skill and ability to adapt to the environment (Rafeie, 2008). The balance control system is a composite and complex mechanism that coordinates the three equilibrium systems, including the visual system, the atrial system, and the sensory system (Sadeghi et al., 2009). Equilibrium disorders, mainly in patients with MS and autism, are problematic because they make it difficult to move from one state to another and to keep things from standing or interfere with functions such as walking or rotation. All of this increases the likelihood of a disturbance of balance and falls (Arian et al., 2010).

Autistic children have a significant disadvantage in arranging, organizing, and integrating sensory information and data. The process of sensory integration believes that the integrity of sensory receptions is the source of all the skills and functions of the individual. Any abnormalities in this process can lead to impairment in the presentation of individual skills and the ability to adapt to the environment (Rafeie, 2008). Equilibrium, which is defined as the muscle's ability to maintain and maintain the body, is stable (Sadeghi et al, 2009) is considered as an important component in all motor activity and is one of the basic needs for daily activities. Balance in static and dynamic activities plays an important role. The balance control system is a composite and complex mechanism that coordinates three equilibrium systems, including the visual system, the atrium system and the sensory-system system (Sadeghi et al., 2009). Various studies have identified postural stability weakness in autistic children's children. For example: Architecture (2013) In a study comparing the pattern of postural fluctuations in children with autism spectrum disorder with normal-growth children, it was concluded that children with atherosclerosis exhibited higher instability in the anterior-lateral center. As a result, the postural control pattern seems to differ in the etiology of children compared to normal children, partly due to the clinical

features of the etiology spectrum disorder (Arian et al., 2010).

The ability to perform well, in addition to physiological factors, is also influenced by many other phenomena that pass through the central nervous system. One of these factors is the focus of attention (Hejazi et al., 2011). Researches in recent years have shown that the focus of attention has a significant effect on the implementation and learning of many motor skills such as equilibrium skills. In the meantime, the instructions that focus the attention of the performer on the effects of moving in the environment tend to improve the performance of instructions that take away the attention of the subject (Wulf et al., 2009).

Equilibrium disturbances are mostly problematic because they cause problems in moving from one state to another, and preventing the condition from standing or disrupting functions such as walking or turning, all of which, increase the likelihood of imbalance and increase the level of compliance (Wulf et al., 2001). Also, poor balance and frequent falls are causing fear of loss of life and ultimately affect the quality of life of the patient, which affects the patient's dependence on others to do daily work, reduce communication Social and reducing the sense of ability to control the patient's life (Kara, Yildirin, Kubilay, 2011). Also, in individuals with autism, maintaining muscle strength and muscular endurance, as well as dynamic balance, is crucial for achieving better life and functional autonomy. Children with autism have a lower level of muscular strength, endurance, agility, speed, time, and balance when compared to their normal children. Ability to maintain independent living is an important factor for the motor and exercise programs of people with autism, in accordance with the structural and psychological characteristics of humans, especially in childhood, while providing physical and mental health, is ready for a better life in the community. (Kara, Yildirin, Kubilay, 2011). Nevertheless, it can be argued that the need to evaluate the equilibrium ability of autistic individuals who have limitations in balance, strength, and so on, has led researchers to undertake studies in this regard. Take action.

The benefits of external focus in various age groups, including children, adolescents, as well as elderly, have been identified in most studies. Advantages of using external focus guidelines have been found not only for healthy adults, but

also for adults with motor injury, stroke, Parkinson's disease, and mentally handicapped children (Wulf, 2012); for example, In Wolf et al., A study done on Parkinson's patients, it has been shown that the focus of external attention focuses on the internal focus of attention, which can increase the balance of these patients. Focusing on the effects of movement, it increases the interference of automated processing and, as a result, facilitates the movement of movement, and, on the contrary, the focus on self-movement, leads to some kind of conscious control and, consequently, limitation of the motor system and impairment of automated control processes (Wulf et al., 2001).

Focused focus guidelines are to focus on individual attention; this orientation can be external or internal. The external attention instructions focus on individual's attention to the effects of moving around the environment and internal attention guidelines to the individual's attention to body movements. The focus on body movements (the adoption of an inner focus) has been identified by many researchers in exercising motor skills, while instructions that focus the performer's attention on the effects of his movements on the environment (the adoption of the outer center) lead to more effective implementation. Also another group of research has emphasized on the effect of greater distances of external attention (Akbari Yazdi, 2010). Since 1998, the focus on balance variables, as well as in sport and motor skills has been shown to be more effective in providing external attention instructions in the performance and learning of motor skills (McNevin et al., 2003).

This view, which may have been the focus of external focus and effective learning, has also been proven in numerous studies. For example, Shahreyari (2007) in a study compares the effects of two types of external focus on the performance and learning of the impact of a forehand Pay tennis. The results of this study showed that there is no significant difference between the effect of the type of instruction of the focus of attention prior to the effect and the effect of motion on the performance of the forehand tennis. But after one day, a significant difference was observed in the retention test between the two groups (Shahreyari Ahmadi, 2007). Also, Moghaddam (2008) compared the effect of task difficulty and the type of instruction of the focus point on the implementation of equilibrium task. The results indicated that the

focus of attention was external to the focus and control center (Moghaddam, 2008). Kubilay et al. (2010) in a study entitled Postural control of children with autism spectrum disorder in static and postural dynamics, concluded that children with autism disorder were 438% more likely to have a central and lateral oscillation and 104% more than posterior oscillations Anterior to normal children (Magel Richard quotes: Vaez Mousavi, 2008).

Also, over the past 15 years, research on the focus of attention has consistently shown that the focus of external attention (for example, the effects of movements in the environment), rather than a focal point (for example, body movements), increases learning and motor function (Wulf, 2012). Focusing on the body's movements of the body (the adoption of an inner focus) is considered to be futile when doing motor skills by many scholars, while instructions and feedback that focus on the effects of its movements on the environment (the adoption of an external focus) It leads to more effective implementation and learning. Another group of research has also emphasized the impact of more distances on external attention (McNevin et al., 2003).

The advantage of being in balance with the improvement of motor effects and quality of life in patients with autism has been accepted. Balanced problems and associated risks are a major issue for people with this disease. Although efforts to improve balance are addressed through different instructional guidelines and are important functions of instructional instruction to focus on individual attention, but how the external attention focus guidelines are effective on the static equilibrium of these patients. , Unknown. If it can be shown that the distance from the external attention center can improve the balance of these patients, this can be important in the design of physical therapy interventions. Therefore, the purpose of the present study is to investigate the differences in distance the focal point of external attention is the autistic children's static balance to determine whether attention to close signs is compared to those that are farther away.

A) Does the focus of attention always increase with distance, even in children with autism disorders?

B) Is there an optimum distance? And which focus can be helpful in performing motor tasks for children with autism disorder?





Therefore, the present study seeks to investigate the differences in attention deficit distances in patients with autism and to examine the differences in the context of the internal and external focus (distant and near) on the static

equilibrium so that it can be taken in this way to improve the performance. And exercise skills in these patients.

Methodology

This study is a semi-experimental study in which the effects of the focal, inner, and outer focus of attention on the learning of static equilibrium in autistic children have been investigated. The statistical population of the study consisted of all pupils of autism spectrum disorder students who formed the school of extraordinary education in the two district of Ahvaz, who were studying in the year (2014-2015) (N = 153). Out of four extra-curricular schools in Ahwaz, two schools of autism were selected by random multi-stage cluster sampling method, and out of a total of 23 students (ie, none the species did not have any previous experience in the assignment. They were selected in order to participate in this study in a targeted and targeted manner. It is worth noting that the parents of children completed the consent form of their children in this study before the beginning of the research.

In this research, the criteria for entering the study include: ability to stand for at least 5 minutes without help, lack of foot abnormalities, lack of experience in testing, use of balance, no genetic diseases, cardiovascular diseases, Neurological, organic, orthopedic, musculoskeletal, and others), multifocal, and also some known medical problems such as Atlanto-Axial Instability, retinal problems, growth hormone deficiency (ossification) and Brittle Bone Disease. In addition, in this study, to measure from:

1- Pulse-Forses- 8*40*50 machine-made by the Iranian scientist: In terms of reliability and reliability of the machine, reliability was measured by time stability method and using the correlation within the 0.85 class, and its validity was in the form of populations Different (Saif, 2011) were tested using healthy and autistic samples. Since there was a significant difference between the balance of healthy subjects and those with autism ($F = 3.01$, $P = 0.023$), it can be concluded that this tool has a high degree of validity for balancing. 2. The digital scale of Germany With precision of 0.001 kg, 3rd stamper 4- steel ruler was used.

Anthropometric characteristics were tried in a close range. The instrument used in this study was a 40*60 force pellet machine, a strain gage type of the Bertec model manufactured by MIE, UK, in 2000. The gauge, scale and ruler were used to measure height, weight, and length of the subjects' feet. Information about the displacement of the center of the pressure was recorded using a force plate device for a period of 30 seconds at a frequency of 200 Hz. It should be explained that before each attempt, the machine was calibrated to the subject's weight. Before doing the assignment, the subjects were given an explanation of their purpose and work, and they were asked to familiarize themselves with the task before going through the main attempts.

Subjects were placed on the device in four stages and each stage. They were instructed to balance their balance in the first stage under controlled conditions (without providing instructions), the second stage under the conditions of internal focus (focusing on the body), the third stage (a pair of markers as a distant outer space at a distance of 26 centimeters The feet were motivated and a pair of markers in front of the legs were placed as a close outer space (Kara, Yildirin, Kubilay, 2011); each of which is one of two directions of focusing on distances. Before starting any attempt, the subjects were reminded of their focus. 3 20-second attempts with 1 minute rest between attempts at each stage were taken from the subjects. To prevent visual feedback after the participants are deployed on the device, they are asked to look at the wall. Also, in order to eliminate the contrast effect of attention centers on balance, the order of giving instructions was random.

The descriptive statistics of frequency, mean and standard deviation were used to describe the individual characteristics of the subjects and the variables of the research. A repeated measure ANOVA was used to investigate the research hypotheses and Tukey post hoc test to find the location of the

differences. Statistical operations were performed using spss software version 19 and 2013Excel software was used to draw charts and tables.

Findings

Table 1 shows the descriptive findings of different equilibrium parameters in four basic conditions, internal focus, near external attention, and outer outward attention.

Table 1: Descriptive findings related to various balance parameters in different attention situations

Conditions	Number	The speed of the center of pressure shifts		Center-side shifting		Anterior-posterior displacement	
		Average	Standard deviation	Average	Standard deviation	Average	Standard deviation
Foundation	21	9.76	3.77	7.90	4.61	4.39	2.65
Inner attention	21	9.23	3.45	7.61	4.49	3.88	2.13
Close Exterior Attention	21	8.25	4.03	7.14	4.62	3.16	1.57
Outside attention away	21	6.61	4.38	6.07	4.62	2.39	1.35

Table 1 shows that the participants were in better balance in external circumference conditions compared to external outlook conditions, internal focus, and baseline conditions. In addition, participants were more stable in the context of the close external attention to the conditions of internal and basic attention. Note that because the points show the amount of displacement from the center of the pressure, lower displacements show better equilibrium.

Table 2 shows the results of intra-group analysis of variance analysis with repeated measurements in the anterior-posterior displacement of the center of pressure in the four test conditions.

Table 2: In-group variance analysis results in anterior-posterior displacement of the center of pressure in four conditions

Source of change	Sum squared	Degrees of freedom	Average squares	Value f	Value of P
Anterior-posterior axis	0.23	2.68	0.08	2.66	0.04
Error	2.65	74.15	0.035		

According to Table 2, there is a significant difference between the anterior-posterior displacements of the center of pressure during the four conditions. Bonferoni post hoc test was used to determine the position of the differences between the conditions. The results of this test showed that there is a significant difference between the underlying conditions with circumferential circumference ($P = 0.001$) and near external attention conditions ($P = 0.02$).

Table 3 shows the results of intra-group analysis of variance analysis with repeated measurements in the central displacement of the center of pressure during the four test conditions.

Source of change	Sum squared	Degrees of freedom	Average squares	Value f	Value of P
Central axle-side	0.33	2.73	0.12	4.00	0.01
Error	2.75	75.13	0.03		

According to Table 3, there is a significant difference between the center-axis displacements of the center of pressure during the four conditions. Bonferron's post hoc test was used to determine the position





of the differences between the conditions. The results of this test showed that there is only a significant difference between the conditions of external circumference and the base conditions ($P = 0.024$).

Table 4 shows the results of intra-group analysis of variance analysis with repeated measurements at the velocity of the center of pressure during the four test conditions.

Table 4: In-group variance analysis results at the velocity of the center of pressure during four conditions

Source of change	Sum squared	Degrees of freedom	Average squares	Value f	Value of P
Speed of movement	2.24	2.52	0.88	22.00	0.0001
Error	3.34	73.54	0.04		

As you can see in Table 4, there is a significant difference between the speeds of the center of pressure during the four conditions. Bonferroni's post hoc test was used to determine the position of the differences between the conditions. The results of this test showed that there is a significant difference between the conditions of outer circumference and the basic conditions ($P = 0.001$).

Discussion and conclusion

The purpose of this study was to investigate the effects of internal and external focal points on the static equilibrium of autistic children. A remarkable point in this study is that in the area of focusing the outer focus on the balance of MS patients, it seems that little research has been done so far and the effect of distance has been studied in quantitative studies. This study showed that the static balance of Autistic children, is better in the focus of external attention, and patients' performance is better in distant outer attention than in near external attention. Since the main tasks of the guidelines are directed toward the focus of attention, it seems that when people's attention is focused on symptoms in the environment or on thoughts or programs, it is more likely than the circumstances where instructions are given to draw individual attention to a given data position Cannot increase the productivity of the round movement (Magel Richard, quoted by Vaez Mousavi, Mohammad Kazem, 2008).

On the other hand, the study of various focal points and their effects on specific patients (such as pancreatitis, Parkinson's disease, cerebral palsy) has been studied in a few studies. The results of studies by Wulf et al. (2009) and Fasoli et al. (2002), which examined the balance of people with Parkinson's disease in stroke patients, showed that these patients, similar to healthy adults, were included in motor activities such as Balancing from the focus of external attention benefits more (Wulf et al., (2009) and Fasoli et al., 2002). Also, in a research conducted by Shafizadeh et al. (2012) on patients with

multiple sclerosis (MS), foreign intervention (external attention focus) on factors such as step length and rate velocity, compared with other conditions (attention spot Internal and control groups) was much better (Shafizadeh et al., 2012).

In the context of the distance between the focal point of the outer (near and far) focus on the balance of patients with autism spectrum disorder, no research has ever been found. Comparison and study among the previous findings that examine the distance of the focus of the external attention indicates that increasing distance in the focus of the external attention can improve performance. In general, the findings of this study were compared with the results of Rami (2014), Abdoli et al. (2012), on the effect of focusing attention on balance, as well as Dousti et al. (2011) on the balance of multiple sclerosis patients and Akbari Yazdi (2011), Marcial Limache Sandoval, (2017) Also, Shafizadeh et al. (2006) in Iran and Lander and McNevin study, Sinita (2003) and colleagues, Chiviawosky (2010), Wolf et al. (1998), Wulf G, Lauterbach B, Toole (1999), McNevin et al. (2003)) Was outside of Iran (13,15,16,28,33).

It is argued that the role of the focus instruction, when the instruction focuses the attention of the performer on the limb involved in the movement, leads to the loss of automatic control processes, while, when it focuses attention outside the body and the effect of movement, it causes Facilitating automation and self-organizing processes is better for different devices and is not limited by automated control processes; consequently, the individual's need to

reduce the involvement of higher nerve centers for organ management, and for this reason, motor improvement is improved (Wulf, 2009) . It is also argued that the effects of the spatial position of the body are less recognizable until they are far away from the body, and farther away, easier to distinguish and recognize (Rami, 2014).

The results of this study were consistent with the views on the focus of attention in motor control. The findings of this study can be explained by Wolf's limited operation hypothesis. This hypothesis states that the attempt to consciously control the movement in the form of conditions of internal attention limits the motor system and prevents automatic processes that control the movement. By contrast, moving away attention from moving and moving it towards the effects of motion (external attention conditions) allows the system to be naturally self-organized (Dousti et al, 1977 and Viviana Nández Silva and Lucas Valdez, 2017). Also, the findings of this study showed that when balancing the balance in these children when the focus of the external attention center focused on the effects of the distant environment in the environment, the balance was in better condition. However, it seems that increasing the intervention of automatic processing when increasing the distance of the external focus point can improve the balance of performance in patients with autism. It is argued that the role of the focal point of instruction, when the instruction focuses the attention of the performer on the limb involved in movement, interrupts the processes of automated control, while facilitating the attention of the outside body and the effect of movement In automated control processes, it also improves the self-organizing of different devices and is not limited by automated control processes. Therefore, the results of this study were consistent with the views presented in the focus area on motor control.

The findings of the present study can be explained by the limited action hypothesis that the limited operation hypothesis states that the attempt to consciously control the movement, in the form of the conditions of internal attention, restricts the motor system and prevents the automatic processes that control the movement. By contrast, moving away attention from moving and shifting it towards motion effects (external attention conditions) allows the system to be naturally self-organized.

The results of this study also support the well-known processing theory of Maxwell J, Masters (2000). Based on this hypothesis, conscious and vigilant control processes under pressure and anxiety will return to the early stages of learning. Because, the operation is not automated, and is voluntarily controlled (Maxwell J, Masters 2000). The person reduces the involvement of higher nerve centers for organ management, and therefore increases the movement speed. These scholars also provide a different explanation of the outgrowth focus. In this way, the focus will focus the learner's external focus on the inner information and possibly some important external information (such as focusing on the balloon location). Therefore, the adoption of the focus of the inner attention imposes more burdens on the sources of attention or working memory, which is the likely cause of poorer implementation in those who focus on internal factors. In performing the secondary task, poor implementation and disruption of implementation have been observed in individuals who have taken the center of attention. The cause of this disorder, the increased attention load is reported beyond the capacity available in the context of the implementation of the secondary task. Since children with autism have more disturbance in corrective commands because of developmental delay disorders or problems with central nervous system and clinical features in the field of autism spectrum disorder, they tend to be more likely to have a higher status than healthy children, which may in turn impede Social development, and the desire to participate in the sport of these children, and because of the provision of specific attention guidelines, when the symptoms were used, as well as the results of the present research, the static balance of these children improved. This research has led us to be more confident in pointing out the guidelines of the outreach center as a treatment plan for parents, physical education teachers, coaches, therapists, physiotherapists, and anyone who deals with these children in a way.

This study has the advantages of increasing the skill of balance with increasing distance in the focus of attention in patients with autism. Our findings show that the balance is in better shape when applying the static equilibrium skill in patients with autism when the focus of the external focus focuses the attention of the individual towards further effects in the environment. It seems that focusing on the consequences of moving away from focusing on





the consequences of a closer focus gives rise to higher frequency responses. This shows that balancing control is more automatic when individuals focus on the outcome of a movement far away from the body (Wulf, 2009). However, it seems that increasing the intervention of automatic processing when increasing the distance of the focal point of attention can improve the balance performance in MS patients. It is also suggested that future studies should investigate the effect of distance in other neurological diseases.

In general, the results of this study showed that, in the context of the guidelines of the distant outside attention center, the performance of patients with autism improves in static equilibrium skills; therefore, rehabilitation and physiotherapy educators are advised to follow the guidelines of the focus in their physical therapy interventions. Externally focused attention to improve equilibrium skills in patients with autism.

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References:

- Abdoli, Behrooz. Farrokhi, Ahmad. Shamsipur Dehkordi, Parvaneh Shams, Amir (2012). The influence of the inner and outer focus of attention through feedback and instruction on learning to maintain dynamic balance. *Motion behavior Autumn and Winter*, No. 11.
- Abidoglu, U. P., Ertugruloglu, O., Buyukegilmez, N. (2017). Importance of Computer-Aided Education for Children with Autism Spectrum Disorder (ASD). *Eurasia Journal of Mathematics, Science and Technology Education*, 13(8), 4957-4964. <https://doi.org/10.12973/eurasia.2017.00975a>
- Akbari Yazdi, Majid. Sohrabi, Mehdi Moghaddam, Amir (2010). Comparison of the Effect of Exterior Focus Spacing on Dynamic Equilibrium Homework, *Journal of Growth and Motor Sport Learning*, University of Tehran, No. 3.
- Arian, Rabeay, Sharifzadeh Yazdi, Mohammad Jafar, Sharafuddin Zadeh, Naser Goharpi, Shahin. Arasto, Ali Asghar (2010). Evaluation of physical balance in multiple sclerosis patients in Khuzestan province using functional clinical tests. *Scientific Medical. Ninth Book No. 1*.
- Chiviawosky S, Wulf G, Avila L (2013). An external focus of attention enhances motor learning in children with intellectual disabilities. *Journal of Intellectual Disability Research*. 57(7):627-634.
- Chiviawosky S, Wulf G, Wally R. An external focus of attention enhances balance learning in older adults. *Gait Posture*. 2010 ; 32 : 572-5
- Cluff T, Gharib T, Balasubramaniam R (2010). Attentional influences on the performance of secondary physical tasks during posture control. *Experimental brain research*. 203(4):647-58.
- Dousti, Fatima. Foroughi Pour, Mohsen Sohrabi, Mehdi. Taheri, Hamid Reza. Saeidi morteza Teimuri, Samaneh (2013). Investigating the effect of internal and external attention guidelines (on and off) on the balance of patients with multiple sclerosis. *Journal of Mashhad University of Medical Sciences*, No. 1.
- Fasoli S E, Trombly C A, Tickle-Degnen L, Verfaellie M H. Effect of instructions on functional reach in persons with and without cerebrovascular accident. *Am J OccupTher*. 2002; 56:380-90.
- Hejazi Deanan, Parisa. Aslankhani, Mohammad Ali Farrokhi, Ahmad. Shojaei, Masoomeh (2011). The Effect of Attention Points on Kinematics and Precision Throw During Dart Throw Learning in Beginners. *Motion behavior and sports psychology, autumn and winter*, No. 9.
- Kubilay N, Yildirin Y, Kara B. Effect of balance training and posture exercises on functional level in mental retardation. *Fizyoterapi Rehabilitasyon*. 2011; 22(2): 55-64.
- Lohse KR, Wulf G, Lewthwaite R (2002). Attentional focus affects movement efficiency. Skill acquisition in sport: Research, theory and practice. 2012:40

- Magel Richard E. *Learning Learning Concepts and Applications* (2008). Translators: Vaez Mousavi Mohammad Kazem, Shojaei Masoumeh. second edition. Tehran: Hanane Publications.
- Marcial Limache Sandoval, E (2017). Capital intelectual en la competitividad de las MIPYMES en Tacna-Perú. *Opción*, Año 33, No. 84 (2017): 504-535
- Maxwell J, Masters R, Eves F.(2000). From novice to no know-how: A longitudinal study of implicit
- Maxwell, J. P. (2002). External versus internal focus instructions: Is the Learner paying attention? *IJASS*, 70-88.
- McNevin NH, Shea CH, Wulf G (2003). Increasing the distance of an external focus of attention enhances learning. *Psychological research*. 67(1):22-29.
- Moghaddam, Amir. (2008). The effect of the difficulty of the task and the focus of the focus instruction on the implementation of a equilibrium task. *Journal of Motion*, No. thirty six. motor learning. *Journal of Sports Sciences*. 18(2):111-120.
- Poolton JM, Maxwell J, Masters R, Raab M (2006). Benefits of an external focus of attention: Common coding or conscious processing? *Journal of sports sciences*. 24(1):89-99.
- Rafeie, Talat (2007), Evaluation and treatment of autism. Tehran. Spectroscopy printing.
- Rami, Forugh (2014). The Effect of Different Directions of Attention on Learning to Throw Up the Shoulder in Children with Attention Deficit / Hyperactivity Disorder (ADH). Master's thesis. Shahid Chamran University of Ahvaz.
- Sadeghi, Haidar. Nowroozi, Hamid Reza Karimi Asl, Akram. Montazer, Mohammad Reza (2009). The effect of a six-week functional training program on the static and dynamic balance of elderly men. *Iranian Healthy Elderly Journal*. Third Year, No. 8.
- Self Ali Akbar (2011). *Measuring Educational Assessment and Evaluation*. First Edition. Tehran: Publishing Duran.
- Shafizadeh Mohsen K, Platt Geoffrey, Mohammadi Baharak. Effects of different focus of attention rehabilitative training on gait performance in Multiple Sclerosis patients. *Journal of Bodywork and Movement Therapies*. 2012 ;17(1):28-34.
- Shahreyari Ahmadi, Bahareh (2007). Comparison of the effects of two types of external attention focus on the practice and learning of the forehand tennis blow, Master thesis, Mashhad Islamic Azad University.
- Viviana Ñañez Silva, M & Lucas Valdez, G.R (2017). Nivel de redacción de textos académicos de estudiantes ingresantes a la universidad . *Opción*, Año 33, No. 84 (2017): 791-817
- Wulf G, Höß M, Prinz W (1998). Instructions for motor learning: Differential effects of internal versus external focus of attention. *Journal of motor behavior*. 30(2):169-179.
- Wulf G, Landers M, Lewthwaite R, Töllner T (2003). External focus instructions reduce postural instability in individuals with Parkinson disease. *Physical therapy*. 89(2):162-168
- Wulf G, Landers M, Lewthwaite R, Töllner T. External focus instructions reduce postural instability in individuals with Parkinson disease. *Phys Ther* . 2009; 89(2): 162-8.
- Wulf G, Landers M, Lewthwaite R, Töllner T. External focus instructions reduce postural instability in individuals with Parkinson disease. *Phys Ther* . 2009; 89(2): 162-8.
- Wulf G, Lauterbach B, Toole T (1999). The learning advantages of an external focus of attention in golf. *Research quarterly for exercise and sport*. 70(2):120-126.
- Wulf G, Mc Nevin N H, Shea C H. The automaticity of complex motor skill learning as a function of attentional focus, *Q J Exp Psychol Journal*. 2001; 54(4): 1143-54.
- Wulf G, McNevin N H, Shea C H. The automaticity of complex motor skill learning as a function of attentional focus. *Q J Exp Psychol-A*. 2001; 58A: 1143-54.
- Wulf G, Prinz W. Directing attention to movement effects enhances learning: A review. *Psychon b Rev* . 2001;8: 648-60.
- Wulf G. Attentional focus and motor learning: a review of 15 years. *International Review of Sport and Exercise Psychology*. 2012; 1-28.

