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THE FUNCTIONAL ACTIVITIES MANIPULATION AND ADAPTATION (FAMA) APPROACH IN CEREBRAL PALSY: A TREATMENT PROPOSAL WITH EMPHASIS ON MOTOR LEARNING

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Abstract

There are different approaches used by physiotherapists in the treatment of cerebral palsy (CP), but the majorities are based on theoretical and conceptual knowledge gained from the development of motor control. This work aims to present an approach for the treatment of cerebral palsy based on the knowledge of motor learning. When determining the advancements in studies on motor learning and that such knowledge can somehow assist the physiotherapist in the organization of their clinical intervention, the idea arose of developing a treatment approach that is based on the use of this knowledge of motor learning in the treatment of CP. The Functional Activities Manipulation and Adaptation (FAMA) approach is a physiotherapeutic proposal in the treatment of CP that uses the nominal language of the ICF and, to arrange treatment, uses clinical experience with the best evidence available and the needs of the patient. Its main objective is to provide functionality for mobility, through the knowledge of motor learning, focusing on the classification of functional skills, structures and factors that influence practice. Motor learning is the greatest difference of the FAMA approach, where the knowledge acquired through motor learning seeks to organize the physiotherapy treatment for CP.

Key words: cerebral palsy; physical therapy modalities; learning.

INTRODUCTION

When reading the text of Abernethy and Sparrow[1] "The rise and fall of dominant paradigms," citing Kuhn[2] there is the importance of different paradigms for the effective consolidation of a particular area of knowledge. Kuhn considers a paradigm as a description of relevant issues of a particular concept, with a combination of terms and theories and their visions of the world and reality. Incidentally, the text has been cited and discussed by several authors[3,4]. Aune et al.[4], bring out clearly the factors that influence the rise and fall of different paradigms, the emergence of new paradigms and their importance to health professionals by featuring four stages of science:

1 - Pre-science

This is the period in the early development of research in a particular field where the field is finding its feet and establishing the subject and plans of action. It is the period in which no single paradigm or theory proposition is strong enough to be well accepted and ensures the research process.

2 - Normal science

This is the moment that there is a maturation of that field and a better understanding of different paradigms: the emergence of a paradigm that has enough power for the explanation and basis of knowledge that attracts the adherence of other scientific fields, with emphasis on the empirical work that excels in the enunciations that would justify a dominant theory. It consists of the scientist solving their problems even before producing advanced concepts in that field.

3 - Crisis of paradigms

This is the moment where a paradigm is unable to solve and explain the data, as well as establish facts in a field. It is the time that explanations become unsatisfactory, mainly due to the emergence of confronting data. It is

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characterized by the modification or development of other paradigms.

4 - Revolutionary science

This consists of the period of battle between paradigms and the emergence of a new paradigm that will guide the normal future activities of science in that field.

When considering: (a) approaches to the treatment of cerebral palsy (CP) as different paradigms, and assuming that rehabilitation through the use of knowledge from the philosophies, ideas and concepts offered by these approaches; as well as (b) the difficulty in conducting studies with CP, when using the prerequisites offered by foundations of these approaches, this author takes the liberty (conscious of committing error) to suggest that the scientific basis of the approaches to the treatment of CP is still in the period of pre-science, where the approaches are well accepted at the time of the intervention, likely for lack of choice, but none is strong enough to be well accepted and ensure the research process. It is quite common at this moment of pre-science of the emergence of different paradigms that try to overlap each other and somehow be accepted and participate in future directions in the research field[1].

However, when is the time to develop a new paradigm? Is it when the physical therapist who works with CP begins to organize their thinking and discerns what is the most appropriate for the improvement of their patients? After identifying a rationale that can be justified based on evidence and preferably with scientific evidence, these ideas together constituted a new way of thinking of the patient. Certainty, this reasoning is based on other treatments, but to identify a difference to the proposals offered emerges a new approach[1].

In accord with that expressed above, it can be stated that scientific evidence is still far from supporting the formation of a treatment approach in CP, but ideas that offer a different way of thinking of the patient and allow new directions for clinical intervention, interesting in the formation of a physiotherapist, aremost probable.

Based on the latter statements, all professionals are looking for, or if appropriate, to differentiate, which enables the development of the uncommon and preferably with some theoretical basis. It was during this author´s doctoral study at the University of São Paulo (Brazil) in 2005 that he became aware of motor learning. The discipline was taught by Professor Dr. Andrea Michele Freudenheim, a member of the Motor Behavior Laboratory (LACOM), one of the most prestigious groups in the area of human motor behavior in Brazil. As the course progressed, the author realized that the formation of the physiotherapist, and thus the clinical applicability, is based on development and motor control, but little is correlated with motor learning.

When determining the advancements in studies on motor learning and that such knowledge can somehow assist the physiotherapist in the organization of their clinical intervention, the idea arose of developing a treatment approach that is based on the use of this knowledge of motor learning in the treatment of CP. It is important to clarify that there is not an adequate scientific basis to prove the intervention through knowledge acquired through motor learning and also do not intend the FAMA approach to speculate on reasons that the use of knowledge of learning are more effective than the knowledge provides by control or motor development. The intention of the FAMA approach is only to offer to the physiotherapist current knowledge of motor learning and how it can be used in organizing a program of therapy in the treatment of CP, but always making clear to consider and respect the subjectivity of existing scientific bases.

The organization of an approach may rely on inductive theory, where the researcher starts with a set of facts and then tries to find a conceptual framework around which to organize and explain them[5]. Inductivism has as a general principle that observation, neutral and impartial, is the unit from which to build a scientific theory, once presented the data acquired from observation and experience, one can, under certain conditions, generalizing singular statements for universal statements[5]. However, the FAMA approach arises from a formulation based on inference, which includes existing facts and accounts for evidence that relate to the content of the approach[5]. The FAMA approach provides formulation to stable hypotheses in the form of statements and uses the maximum of existing knowledge in the field executed, through assumptions that drive results and to provide greater support for the approach.

ORGANIZATION OF THE FAMA APPROACH

The FAMA (functional activities manipulation and adaptation), created in Portugues as MAAF (Manuseio e Adequação de Atividades Funcionais) is a physiotherapeutic approach developed and organized with the intention of providing the physical therapist, in the treatment of CP, the possibility of using the interaction of three basic fundamentals in the organization of the therapeutic procedure, which are: (1) A common language to heighten and implement communications among physical therapists who work with the consequences of symptoms or health conditions of individuals with CP based on the nomenclature of the ICF (International Classification of Functioning, Disability and Health)[6]; (2) Scientific justifications that may direct the organization of physiotherapy treatment on CP with evidence-based practice (EBP)[7]; and (3) Knowledge originating from motor learning that can support physical therapy in CP.

The following will detail the use of these three fundamentals of the FAMA approach:

1-Use of ICF: Approved by the World Health Organization (WHO) in 2001 and translated into Portuguese in 2003[6], the ICF has the specific goals ofproviding a scientific basis for the understanding and study of health and its symptoms, causes and effects; and offering a common language for describing health-related states to improve communication between different users, health professionals and researchers[6]. The use of the ICF is incorporated and used in various health sectors by multidiscipline teams through physical therapy[8] and for CP[9]. Thus, the FAMA treatment approach chose to use the common language proposed by the ICF to base the practice of physical therapists in the treatment of CP. The FAMA approach proposes the organization of treatment in two parts:

Part I- functionality

Functionality determines the participation of the physiotherapist in changes of functions and body structure in CP, directly related to nervous system structures and structures primarily related to movement. This considers body functions, the physiological functions of body systems, and body structures, the anatomical parts of the body such as organs, limbs and components[6].

Considering functioning, FAMA emphasizes the training of functional activities and participation with a focus on performance directly related to mobility, which favors the changes in functionality, maintenance and transfer of the basic positions of the body, especially to walk, move and shift. The ICF proposes as a definition of activity the execution of a task or action by an individual, and as a definition of participation the involvement in a situation of daily life. The name FAMA (Functional Activities Manipulation and Adaptation) appears exactly as the focus of physical therapy in the training of functional activities of mobility, allowing the execution of a task effectively. At this point, it is important to note that despite the focus on mobility training activities, the FAMA approach also considers and directs the treatment to changes in structures and body functions, as well as in achieving a better performance for effective social participation.

Part II- contextual factors:

FAMA ascertains the contextual factors proposed by the ICF6 that may facilitate or hinder the functionality for the individual with CP. The FAMA approach suggests the organization of a physiotherapeutic program directed to the improvement in mobility, which considers the difficulties of the patient´s limitation of activity or restrictions in participation.

2-Evidence-Based Practice (EBP)

The therapist faces many challenges in their professional practice and needs to develop, from a scientific point of view, a methodology to use EBP[7] in their daily work, always aiming to provide the maximum for the patient through better and more well-founded clinical practice[7,10,11].

EBP is defined as the integration of knowledge of the clinician (clinical experience) with the best evidence available and the needs of paciente[7]. Clinical experience is the ability to use professional judgment and experience to identify the health status and diagnosis of a given patient, assessing the risks and benefits of an intervention[7,11]. Thus, it is important not only to take in the available literature, but also put this information into clinical practice. After the observations presented, the FAMA approach emerged and uses four steps to EBP[7,10,11]: the transformation of clinical needs in answerable matters, the location of the best evidence to answer these questions, to critically check the validity and importance of evidence, and the integration to verify the clinical experience to the needs of the patients.

3-Motor learning:

Motor learning is the greatest difference of the FAMA approach, where the knowledge acquired through motor learning seeks to organize the physiotherapy treatment for CP. Tani[12] states that motor learning attempts to study processes and mechanisms involved in the acquisition of motor skills and in the factors that influence it, for example, how a person becomes efficient in executing movements in order to achieve a specific aim through practice and experience. Carr and Shepherd[3] and Bar-Haim et al.[13] cite that one of the changes in neurological treatment are in progress and use of knowledge of motor learning in the treatment of neurological changes.

According to Gallahue and Ozmun[5], learning is directly related to motor skill and it is essential to clarify that motor skills can be defined as task-specific to be achieved, requiring voluntary movement, or as fundamental motor patterns performed with precision, accuracy and control. Another definition widely used is that presented by Guthrie[14] mentioned by Schmidt[15], in which skill constitutes the acquired ability to achieve a final result with a maximum certainty and minimum outlay of energy or time and energy. A motor skill is a skill for which the main determinant of success is the quality of movement the performer produces.

THE FAMA APPROACH - THEORETICAL FOUNDATION OF MOTOR SKILLS

The FAMA approach presents proposals for the use of motor skill classifications[5,16] as a suggestion of a multidimensional model for the treatment of CP where there are, according to Gallahue[16] four aspects to classify the abilities of movement that have gained popularity over the years, namely (a) muscular, (b) temporal, (c) environmental and (d) intentional. Because motor changes in CP have a significant influence of aspects

related to muscle tone and influenced by the child's state of attention, the FAMA approach also includes a proposal for motor skills considering a fifth aspect, "(e) attention", which is explained below:

(a) Muscular aspects

There is no clear delineation between gross motor coordination and fine motor coordination; nevertheless, the movements are often classified as one or the other. A movement of gross motor coordination involves the movement of large muscle groups of the body[5,16-18]. Most sport skills are classified as movements of gross motor coordination, with perhaps the exception of target shooting, archery, and some others. A movement of fine motor coordination involves movements of limited parts of the body in the performance of movements[17,18,19]. Considering daily activities, the manipulative movements of sewing, writing and typing are generally considered movements of fine motor coordination. For the organization of motor skills by analyzing factors synergy of movements during the performance of gross or fine motor tasks should consider three aspects: overall, specific and target.

Overall: The overall aspect considers general movements, the large muscles of the body correlated with gross motor coordination. Generally, the activities that require transfer (roll, sit and stand) and locomotion (drag, crawl and walk) are considered overall motor skills[5,16]. Even if the extremities are needed for aid, both the upper and lower limbs emphasize the use of more proximal muscle groups.

Segmented: The segmented aspect considers movements of one segment of the body[18,19], may be the trunk, but often the segmented aspect is represented by the upper and lower limbs, considering arms, forearms, legs and thighs. The feet and hands can participate, but not in a specific way. Segmented aspects are represented by activities that require movement of the extremities without much precision (e.g., play, hit, kick and push).

Specific: The specific aspect considers movements with great specificity[5,17,18], directly related to fine motor skills, where distal muscle groups should perform refined tasks with various details. Specific aspects are represented by activities that require precision[5,16], for example: catch, write, fit, paint (use of hands), place foot on a ball, and to point the foot toward an object (use of feet).

(b) Temporal aspects

In the temporal form of classification of motor skills, the time of performance of activity and, especially, how many repetitions of the same movement are considered and should be used to fulfill the specific proposed functionality[5,16,19]. Hence, it can be observed that movement is a continuous process of behavior, as opposed to a well-defined brief action. For the temporal aspect, beyond the importance of time, is the number of repetitions of the same motor act, thus, three aspects should be considered: discreet, serial and continuous.

Discreet: Discrete movement has beginning and end defined, in which a specific motor act is performed once and many times very brief in duration[17], but with sufficient time to complete a task. The main characteristic of a discreet movement is a recognizable beginning and end, where there is no immediate repetition of a movement[5,19]. Discrete skills are important in the context of various functional activities (kicking, throwing an object, standing, sitting), always with something that only relates to performing a motor act.

Serial: Sometimes discrete skills are placed in series to form more complex actions. The sequence of skills is referred to as serial, suggesting that the order of elements is somehow crucial to the success of the movement[17-19]. Serial movement involves making a single and discrete movement several times in rapid sequence, with no interval between repetitions[5,16,17] (e.g., jumping rope and jumping repeatedly on one foot)[5,16]. Another possibility of a serial skill occurs in a combination of different discrete movements, but which together create a greater action, only as if it were truly discrete from the beginning, as in the case of a series of exercises or the act of changing the gears of a car by stepping on the clutch and depressing the accelerator. During the learning of serial skills, the individual focuses on different elements of the task, then, after considerable practice, they are able to combine elements to form a unified sequence[16].

Continuous: Continuous movement is defined as movements that are repeated for a long period of time, in which a certain movement is repeated successively to enable the function. A skill organized so that if the action unfolds without an identifiable beginning and end, it is identifiable as continuously and repetitively[16] (running, swimming and cycling are the most classic examples).

(c) Aspects of the environment

In an environmental classification of motor skills, we consider the interaction of task and environment, where the predictability of the movement defines the type of task[5,16-19]. In this system, the term environmental refers specifically to the object on which the individual is acting or characteristics of the context in which the individual performs the skill[17,18]. As a consequence, three aspects are considered: open, closed and mixed[5,16-19].

Open motor skills: A motor skill is performed in an environment where the conditions are constantly changing. It is a skill performed in an unstable environment, where the object or the

context changes during the performance of skill[18,19]. To successfully perform such a skill, the participant should act in accordance with the action of the object or the characteristics of the change of the environment[18,19]. Skills can vary temporally (predict when a signal to be answered will happen or predict the course of time in a sequence of events) or spatially (predict what will happen before the signal is presented)[17,18]. These conditions require the individual to make changes or adjustments to movements constantly to perform a function in accord with the proposed task. It takes a lot of variability and flexibility[17,18] in performing an open task, which are executed in an constantly changing environment, making the planning of movement difficult. An interesting feature of open motor skill is the small chance of early movement. Skills are performed in an environment that is unpredictable. They allow the individual to use the same movement pattern, forcing the adaptation of movements in response to the dynamic properties of the environment. Most of the activities in group or pair games require open skills.

Barela and Barela[20] cite that in general, any explanation of control and coordination of movements must use a style of organization in which the various degrees of freedom of the system is both dominated and provide flexibility and versatility toward changes imposed by variations in the context in which movements are performed.

Since the environment is the great difference, Magill[19] mentions that walking can be considered an open or closed skill, in other words, the differentiation is the situation in which walking is executed. When walking is accomplished in a empty environment without interference acting on the individual, its considered a closed skill, but when walking is in an environment full of obstacles and unpredictable, it is an open skill. Gallahue[16] cites as an example the child who participates in a typical game of tag that requires running and sudden movements in different directions, never uses exactly the same movement patterns during the game. The child must adapt to the demands of the activity through a variety of similar but different movements.

Closed motor skills: Closed motor skills are those performed in a stable or predictable environment where the participant determines when the action will begin and end, and has control over all aspects involved in the activity[5,16-18]. For these skills, the object on which it acts does not change during the performance of the skill, as the object waits for the action of the individual. Examples where surprises are virtually nonexistent, and the individual is in total control of the environment are: the vertical jump, long jump, target shooting[5,16], where in such cases the individual depends on his own without any interference from the environment. If a therapist asks the patient to take a stationary object from the floor, this would be a closed skill because the object does not move during the interval of the patient's decision to take the object until the execution of the motor act. To request the patient to walk into a room is also a closed skill because the environmental context will not change during the execution of the function. For closed skills, the patient can initiate action when they are ready, and perform the task according to their will[8,16,19]. Schmidt and Wrisberg[17] define closed skills as skills performed in an environment that is predictable or steady, allowing the performer to plan their moves in advance.

Mixed motor skills: Schmidt and Wrisberg[17] report that the classification system of open and closed motor skills emphasizes the predictability of the environmental demands placed on the performer. In this case, for the skills that are situated closer to the extreme "closed" of a continuum (e.g., golf, bowling, knitting) the environment is stable and the performer can assess in advance, organize movements without feeling pressed for time and perform an action without any need for sudden adjustments[17]. Conversely, with the skills that are closer to the extreme "open" of a continuum (e.g., playing football, tennis and basketball), the performers must be able to "read" the environment to adjust the movement, usually in a small amount of time[17].

However, what to do with skills that are located in the middle of this continuum between the extremes open (unpredictable) and closed (predictable), Schmidt and Wrisberg[17] used the expression semipredictable for these types of motor skills. In this case, to facilitate the clinical application of knowledge, it was decided to propose the possibility of mixed motor skills, for which the task requires an environmental control, but with the possibility of external interference, or in other words, the individual depends on their skills but there are some factors that can be modified in the environment. A clear example in sports are running and swimming competitions, where the individual only depends on their own ability, but needs to be aware of the competitor who may present surprises at any given time.

(d) Intentional aspects

Movement skills can be classified based on their intent, when the child has the intention to maintain a posture, or to move in space, or to perform any act which requires the use of extremities to perform a function. Intention is related to the task-interaction and movement environment, which considers the following three aspects; stable, mobile and manipulative.

Stable skills: Stable skills are skills in which the body orientation of an individual are used in maintaining a stable orientation[5,16-18] as in the act of assuming or maintaining a specific position such as to remain sitting, standing, or balancing on one beam.

Mobility skills: Mobility is an important aspect in the treatment of CP[21,22]. Body orientation is related to movements that can be generated with two intentions. The first is characterized by transporting the body from one posture to another, such as those used in rolling, lifting, kneeling and sitting. Namely, these are skills of mobility but are in the category of "transfer." The second mobility is "Locomotion," where the individual intends to transport the body from one point to another, as to drag, crawl, walk and run.

Manipulation skills: These are skills that involve giving force to an object or to receive force from the same: to throw, catch, kick and serve are common manipulation skills16. The amount of manipulation of the upper extremities engaged in the task can range from relatively simple manipulation, which does not have a significant component of accuracy, to even more complex tasks that may require more speed and accuracy[18].

(e) Attention aspects

Attention aspects is a new classification in motor skills. The word attention and its influence on motor skills is little known[18], but as presented by Bottcher[23] and Bottcher et al.[24] in the clinical practice of the treatment of children with CP, it can be seen to have a strong influence on the attention of muscle tone and consequently on functionality, thus, it was decided to include this aspect in the FAMA approach, but always considering the lack of references.

The inclusion of attention aspects in the classification of motor skills should be considered as an initial proposal. Shumway-Cook and Woollacott[18] report that the use of the concept of attentive demand is very new, and are likely involved in cognitive processes in a wide sense considering attention, motivation and emotional aspects that underlie the establishment of intent or objective. Process indicators of attention include complex environmental pattern recognition and the response produced by the individual[18]. These factors make it very difficult to identify what kind of motor skill that the individual performs, mainly because of an individual representation of meaning and time. The factor to consider is the attention that is related to intent and objective, rather than the task itself, with the representation of the task for that child at that moment should be taken into account. Hence, motor skills of attention are split into three types: highdemand, lowdemand and medium demand. High-demand skills are characterized by a high demand of attention when the child needs close attention in accomplishing the task and the representation of task for the child should be taken into account.Low-demand skills are tasks that do not require much attention, usually postural activities, motionless, on how to maintain sitting or lying provide a low demand of attention. Additionally, simply for didactic reasons, the decision was made to create the possibility of a medium demand of attention. More than posture or activity, it is always important to consider the intention of the task and try to identify whether the proposed activity for that particular individual is a skill of high, medium or low demand.

THE FAMA APPROACH - PROPOSAL FOR A PRACTICAL USE OF MOTOR SKILLS

There are a wide variety of functional tasks that require the performance of movement in everyday life. The nature of the task being performed partly determines the type of movements needed to understand the control that the movement requires and the knowledge of how the tasks regulate or restrict movement. The recovery of function after central nervous system changes that occur with CP requires the patient to develop movement patterns that meet the demands of functional tasks. Thus, the therapeutic strategies that help patients learn or relearn functional tasks are essential to maximize the recovery and performance of functional independence[3,18]. The proposed FAMA approach is presented as an idea that can be used in clinical practice at the time of organizing the therapeutic program, through the use of motor skill classifications. Accordingly, the FAMA approach suggests the use of a multidimensional taxonomy.

The act of creating and developing taxonomies (the science that deals with the description, identification and classification of organisms or words) seems important for the rehabilitation professional[19]. Additionally the taxonomy provides the basis for the professional to assess performance problems, as it presents itself as a valuable tool in the selection of appropriate functional activities to help people overcome their deficiencies[19]. This is an important aspect of taxonomy, since it emphasizes the complementarity of the rehabilitation process. It is important to assess skill deficiencies[25,26], but the effectiveness of any program depends on the implementation of adequate activities to achieve functional goals for the patient[27,28].

Gallahue[16] reports multidimensional schemes for the classification of movement that allow the view of a movement skill in three or more dimensions.Not limited to just two-dimensional schemes such as those proposed by Gentile[29] and Gallahue[16], but can be viewed, depending on the goal, in three, four or even five dimensions. Despite the difficulty of visually portraying the conceptual point of view, it is possible to observe the phenomenon of movement in all five dimensions. Movement skills performed in the real world can be found in muscular aspects (overall, segmented or specific), temporal (discrete, serial or continuous), environmental (open, closed or mixed), intentional (stable, mobile or manipulative) and attention (high,

medium or low demand). Hence, the following is a multidimensional taxonomy of motor skills proposed by the FAMA approach to be used in the clinical practice of the physiotherapist (Table 1).

Table 1 - Proposed multidimensional taxonomy in motor skills used in the FAMA approach

Motor skills				
1 - Muscular	**2 - Temporal**	**3 - Environmental**	**4 - Intentional**	**5 - Attention**
Overall	**Discreet**	**Open**	**Stable**	**High demand**
Segmented	**Serial**	**Closed**	**Moving**	**Medium demand**
Specific	**Continuous**	**Mixed**	**Manipulated**	**Low demand**

Adapting the example of Gallahue[16], using the motor skills proposed by the FAMA approach: a child kicks a ball at a fixed target performing a segmented skill (under the muscular aspect), discreet (under the temporal aspect), closed (under the environmental aspect), manipulative (under the intentional aspect) and observing the aspect of "attention" (when one considers the situation of the task), to kick the ball at target for a competition even if it is between therapist and patient will probably be high demand, if it's only for fun without any increase in attention, it is considered a skill of low demand.

Although it seems difficult to view the movement in all five dimensions, it becomes a process that the FAMA approach encourages, and with this involvement and reasoning daily, will provide agility at the time of clinical practice. When identifying the multidimensional aspects of skill that will be suggested to the patient, considering the individual and the environment, the physiotherapist will organize a treatment program using the five dimensions, enabling a treatment that can facilitate the teaching-learning situation. The interaction between the requirements of the task, the biology of the individual and the environmental conditions of learning are directly related to the five dimensions of motor skills and can be considered at the time of organizing therapy[16]. For the FAMA approach, whenever a therapist addresses the teaching of a movement skill, they must imagine a list such as the following (adapted from that proposed by Gallahue[5,16]:

What are the requirements of the movement task that I propose to the patient?

- Is this a fine or gross motor coordination skill?
- Is this a discrete, serial or continuous movement?
- Is this a stable, mobile or manipulative skill?

What are the environmental conditions and demand that the patient needs to perform the proposed skill?

- Is it open, closed or mixed?
- Is the demand high, medium or low?

Despite the importance of multidimensional knowledge of motor skills, there is no effective or justifiable proposal on how to organize therapy. The therapist can develop a rehabilitation program working from selected aspects. Every aspect then provides a guide to select the appropriate activities to help the patient overcome their deficiencies and systematically achieve the functional goal of the therapy[19]. The FAMA approach uses the knowledge of motor learning but does not propose any rules on how to organize clinical practice. Considering the individual differences related to CP, it will be difficult to propose a rationale that can be transferred to different patients because there are very clear differences in the capacity and performance of the individual patient with CP.

The FAMA approach emphasizes that the therapist should know and analyze the aspects of each motor skill that will be proposed to the patient, and with this knowledge and considering the existing difficulty, be able to organize a treatment program according to individual needs of the patient. While not proposing a treatment protocol, here are three suggestions, still in development, that may help organize the therapeutic program: (1) Consider the environment.closed motor skills and low demand are likely to be more effective in performing the task proposed for patients with CP, while in day-to-day activities, the patient will have performance in open motor skills with high demand. Even during the training of a skill, the patient has more difficulties and commits more errors[30,31] and it is important to propose open activities with high demand; (2) Even though how to organize an effective therapy lacks to be effectively proven, the need of the patient with CP has different aspects of motor skill in different contexts[3,32]and a factor to be considered is the proposal of therapy activities that in some manner propose the performance of all the possibilities of motor skills, which may be the first step of logical reasoning; and finally (3) Try to develop a therapeutic program that considers motor skills, but the proposal of the task should be

the most functional possible by organizing learning goals that can be transferred to the day-to-day activities of the patient. Attainable goals, realistic and challenging[15,17] favor the participation of the individual, and likely benefit learning.

Other factors to consider with the fama approach

The FAMA approach based on motor learning also emphasizes the factors that influence the practice and its evidence in the treatment of CP, where three factors are applied: (1) Feedback (knowledge of results and performance) can be defined as information that individuals receive during or after the execution of a movement, enabling an assessment of whether the movement reached the goal desired; (2) Establishment of targets for specific or general short- or long-term performance or results; and (3) Guidance for verbal or physical demonstration. Lastly, there is the assessment of the applicability of practice structures, such as: compact and distributed practice, random and blocked; practice in whole and its parts and their influence on motor learning in CP.

CONCLUSION

The FAMA approach is a physiotherapeutic proposal in the treatment of CP that uses the nominal language of the ICF and, to arrange treatment, uses clinical experience with the best evidence available and the needs of the patient. Its main objective is to provide functionality for mobility, through the knowledge of motor learning, focusing on the classification of functional skills, structures and factors that influence practice.

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