An Analytical Study of Deviations of the Foot and the Way to Put it While Walking Using the Force Sensor

Wissam Shallal Mohamed[1], Basem Naji Al-Fatlawi[2], Israalaffta Salem[3], Hayder Naji Habash Alshawi[4]

[1]Assistant Prof., University of Al-Muthanna/Faculty of Physical Education and Sports Sciences/IRAQ, [2]Assistant Prof., University of Kufa/Faculty of Physical Education and Sports Sciences/IRAQ, [3]Assistant Lecturer, [4]Prof., University of Kufa/Faculty of Education for Girls/Department of Physical Education and Sports Sciences/IRAQ

Abstract

The importance of the research lies in knowing the deviations of the foot from the position of the gait and the extent of the relationship of these deviations and the conditions in the pain that occur at the top and bottom of the back, as the method of placing the foot on the ground and areas of strength centring is important and affects the human skeleton, especially the areas of the spine above and below the back, As for the research problem, it was represented by following and informing the researchers. Many people suffer from the pain that arises in the areas of the back. As a specialist in this field, the researchers decided to study and analyze the variables of a force-sensitive device for a sample of students from the College of Basic Education, if this device is through the results that It extracts it can contribute to the knowledge of the many problems that these individuals suffer from at the back level. The research aimed to identify the areas of strength and foot deviations through the force sensor in the research sample, where the researchers used the descriptive method in the survey method as the research community identified the students of the College of Basic Education At the University of Kufa, who are (170) students, and the researchers chose a sample of (20) students who suffer from back pain, and after the presentation and discussion of the results came the most important conclusions The results showed that the research sample rested while walking on the outer part of the foot, and the results showed that the rest of the strength areas of the force were uneven and few.

Keywords: *Foot deflections, the force sensor; analytical studies; back pain.*

Introduction

The importance of the research lies in the possibility of exploiting and benefiting from lactic acid during training in the speed of transfer of information to the brain because the presence of this substance in the body leads to the release of certain hormones that help in the speed of information transfer to the brain in knowing the deviations of the foot from the position of walking and the relationship of these deviations and conditions in the pain that It occurs at the top and bottom of the back, as the way to place the foot on the ground and the areas of strength attachment is important and affects the human skeleton, especially the areas of the spine above and below the back,(1) and the research problem was that the current scientific progress depends on techniques and modern method when applied in various aspects And the use of modern scientific devices,(2) in order to access the scientific facts that serve this progress, therefore,(3) through the follow-up and briefing of researchers, there were many people who suffer from pain that arises in the areas of the back and as a specialist in this field,(4) the researchers decided to study and analyze the variables of a device that feels the strength of a sample Of the students of the College of Basic Education,(5) if this device, through the results it extracts, can contribute to knowing the many problems that it suffers from. Individual loyalty at the level of the back and the research aimed to identify

Corresponding Author:
Hayder Naji Habash Alshawi
Prof., University of Kufa/Faculty of Education for Girls/Department of Physical Education and Sports Sciences/IRAQ
e-mail: haydarn.alshawi@uokufa.edu.iq

areas of strength and foot deviations through the force sensor in the research sample.

Practical Part: The researchers used the descriptive method in the survey method on the students of the College of Basic Education at the University of Kufa, who are (170) students, and the researchers chose a sample consisting of (20) students who suffer from back pain.

Field Research Procedures

Exploratory Experience: The researchers conducted the exploratory experiment 12/20/2016 at ten o'clock in the morning on a group of students whose number reached (3) students outside the original sample in the College of Basic Education and were aimed at identifying work obstacles to avoid them in the main experiment, because "the exploratory experiment procedures lead to Avoid shortcomings, specifying the location, time and duration of the experiment. "() Through the exploratory experiment, the following observations were identified:

The validity and working of the Dynafoot device.

The extent of providing the necessary equipment and tools.

- The adequacy of the number of assistant team members[6] and its role in performing its duties correctly.

Main Experience: The main experiment was conducted 1/5/2017 at ten o'clock in the morning in the College of Basic Education at the University of Kufa, where a device (Dynafoot) was used to extract its variables from the areas of strength and leg deviations.

Strength sensor (Dynafoot)[7]: A system for measuring force changes on the ground during each running step, which is made up of four parts that are the data delivery base (a foot pedal that is placed in the shoe with a wired connection to the force calculator that connects to the leg of the laboratory) and the signal receiver device connects with the laptop and receives the signal After 20 meters for closed halls and 10 meters for outdoor playgrounds, the system operates after placing the steps sensor in the player's laboratory shoe and fixing the conveyor device to point on his leg and entering data about the player's age, length, weight, and gender,[8] and the device measures the highest strength, lowest strength, power distribution areas in the foot, and foot deviations And other variables[9]

Statistical Means: To identify the results of the study, the researchers used the Excel system to extract the following statistical method:

1. Arithmetic mean.
2. Standard deviation.

Presentation, analysis and discussion of results:

Table (1): Shows the Arithmetic mean and Standard deviation

	Variants	Unit of measurement	Mean	Standard deviation
1	The total force of the right leg	Newton	129.33	199.85
2	The total force of the left leg	Newton	116.17	23.913
3	The strength focal points of the right leg of the outer part of the foot	Newton	49.2	11.1
4	The strength focal points of the right leg of the inner part of the foot	Newton	22.15	5.55
5	Focal points of strength for the right leg of the instep	Newton	25.11	3.11
6	Focal points of strength for the right leg of the heel	Newton	31.03	4.51
7	The strength focal points of the left leg of the outer part of the foot	Newton	13.01	5.33
8	Right-fulcrum areas of the right leg of the inner part of the foot	Newton	44.4	8.41
9	Strength focal points for the left leg of the instep	Newton	15.22	5.21
10	Strength focal points for the left leg of the heel	Newton	18.2	3.12
11	Deflection of the right foot out	degree	7	0.5
12	Deflection of the left foot out	degree	2	0.3

Presenting, analyzing and discussing the results of the variables of the (Dina foot) device.

From Table (1), and through the results that have emerged, it is clear that the research sample was anchored while walking on the outer part of the right foot and also the deviation of the right foot to the outside side, and this action leads to the birth of the mother in the back at the sample since the force is supposed to be centred in the middle The foot because the skeleton is an interconnected structure and any defect in one of its parts leads to pain and these pain due to the imbalance of this structure and the shedding of force in its correct place.

As for the left foot, most of the strength was concentrated in the inner part of the foot, due to the concentration of force in the right foot in the outer part, that is, it caused a malfunction in the position of the force, which led to its gathering in the inner part of the foot, and this resulted in a deviation of the foot by (2) degrees, which is less than the right foot, which It deviated by (7) degrees.

From the previous results, it becomes clear to the researcher that the basis of the pain experienced by the students is in the way of putting the foot on the ground and getting used to the wrong way of walking from a young age, which leads to an imbalance of the skeleton and an imbalance in one of its parts, which causes the pain.[10]

Conclusion

1. The results showed that the research sample rested while walking on the outside of the foot.
2. The results showed that the remaining areas of the force's focus were mixed and few.
3. The results showed that the degree of right foot deflection was great.

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both MOH and MOHSER in Iraq.

Conflict of Interest: Non

Funding: Self-funding

References

1. Al-Mashhad RAA. The Impact of the Plan and PDEODE Strategies in Developing Awareness of Cognitive Processes and Reducing Psychological Pollution Among Students of the Faculty of Physical Education and Sports Sciences. 2018;928–35.
2. Alsayigh HA, Athab NA, Firas M. Journal of Global Pharma Technology the Study of Electrical Activity of the Triceps Brachia Muscle according to the Chemical Changes of Water Loss during Spike in Volleyball. 2017;57–62.
3. Alsayigh HA, Athab NA. The Study of Rectus Femoris Activity after Knee Joint Rehabilitation. 2016;9(9):360–5.
4. Abendroth Mark, Golzy John B, O'Connor, Eileen A. Self-Created YouTube Recordings of Microteachings: Their Effects upon Candidates' Readiness for Teaching and Instructors' ssessment". Journal of Educational Technology Systems. 2011: 40 (2):141–159.
5. Aqeel Yahya Hashim Abdulaziz, Hayder Naji Habash Alshawi, Asmaa Hazaim Mohammed: The Effect of the Micro -Teaching Method on the Physiological Level of Testosterone and Learning the Most Important Basic Skills in Fencing, Journal of Global Pharma Technology. 2017; 08(9):153-157
6. Hasan Saleh Mahdi AL-Okbi, Hayder Naji Habash Alshawi, Zainab Najeh Hassan: Emotional arousal and it's correlative with an enzyme (LDH) and the performance of some offensive skills compound for female students in basketball, Journal of Global Pharma Technology. 2017; 09(9):1236-210
7. Hayder Naji Habash Alshawi, Shurooq Hadi Saeed : The Relationship of Emotional Arousal with the Level of Acetyl Cholinesterase and Lactic Acid in Young Basketball Players, Journal of Global Pharma Technology. 2017; 10(9):335-338
8. Hayder Naji Habash Alshawi, Shurooq Hadi Saeed: The Relationship of Emotional Arousal with the Level of Acetyl Cholinesterase and Lactic Acid in Young Basketball Players, Journal of Global Pharma Technology. 2017; 10(9):335-338
9. Hayder Naji Habash Alshawi, Zainab Abdulhasan Abdulsada : The relationship of mental fatigue (FLIM) with the level of hormone cortisone and the performance of running (100) meters for young players, Journal of Global Pharma Technology. 2017; 09(9):196-200.
10. Haytham Ali Alsayigh, Nabeel Abdulkadhim Athab. The Study of Rectus Femoris Activity after Knee Joint Rehabilitation, International Journal of Pharm Tech Research, 2016: 9(9):360-365, .