69 - KNEE: COMPARISON OF ANGLE Q BETWEEN SOCCER PLAYERS OF FIELD AND COLLEGES STUDENT.

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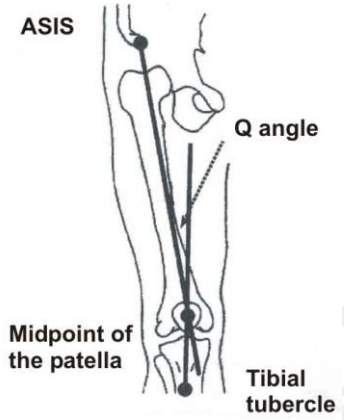


OBJECTIVE

The objective of the research is to compare which of the samples, Football players of Field or Colleges student have greater Angle Q in the knee?

INTRODUCTION

Femoral angle Q is defined by Kuhn, et al (2002), Nester, et al, (2001), Livingston, et al (1999), "and the angle formed in the intersections of Anterior Superior Illiac Spine (A.S.I.S.), the medial point of Patela (PM) and the Tuberosidade of Tíbia (TT)", forming of the perpendicular lines in quadríceps, being measurements in degrees, as we will see in the figure, to follow;

Kuhn, et al (2002); they consider normal values for men in angle Q of 11 16°.

Livingston, et al (1999), tells that "quadríceps with an extreme angle Q in 15-20°, is subject to very great an anatomical risk with great etiologic relation of pathologies in the knee for the angular increase and can be a factor of diagnosis in the case of the syndromes will articulate". In football players the accented use of the expository muscles becomes of application of forces in the joint of the knee a etiologic mechanism of the patelo-femurais syndromes.

The Hahns and Foldspang's et al (1999), "had studied 339 in athlete of 14 the 24 years a average of 3° in angle Q were noticed significantly, what she did not occur in women"; however, we can point out that for these samples it is an affirmation from that if the muscles receives an amount great of rejections that if waste mainly in muscles with bigger number of sarcômeros (increase of the session transversal of the muscle).

Aglietti and Cerulli apud Livingston, et al (1999), "confirms that angles above of 15° for men are daily pay-dispositories the pathologies in the knee". Some authors attribute the muscular atony of tônus in the dominant member with the lesser magnitude of angle Q in comparison with the not dominant member, or either, the muscular increase tônus directly is related with the increase of the angle in Q.

Huberti and Hayes, et al (1984), suggests in its study that the "patelo-femural pressure agglomerates to the increase of angle Q and considers a great etiologic potential as factors of pains in the previous region of the knee".

Heegard, et al (1995), "supports the theory of those forces analyzed in patela show an indicative of stress that typically it takes the pathologies in the knee". Biomechanics, movements of the joint of the knees generate forces that competed the structures as: tendons, ligaments, capsule to articulate.

The main function of patela is to stabilize the forces produced in quadríceps in relation to the movement of flexo/extensão of the knee. "an abnormal pressure in the patelo-femural junction directly is correlated with the degeneration of the cartilage to articulate of the knee. An instability cause a limitation of the primary works in the compression in the cartilage to articulate "as Heegard, et al (1995).

Pains in this joint are constant in football players for the high intensity of the physical work. According to Kuhn, et al (2002), "problems caused in the knee are resulted of internal extreme torsions with the foot proswims, perhaps, for genu valgo or thigh pole.

A great rotation of the tibia transmits the resultant of abnormal forces in the joint of the knee ". Heegard, et al (1995), says that the "abnormal rotation of the tibia distributes of irregular form the forces in the joint of the knee called vectors of force of quadríceps and that cause the laterally of patela". "the hiperpronation of the foot contributes in one stress in the crossed ligament previous (ACL), being susceptible the traumas".

"In virtue of recidivisms non-happing it has a lesser sharpness in mecanoreceptores that activate the muscle, tendons, ligaments; in dynamic mechanisms to articulate in accordance with of balance "Kuhn, et al (2002).

In Soccer players the knee torsions constant must to the contact in the sport, to the changeable type of field, the climatic conditions. Kuhn, et al (2002), relates that "the rotation of the tibia in relation to fêmur cause a reduction in the angle in Q", however, in football players is evidenced due to the mechanical component fort in expositories, for the insertion of the expositories in the tibia.

MATERIALS

For this study were used the following material: digital camera of the Sony mark adhesive Dsp-p32 model, plummet, markers.

METHODS

The characteristic of the quantitative research and, with explorer character, attributing to inherencies analyses in the Excel program and statisticians in program SPSS, using test it for independent 0 variable. The tests had been carried through in the following way: the athletes with its markers in Anterior Superior Spine Illiac (A.S.I.S.), the mid point of the Patela and the Tubercle of the Tibia", assuming the condition proposal for Nester, et al, (2001;) to attribute in this method error of 1 5 mm (1 5°, respectively), for the three points.

A foot support with 10 cm of width, pendulum to the side of the samples to get a perpendicular straight line was used and to approach it as straight point. The photos had been taken off with a deep white and had been focused inferiorly to the nipples of the citizens.

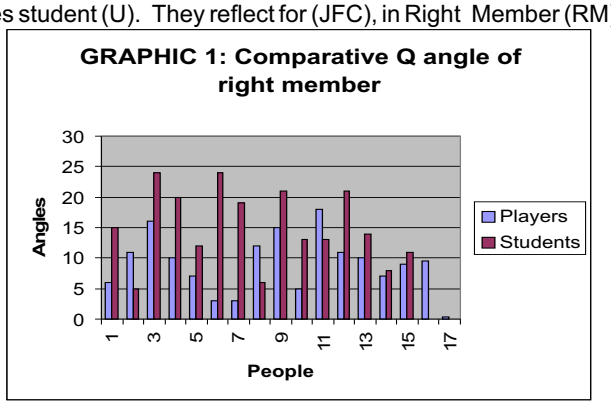
For this research the sample was of 15 Football players of Field of the Junior Category and 15 Colleges student with the same ages of 18 the 21.

RESULTS

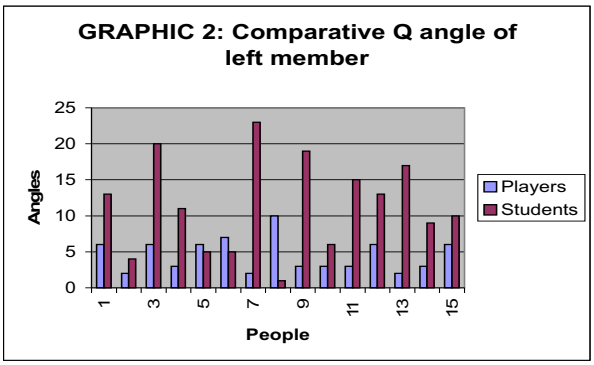
In this research the inferences data had been analyzed in the Excel program and statistical program SPSS, with test-T for values of the independent 0 variable of groups of Football players of Field of the Category Junior and Colleges student in the ages of 18-21 years. The 0 variable are presented in accordance with the member of the citizens.

For it analyzes Inferential of Angles Q we will use Media (m) and Shunting line Standard (Dp), of the Football

players of Field (JFC) and Colleges student (U). They reflect for (JFC), in Right Member (RM), the results are (M=9,53 and Dp = 0,29).



In the Left Member (ME) the results are (M=4,53 and Dp=0,80); for (u) in (MD), the results are (M=15,0 and Dp=-0,07), and in (ME), the results are (M=11,4 and Dp=0,18).



In test-T for independent 0 variable in the (u) and the statistical results comparison (JFC) we will see to follow: For (MD) between the 0 variable we will analyze the Force and the Significance (P<0,01), being the results in (F=2,22 and P<0,14), that they do not reflect significance between the groups; no longer (ME) the data show to the significance and the high force (F=12,7 and P<0,01).

The values analyzed for 0 variable independents do not relate significance in (ME), already for values of (MD) of (JFC) in comparison with (u) assume a significance and one high force, that represents high values for (JFC) and (u) in the comparison.

DISCUSSION

The presented results demonstrate one strong significance in (ME) for (JFC) and the (u) what it corroborates with the findings of other authors. Livingston, et al (1999), "concluded in its study that has differences in the magnitude in the laterally of the members and that the same ones do not influence in Angle Q, what produces a predisposition the previous pathologies of the knee", common in athlete in field soccer.

According to Kerns, et al (2001), relates that "the use of the dominant member in relation to the not dominant cause a hipertrofic, differentiating Angle Q" agreeing to Aglliette and Curelli apud Livingston, et al (1999), what it was reflected in the results of this work. "an excellent functioning of the stabilizers of the knee and a basic factor for the prevention of problems ligaments", in accordance with Mercer, et al, (2003).

The stabilizers of the knee are first the ligaments and the tendons, second who executes this function is the anteroposterior muscular groups. Noyes apud Mercer, et al, (2003), "in football players 80% of the problems of the Crossed Ligament Previous occur in its majority in extension", that it mentions the structures that in this state of tension are more susceptible to these events.

Mercer, et al, (1998), tells that "the physical conditioning reflects in the conditions neuromuscular during the flexion mechanism and extension of the knee decaying the incidence of pathologies".

Posterior studies must be carried through to correlate influence it of the training conditions as the bilateral perimeters of the inferior members correlating with Angle Q.

FINAL CONSIDERATIONS

Study showed that the anti-symmetrical inferior members are factors daily pay-depositories to the increase of the angle in Q that and attributes the etiology in pathologies of the knee.

The physical training of the players must be composed of preventive programs, mainly in joints, as the knee; the way that reestablishes the components muscular, to articulate, proprioception, in levels that do not bring risks the integrity of the athletes for the constants stresses mechanics of the modality.

The mechanisms that occur injuries are normally in "flexo-extension in accordance with Escamilla, et al (2001), Mercer, et al, (2003), Noyes, et al, (1983), and hapinng in a great percentile of 80 90% the crossed ligament previous and common the medial menisco" in athlete of this sportive category.

The study of Scheitezer and While apud Kuhn, et al (2002), "evidences the physiological changes due the induction of an abnormal biomechanics", physiology that can intervene with the osteo-muscular processes of the football players of field.

The pathologies caused for the increase of Angle Q are the syndromes femuro-patelares; the results had shown that it has a significance measured between the groups and for a new study this can be an attribution correlating with the unilateral hipertrofic.

Answering the question of the objective where which of the groups would have a bigger angle in Q? It has one high significance enters the predominant groups in Left Members of the samples what the factors can be attributed as the physical training; e in relates them that the results estimate that no specific accompaniment on the part of one has equipped to multidiscipline (physical coach, physiotherapist and nutritionist), have not been carried through or it has not demonstrated

effectiveness for these analyzed factors.

Another way to survey intrinsecamente correlating the data with Angle Q is the Densitömetria Óssea, that they corroborate with the citation of Kuhn, et al (2002), that they tell "abnormal dynamic in the bones of course cause a hipertrofic with increase of the values of these structures", in the way that stress it mechanical becomes the bones densest, that can be measured by examinations as the Densitometria Óssea in study that will be carried through later by the proper author.

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K**NEE: COMPARISON OF ANGLE Q BETWEEN SOCCER PLAYERS OF FIELD AND COLLEGES STUDENT.**

ABSTRACT

The objective of the research is to compare which of the samples, Soccer players of Field or Colleges student have greater Angle Q in the knee? Femural angle Q is defined by Kuhn, et al (2002), Nester, et al, (2001), Livingston, et al (1999), "and the angle formed in the intersections of Anterior Superior Illiac Spine (A.S.I.S.), the medial point of Patela (PM) and the Tubercle of the Tibia (TT) ", forming two perpendicular lines in quadríceps. According to Livingston, et al, (1999), "the angle in Q above and the 15 20 degrees this directly associated with patelo-femurais syndromes constantly attack in football players for extrinsic and intrinsic factors of the modality". The research and of quantitative characteristic with sampling of 30 individuals, being, 15 Soccer players of Field and 15 Colleges student. The used methodology was the gauging with camera assuming a methodological error of 1 the 5 mm second metanálise of Nester, et al, (2001). The presented results demonstrate one strong significance in (ME) for (JFC) e (U), with high force (F=12,7) and significance assumed for (P<0,01), with what it corroborates with the findings of other authors. Answering the question of the objective, one high significance between the groups is predominant in Left Members possibly for the asymmetry of the Members and other factors as: a precarious accompaniment of the team to multidiscipline (coach physicist, physiotherapist and nutritionist), that he can not be being carried through or has not demonstrated effectiveness in the analyzed factors. A form to correlate another data with Angle Q is the Densitömetria Óssea, that they corroborate with the citation of Kuhn, et al (2002), that they tell "abnormal dynamic in the bones of course cause a hipertrofic with increase of the values of these structures", the way that stress it mechanical becomes the bones densest and can later be measured by examinations of Óssea Density in study of the author.

Key Words: Angle Q, Soccer, Pathologies

GENOU: COMPARAISON DE I´ANGLE Q LES JOUEURS DE FOOTBALL DU CHAMP ET L´ETUDIANT D´UNIVERSITÉS

LE RESUMÉ

L'objectif de la recherche est de comparer qui des échantillons, des joueurs de football d'étudiant de champ ou d'universités a un plus grand angle Q dans le genou? L'angle Q de Femural est défini par Kuhn, et autres (2002), Nester, et autres, (2001), Livingston, et autres (1999), "et l'angle formé dans les intersections de l'épine supérieure antérieure Illiac (A.s.i.s.), le mi point du Patela et le tubercule du tibia", formant deux lignes perpendiculaires dans les quadríceps. Selon Livingston, et autres, (1999), "l'angle dans Q ci-dessus et les 15 20 degrés ce directement lié à l'attaque de syndromes de patelo-femurais constamment dans des joueurs de football pour des facteurs extrinsèques et intrinsèques de la modalité". La recherche et de la caractéristique quantitative avec le prélèvement de 30 individus, être, 15 joueurs de football d'étudiant de champ et de 15 universités. La méthodologie utilisée était mesurer avec l'appareil-photo assumant une erreur méthodologique de 1 le metanálise de 5 millimètres deuxième de Nester, et autres, (2001). Les résultats présentés démontrent une signification forte dedans (JE) pour (JFC) e (u), avec la force élevée (F=12,7) et la signification assumée pour (P<0,01), avec ce qu'il corrobore avec les résultats d'autres auteurs. Répondant à la question de l'objectif, une signification élevée entre les groupes est prédominante dans les membres gauches probablement pour l'asymétrie des membres et d'autres facteurs comme: un accompagnement périlleux de l'équipe au multidiscipline (physicien, physiothérapeute et nutritionniste d'entraîneur), qu'il ne peut pas être exécuté ou n'a pas démontré l'efficacité dans les facteurs analysés. Une forme pour corréler des autres données avec l'angle Q est le Densitömetria Óssea, cela qu'ils corroborent avec la citation de Kuhn, et autres (2002), qu'ils disent "dynamique anormal dans la cause d'os naturellement à un hipertrofic avec l'augmentation des valeurs de ces structures", la manière qui la soulignent mécanique devient les os les plus denses et peut plus tard être mesuré par des examens de densité de Óssea dans l'étude de l'auteur.

Mots clés: Angle Q, Le Football, Pathologies.

RODILLA: COMPARACIÓN DEL ÁNGULO Q ENTRE LOS JUGADORES DEL FÚTBOL DEL CAMPO Y DEL ESTUDIANTE DE LAS UNIVERSIDADES.

ABSTRACTO

El objetivo de la investigación es comparar que de las muestras, los jugadores del balompié del estudiante del campo o de las universidades tienen mayor ángulo Q en la rodilla? El ángulo Q de Femural es definido por Kuhn, et el al (2002), Nester, et el al, (2001), Livingston, et el al (1999), "y el ángulo formado en las intersecciones de la espina dorsal superior anterior Illiac (A.S.I.S.), el punto mediados de del Patela y el tubérculo de la tibia", formando dos líneas perpendiculares en quadríceps. Según Livingston, et el al, (1999), "el ángulo en Q arriba y los 15 20 grados este asociado directamente a ataque de los síndromes de los patelo-femurais constantemente en los jugadores del balompié para los factores extrínsecos e intrínsecos de la modalidad". La investigación y de la característica cuantitativa con el muestreo de 30 individuos, estar, 15 jugadores del balompié del estudiante del campo y de 15 universidades. La metodología usada era el calibrar con la cámara fotográfica si se asume que un error metodológico de 1 el metanálise de 5 milímetros segundos de Nester, et al, (2001). Los actuales resultados demuestran una significación fuerte adentro (YO) para (JFC) e (u), con la alta fuerza (F=12,7) y la significación asumida para (P<0,01), con lo que corrobora con los resultados de otros autores. Contestando a la cuestión del objetivo, una alta significación entre los grupos es predominante en miembros izquierdos posiblemente para la asimetría de los miembros y de otros factores como: un acompañamiento precario del equipo al multidiscipline (físico, fisioterapeuta y nutricionista del coche), que él no puede ser llevado a través ni ha demostrado eficacia en los factores analizados. Una forma para correlacionar otros datos con el ángulo Q es el Densitömetria Óssea, eso que corroboran con la citación de Kuhn, et el al (2002), que dicen "dinámico anormal en la causa de los huesos por supuesto a hipertrofic con el aumento de los valores de estas estructuras", la manera que la tensiona mecánica se convierte en los huesos más densos y se puede medir más adelante por las examinaciones de la densidad de Óssea en el estudio del autor.

Palabras claves: Ángulo Q, Fútbol, Patologías.

JOELHO: COMPARAÇÃO DO ÂNGULO Q ENTRE JOGADORES DE FUTEBOL DE CAMPO E UNIVERSITÁRIOS.

RESUMO

O objetivo da pesquisa é de comparar qual das amostras, Jogadores de Futebol de Campo ou Universitários tem maior Ângulo Q no joelho? O ângulo Q femural é definido por Kuhn, et al (2002), Nester, et al, (2001), Livingston, et al (1999), ”e o ângulo formado nas interseções da Espinha Ilíaca Antero Superior (E.I.A.S.), o ponto medial da Patela e a Tuberosidade da Tíbia”, formando duas linhas perpendiculares no quadríceps. Segundo Livingston, et al, (1999), “a angulação em Q acima e 15 a 20 graus esta diretamente associada com síndromes patelo-femurais constantemente acometida em jogadores de futebol por fatores extrínsecos e intrínsecos da modalidade”. A pesquisa é de característica quantitativa com amostragem de 30 indivíduos, sendo, 15 Jogadores de Futebol de Campo e 15 Universitários. A metodologia utilizada foi a aferição com câmera fotográfica assumindo um erro metodológico de 1 a 5 mm segundo metanálise de Nester, et al, (2001). Os resultados apresentados demonstram uma forte significância no (ME) para (JFC) e (U), com alta força (F=12,7) e significância assumida para (P<0,01), com o que corrobora com os achados de outros autores. Respondendo a pergunta do objetivo, uma alta significância entre os grupos é predominante em Membros Esquerdos possivelmente pela assimetria dos Membros e outros fatores como: um precário acompanhamento da equipe multidisciplinar (preparador físico, fisioterapeuta e nutricionista), que pode não estar sendo realizado ou não tem demonstrado eficácia nos fatores analisados. Uma forma de correlacionar outro dado com o Ângulo Q é a Densitömetria Óssea, que corroboram com a citação de Kuhn, et al (2002), que relatam “dinâmicas anormais nos ossos causam naturalmente uma hipertrofia com aumento dos valores dessas estruturas”, a maneira que o estresse mecânico torna os ossos mais densos e podem ser medidos por exames de Densidade Óssea em estudo posteriormente do autor.

Palavras chaves: Futebol, Ângulo Q e Patologias.