95 - A PROGRAM ELABORATION OF A PREVENTIVE PHYSIOTERAPY FOR MUNICIPAL SCHOOLS' ATHLETES

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INTRODUCTION

The adolescence is a life's period permeated by deep biological, psychological and social changes. According to the World Health Organization (WHO), the stage of adolescence understands the age group between 10 and 19 years. According to Colli (1991) the component "bio" of adolescence is recognized as puberty and involves, among other physiological changes own from the age, the development of secondary sexual characters, the gain accelerated in stature and weight and the changes in the body position.

Evidences show that the growth, and in particular, the growth's impetus in adolescence may predispose children to injuries.

It appeared that the teens have their maximum peak in the growth's speed, on average, two years earlier than adolescent boys. The period of maximum acceleration in the growth reflects the gain in stature happening of the appendiculars and related to the trunk earnings. The members present prior acceleration of the trunk, with increments in terminals regions appendiculars before those observed in the proximal regions. The teenagers have been previously pubertal in their extremities, hands and feet, rather than other external body changes are observed. After these changes, the long will happen in the region of the trunk.

Besides the speed with which these changes occur, the genetic and environmental factors exert marked influences on the adolescent's development.

Reporting to the sport, adolescence is covered of great importance, not only for specifics aspects of the physical exercises' prescription to this age range, but for the whole biological, psychological and social context surrounding this period of life.

The amount devoted to the body image and the current society's valuation for thin individuals may result in poor dietary patterns in restrictive and inadequate intake of nutrients and energy. The search for patterns of beauty and self-image idealized and reinforced by the media may unleash eating disorders that result in serious states of exaggerated appetite and anorexy, particularly affecting teenagers and young adults.

So the professionals who care for active children in sports have as primary responsibility the prevention and rehabilitation of injuries. As the prevention in this age group essential to the continuous healthy exercises' performance, avoiding the muscle-tendinous imbalance, the defective anatomical alignment. Also the guidance about what the best type of shoes to use, state of illness associated and nutritional balance.

METHODOLOGY

This is a transverse study field, based in a bibliographic survey. Using a questionnaire adapted from Baptista et al (1999) as a tool, it was also held a physiotherapeutic evaluation Hoppenfeld (1995) and Guedes & Guedes (2006). The data were collected and organized in a spreadsheet to excell 2007. After this analysis was looked for compatible scientific evidence with the data, providing subsidies for the development of a Preventive Physiotherapy's Program. It was studied 176 Municipal Schools Sports' Athletes, aged between 6 and 17 years. Athletes were grouped according to the sex and the sport: **males**: 43 indoor soccer's athletes, 73 of football and 15 of basketball; **female**: 12 indoor soccer's athletes, 21 of volleyball and 12 of basketball. The sample was homogeneous, presenting their averages and standard deviations, according to sex: 131 **male** athletes: 13 years (2), 158 cm (15), 37 kg (9) and training's time of 20.5 months (13); 45 **female** athletes: 13 years (2), 152 cm (7), 49 kg (8) and training's time 19.4 months (23). In the questionnaire was verified the training's time, places of pain, suffered injuries, the location of the lesion, associated diseases, food among others. Already during the postural physiotherapeutic evaluation was observed the identification, clinical history, physical examination as inspection, anthropometric measurements, measurement, perimetry, muscle strength, mobility test. The evaluations has occurred in the year 2007, at the Faculdade Estadual de Educação Físca e Fisioterapia de Jacarezinho (UENP).

RESULTS

Through the evaluation physiotherapeutic was possible trace the athletes' postural profile: **Male**: lateral deviation86%, cervical hyperlordosis 45%, hypercifosis thoracic 72%, lumbar hyperlordosis 72%, knee aligned 61% with hyperextension tendency 29%, varus knee 23% in the indoor soccerl, valgus 27% in football and 25% in basketball, ankle aligned 47%, with a tendency to valgus 38%, plan foot 52% with aligned tendency 43%.

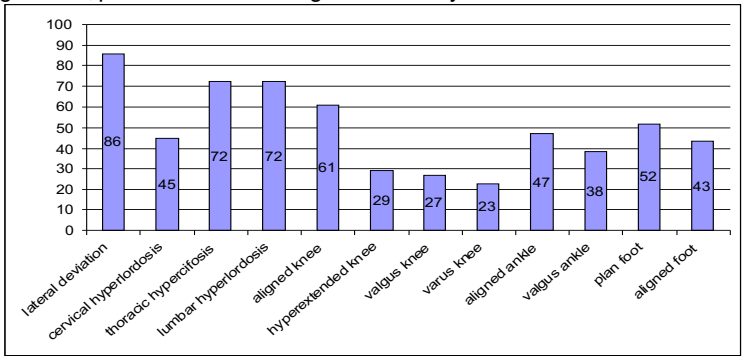

Chart 1 - Male's Postural Profile

Female: lateral deviation 79%, normal cervical lordosis 70%, thoracic hypercifosis 63%, lumbar hyperlordosis 61%, knee aligned 44%, with the valgus tendency 34% and hyperextension tendency 46%, ankle aligned 39%, with valgus tendency 34 %, plan foot 71%.

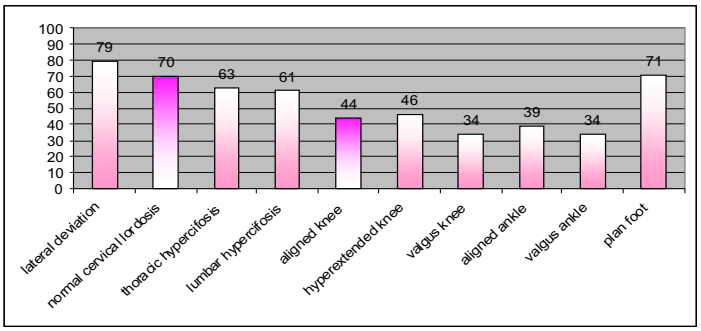

Chart 2 - Female's Postural Profile

Through the questionnaire found that the body's parts of greatest damage according to the sex and sports mode are:

Male: indoor soccer, knee 36%; Football, lumbar spine 50% and knee 40% and basketball, knee 40%

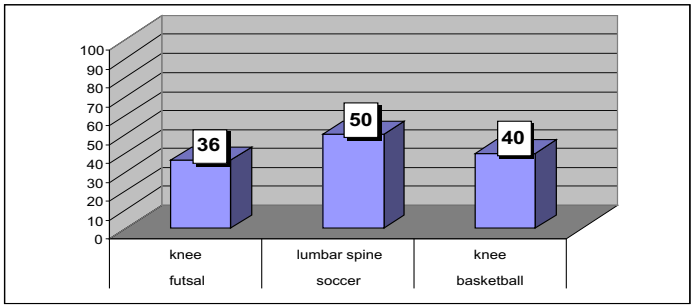

Chart 3 - The Greatest Injury's Places

Female: basketball, ankle 37%; Volleyball, knee 24% and futsal, knee 38%.

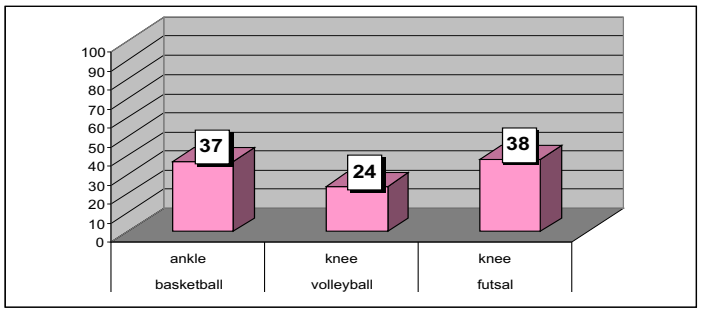

Chart 4 - The Greatest Injury's Places

It is suggested based on these evidences that the Programs of Orthopedic, Traumatologic and about sports Physiotherapy, evidence the prevention, based on lessons of Postural re-education, aimed at articulate's rebalancing and improve the postural habit. The proprioception in track's shape has prevalence to prevent traumatic injuries and improve the muscle and the brain's responses according to the injury's mechanism. The articular rebalancing can be accomplished in activities with objectives of rebalancing the relationship agonist/antagonist as a requirement and sport's specificity. kinetic therapy in the water may be used respecting the training's periodization after competition.

DISCUSSION

Through the analysis was founded out that the ankle was the predominant position aligned to valgus, both in males as in females. A possible explanation for this fact is the blocking of the mechanism of muscular neuron proprioception, caused by the excessive use and inappropriate tennis shoes, which reduces the support of the foot's bones leading them to collapse medially by the ease anatomical under the action of the body weight's discharge, inducing the postural reactions.

The plan foot was found in 52% of male athletes and 71% of female. This is justified in a study by Neto (2004), which reports that the internal rotation of the tibia is manifested as changes resulting from the secondary mechanism of plan foot's compensation. According to Neto (2004), the waist pelvic characterized as a complex support structure for the human body, such as to static as dynamic. According to Martelli (2006), the changes are never primary and the causes are always associated with compensation's mechanisms in processes of stabilizing the lumbar spine. Thus, Neto (2004) adds that the lumbar hyperlordosis found in the both sexes' athletes, and the anteversion of the pelvis, can arise from retraction of the flexor muscles of the hip and knee extensors, which contribute to the formation of the same, unchaining a compensatory mechanism of retraction of the posterior chain after causing thoracic hypercifosis and cervical hyperlordosis.

For the matter of the imbalance's causes in the agonist /antagonist muscles, it is believed to be strongly associated with: the biomechanics of the sport, a deficiency of muscle strength, a range of tone muscular trophy, lateral dominance, among other factors and that the medium and long term may cause acute or chronic injury that will compromise the athlete's performance. All comments made show that the postural reeducation, proprioception and articular rebalancing have great effectiveness in the training's final results, being as prevention and/or treatment (DVIR, 2000).

From the findings, it is suggested that the Programs of Physiotherapy in Sports show prevention with the postural reeducation classes. Souchard, (2006) states that the work of postural reeducation based on placements is based at positions that focus a better articular balance and the correction of respiratory sequence. As Isometric contraction of the major stabilizer muscles and the stretching of the retracted muscle chain looking for the improvement of the postural habit.

The proprioception in shaped of track has prevalence to prevent traumatic injuries and improve the muscle neural responses according to the mechanism of injury. It also enables the verification of the tissues' positions on the elongation of the contraction and speed, influencing the muscle tone, the motor execution, and the cognitive perception somatic. (DENEGAR, 2003). The proprioceptives exercises are intended to improve the balance between the tissues during the movement. Through incentives can be improved responses of the mechanisms for protection and control of the muscular and skeleton system. So, the exercises are determinative about obtaining results and injuries' prevention (DENEGAR, 2003).

The articular rebalancing can be accomplished in activities with the objective of harmonizing the agonist/antagonist relationship as a sport's requirement and specificity (DVIR, 2000).

The kinetic therapy in the water, according to Campion (2000), has as therapeutic effects: the relief of pain and muscle spasms, maintaining or increasing range of joints amplitude, weakened muscles' strengthening and increases in its tolerance for exercises, maintenance and improvement of the balance, coordination and posture. It could thus be used respecting the periodization of training after competition.

CONCLUSION

The Programs of Orthopedic, Traumatologic and about sports Physiotherapy, show the Prevention, based on lessons of Postural rehabilitation, activities of Propriocepcion in shape of track, Articular Balancing according to the requirement and specificity of the sport. The kinetic therapy in the water may be used respecting the periodization of training after competition. It is important to note that this program in Orthopedic, Traumatologic and Sports Physiotherapy is already being applied in FAEFIJA, in agreement with the Department of Municipal Sports from Jacarezinho.

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A PROGRAM ELABORATION OF A PREVENTIVE PHYSIOTERAPY FOR MUNICIPAL SCHOOLS' ATHLETES

ABSTRACT

Evidences show that the growth's impetus in adolescence may predispose children to injuries (MICHELI And MINTZER, 2002). The goal of this work is to suggest a program of Preventive Physiotherapy considering the relationship between injuries and postural changes existing in each sport category. This is a transversal study field, based in a bibliographical survey. Using a questionnaire adapted from Baptista et al (1999) as a tool, it was also held a Physiotherapeutic evaluation. The data was collected and organized in a spreadsheet from Excel 2007. After this analysis data compatible scientific evidences was searched, providing subsidies for the development of a Program of Preventive Physiotherapy. 176 athletes were evaluated, being men: 43 of indoor soccer, 15 of basketball and 73 football; And women: 12 of indoor soccer, 12 of basketball and 21 of volleyball. The postural profile presented by male athletes was: lateral deviation, cervical hyperlordosis, thoracic hypercifosis, lumbar hyperlordosis, knee aligned with hyperextension tendency, knee varus in futsal, valgus in football and basketball, ankle aligned with the trend to valgus, foot plan with aligned tendency. And the women: lateral deviation, normal cervical lordosis, thoracic hypercifosis, lumbar hyperlordosis, knee aligned with valgus tendency and hyperextend, ankle aligned with valgus tendency, foot plan. Places of lesions in males: indoor soccer, knee; Football, lumbar spine and knee and basketball, knee. Female: basketball, ankle; Volleyball, knee and indoor soccer, knee. It is suggested that the Programs of sportive Physiotherapy evidence the preservation with postural reeducation classes aiming at the articular rebalance, the agonist/antagonist relationship and proprioception to prevent injuries and improve the neural muscle responses. Already the kinetic therapy in the water may be used respecting the periodization of training after competition. This program is being done in FAEFIJA, in agreement with the Department of Municipal Sports.

KEYWORDS: Prevention, Postural Changes and injuries**.**

ÉLABORATION D'UN PROGRAMME DE PHYSIOTHÉRAPIE PRÉVENTIVE POUR ATHLÈTES D'ÉCOLES MUNICIPAUX

RÉSUMÉ

Des évidences révèlent que l'élan de croissance de l'adolescence peut predispor les enfants à des blessures

(MICHELI Et MINTZER, 2002). L'objectif de ce travail est suggérer un Programme de Physiothérapie Préventive en considérant la relation entre des blessures et les modifications rapportés avec la position existantes dans chaque modalité du sport. Celui-ci est une étude de champ transversal, basé dans enquête bibliographique. En utilisant un questionnaire approprié de Baptiste et al (1999) comme instrument, aussi a été réalisé l'Évaluation Physiothérapeutique. Les données ont été rassemblées et organisés dans une feuille de calcul de l'Excel 2007. Après cette analyse ce sont cherchées à évidences scientifiques compatibles avec les données, donnant des subventions pour l'élaboration d'un Programme de Physiothérapie Préventive. Ont été évalués 176 athlètes, étant masculins : 43 de football de salon, 73 de football et 15 de basket-ball ; et féminins : 12 de football de salon, 21 de volley-ball et 12 de basket-ball. Le profil rapportés avec la position présenté par les athlètes du sexe masculin a été : détour latéral, hiperlordose cervical, hipercifose thoracique, hiperlordose lombaire, genou aligné avec tendance à la hiperextension, genou échoue dans la football de salon, la valgo dans le football et dans basquete, cheville alignée, avec tendance la valgo, le pied clair avec tendance aligné. Et le féminin : détour latéral, lordose cervical normal, hipercifose thoracique, hiperlordose lombaire, genou aligné, avec tendance à la valgo et à la hyperétendues, à la cheville alignée, avec tendance à la valgo, au pied plain. Lieux de blessures dans le masculin : futsal, genou ; football, colonne lombaire et genou et basket-ball, genou. Féminin : basket-ball, cheville ; volley-ball, genou et football de salon, genou. Il se suggère que les Programmes de Physiothérapie Sportive prouvent la prévention avec des leçons de Rééducation de la position en visant le rééquilibre articuler, la relation agoniste/antagoniste et à perception propre pour deéviter des blessures et améliorer les réponses rapport à neurone et muscles. Déjà la thérapie par le mouvement dans l'eau pourra être utilisée en respecter la périodisation de formation après concurrence. Ce Programme est réalisé dans FAEFIJA, dans accord avec le Département Municipaux de Sports.

MOTS CLES: Prévention. Modifications rapportés la position et Blessures.

ELABORACIÓN DE UN PROGRAMA DE FISIOTERAPIA PREVENTIVA PARA ATLETAS DE ESCUELAS MUNICIPALES

RESUMEN

Evidencias revelan que el ímpetu de crecimiento de la adolescencia puede predisponer a los niños a lesiones (MICHELI y MINTZER, 2002). El objetivo de este trabajo es sugerir un Programa de Fisioterapia Preventiva considerando la relación entre lesiones y alteraciones posturales existentes en cada modalidad deportiva. Este es un estudio de campo transversal, basado en estudio bibliográfico. Utilizando un cuestionario adaptado de Baptista et al (1999) como instrumento, fue también realizada Evaluación Fisioterapéutica. Los datos fueron recogidos y organizados en una planilla de Excel 2007. Después de este análisis se buscaron evidencias científicas compatibles con los datos, dando subsidios para la elaboración de un Programa de Fisioterapia Preventiva. Fueran evaluados 176 atletas, siendo masculinos: 43 de fútbol de salón, 73 de fútbol y 15 de básquetbol; y femeninos: 12 de fútbol de salón, 21 de voleibol y 12 de básquetbol. El perfil postural presentado por los atletas del sexo masculino fue: desvío lateral, hiperlordosis cervical, hipercifosis torácica, hiperlordosis lumbar, rodilla alineada con tendencia a la hiperextensión, rodilla vara en el fútbol de salón, valga en el fútbol y en el básquet, tobillo alineado, con tendencia a valgo, pie plano con tendencia a alineado. Y el femenino: desvío lateral, lordosis cervical normal, hipercifosis torácica, hiperlordosis lumbar, rodilla alineada, con tendencia a la valga e hiperextendida, tobillo alineado, con tendencia a la valgo, pie plano. Locales de lesiones en el masculino: fútbol de salón, rodilla; fútbol, columna lumbar y rodilla y básquetbol, rodilla. Femenino: básquetbol, tobillo; voleibol, rodilla y fútbol de salón, rodilla. Se sugiere que los Programas de Fisioterapia Deportiva evidencien la prevención con clases de Reeducación Postural buscando el reequilibrio articular, la relación agonista/antagonista y la propiocepción para evitar lesiones y mejorar las respuestas mioneurales. La hidrocinesioterapia podrá ser utilizada respetando la frecuencia de entrenamiento después de la competición. Este Programa se está realizando en la FAEFIJA, en convenio con el Departamento Municipal de deportes.

PALABRAS-CLAVE: Prevención, alteraciones posturales y lesiones.

ELABORAÇÃO DE UM PROGRAMA DE FISIOTERAPIA PREVENTIVA PARA ATLETAS DE ESCOLAS MUNICIPAIS

RESUMO

Evidências revelam que o ímpeto de crescimento da adolescência pode predispor as crianças a lesões (MICHELI E MINTZER, 2002). O objetivo deste trabalho é sugerir um Programa de Fisioterapia Preventiva considerando a relação entre lesões e alterações posturais existentes em cada modalidade esportiva. Este é um estudo de campo transversal, embasado em levantamento bibliográfico. Utilizando um questionário adaptado de Baptista et al (1999) como instrumento, foi também realizada Avaliação Fisioterapêutica. Os dados foram coletados e organizados numa planilha do Excel 2007. Após esta análise procuraram-se evidências científicas compatíveis com os dados, dando subsídios para a elaboração de um Programa de Fisioterapia Preventiva. Foram avaliados 176 atletas, sendo masculinos: 43 de futsal, 73 de futebol e 15 de basquetebol; e femininos: 12 de futsal, 21 de vôlei e 12 de basquetebol. O perfil postural apresentado pelos atletas do sexo masculino foi: desvio lateral, hiperlordose cervical, hipercifose torácica, hiperlordose lombar, joelho alinhado com tendência à hiperextensão, joelho varo no futsal, valgo no futebol e no basquete, tornozelo alinhado, com tendência a valgo, pé plano com tendência a alinhado. E o feminino: desvio lateral, lordose cervical normal, hipercifose torácica, hiperlordose lombar, joelho alinhado, com tendência à valgo e hiperextendido, tornozelo alinhado, com tendência à valgo, pé plano. Locais de lesões no masculino: futsal, joelho; futebol, coluna lombar e joelho e basquetebol, joelho. Feminino: basquetebol, tornozelo; voleibol, joelho e futsal, joelho. Sugere-se que os Programas de Fisioterapia Desportiva evidenciem a prevenção com aulas de Reeducação Postural visando o reequilíbrio articular, a relação agonista/antagonista e a propriocepção para evitar lesões e melhorar as respostas mioneurais. Já a hidrocinesioterapia poderá ser utilizada respeitando a periodização de treinamento após competição. Este Programa está sendo realizado na FAEFIJA, em convênio com o Departamento Municipal de Esportes.

PALAVRAS-CHAVE: Prevenção. Alterações posturais e Lesões.