

Analysis Study To The Joint Pain Of Knee With Indication Of Loading Mechanics For Players

The researchers :

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1-Introduction:

That the overlap between sports science and other sciences led to the evolution of the concept of sports medicine in sports. Which reflected positively on the progress of the level of health and physical individuals when athletes. And analytical study of the joints and the shed load from one study that aims to build a structure in accordance with the detailed aspects of health, construction, which aims to raise the level of sporting achievement.

The number of injuries in the failed of sport ,it increases ,day by day . The cause is giving back to the problem in the component of loading , the many from the players leave the sport in early time The knee joint is one of the most important joints which is subject to loads as a result of the effort, continuous and does not suit the strength of joints with muscle from the loads, therefore, lies the importance of research in the study of muscle on the knee joint of loads as a result of common errors when jumping and landing are not , since more the sample was suffering from pain in the right knee joint as a result of the concentration of effort in this joint force, and as a result of the descent of the right foot first and then the left.

The knee has been shown to be the most common site of jumping injuries and which pain Syndrome it has been shown to be the most common diagnosis in the knee.

2- The aim of research :

Analysis of loading on the knee joint with indication of loading mechanics to identify about the natural of pain for having players.

3-The hypothesis of research :

There is relation between the pain in the knee joint and the mechanics of loading.

4- Anatomical overview of the knee joint:

The knee joint of the top joints of the body and has a great importance in the walk and bear weight, and supports the muscles and ligaments of the joint cartilage and contribute to the protection of the joint damage that may occur to him during sports and various activities. And anterior cruciate ligament is one of the supporting ligaments of the knee where he works on detailed balance and prevent sliding tibia (trachea) to the front, as show in the figure(1).



Figure (1) showing the anatomy of knee joint

Of the most important causes of injury is the sport of various kinds such as mediator and skiing, jealousy He spoke of injury as a result of abnormal movement resulting in strong resistance to ligaments and ligaments usually affected by the adverse movement by the player, as it occurs as a result of external shock or impose it directly. When proving (implants) foot to land, and followed by spin strong due to change in the direction of the body very quickly, speaking of this infection as is the case in the movement of foot during the mediator because of the physical contact between players,

when the injury usually hear the person's voice crackle with high feeling that knee is not a constant and precarious.

5- Methodology:

Used the descriptive approach is adequate to the nature of action research, as has been Uses (10) of injured players Palm knee right, and the reconstruction of the sample ranges between (24-26) years. Were calculated as an analysis of each player injured in the third attempt to jump as he was required to each player to jump three times, each separated by time (30 seconds) for the purpose of reducing the overhead hanging whether in the case of continuity.

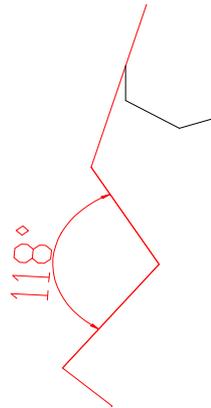
Analysis was conducted in accordance with custom software to calculate the amount of weight hanging from the upper parts of the body for the knee joint, and after he is treated as a private in the equation we get the amount of force inflicted in the knee joint and by follow:

$$\Sigma F=0$$

$$= W_{\text{head}} + W_{\text{trunk}} + W_{\text{Arms}} + W_{\text{legs}} \cdot$$

The benefit from the above equation to calculate the strength of the detailed terms of the moments of power about the knee joint.

And so as the figure ,its following:



Figure(2)show the way of analysis

مجلة القادسية لعلوم التربية الرياضية - المجلد ١١ العدد ١
 عدد خاص ببحوث المؤتمر العلمي الثاني في البيوميكانيك المنعقد في
 كلية التربية الرياضية جامعة القادسية للفترة ٢٥-٢٦-١٢-٢٠١٠

6- Result:

Tab(1)Knee pain intensity during the jumping and dropping

Variables	Unite of measurement	Mean	Std. Deviation	N
loadin.on.the.knee.joint.jump	KN	1868.1400	183.02695	10
Angle	Degree	118.1000	4.58136	10

Tab(2)shown the relation between the angle and loadin.on.the.knee.joint.drop

Variables		loadin.on.the.knee.joint.jump	Angle
loadin.on.the.knee.joint.drop	Pearson Correlation		-0.467-
	Sig. (2-tailed)		0.174
	N	10.000	10
Angle	Pearson Correlation	-0.467-	
	Sig. (2-tailed)	0.174	
	N	10	

Through what has been presented in the table (2) it becomes apparent that correlation is weak between the angle of the knee right to the moment of contact of the feet with the ground as the value (-0.467 and this reflects the increase resulting from repeated jumping and landing as a result of the different angles of the muscle work and as a result of the work of compensatory of the muscles resulting in

muscle weakness and pain and increase the proportion of the tastiest results in increased in the injured knee joint pain and increase continuously.

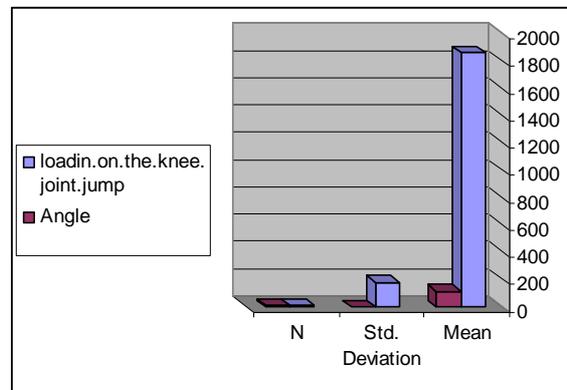
7- Discussion:

The weakness of the ligaments and muscles surrounding the knee joint right led to increased pain in the knee joint as a result of the instability of the joint, which has had a significant impact in increasing pain at the moment there is a focal point for the right foot with the ground.

The researchers also observed that there is an increase in the amount of bending in the knee joint at landing the players, which increases the amount of force inflicted on the knee joint and thus increase with him not to stabilize the joint and as a result of that pain occurs.

So the researchers focused this study of loads in the knee joint was sworn in as provided focal approved by the players of the moment of landing, added to the above and according to what has been analyzed that there is a pressure force added to the pressure of weight hanging on the knee joint, which is placing flexors and extensor of the knee joint.

So sad that there is proper preparation of the knee sports to be able to continue to remember the game without injuries.



Figure(3) show the mean and Std.

8-Conclusions

- 1 - that dealing with the pain in the beginning it is necessary to protect athletes from double knee injury and thus its distance from the exercise of its activity.
- 2 - not too much bending at the knee when landing after jumping.

9-Recommendation:

- 1- Sets the drills to development the muscles ,which are moving the joint of knee .
- 2- Sets ,guidelines to the mechanics of performance in each games.

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