

# OPPONENT'S REPORT

Author of thesis: **Mgr. Christos POLYZOS**

Thesis title: **The Biomechanical Reflexion on Moderate Idiopathic Scoliosis in Gait Cycle of Young Adults**

Opponent: Doc. PaedDr. Dagmar Pavlů, CSc..

The dissertation presented on the subject of *“The Biomechanical Reflexion on Moderate Idiopathic Scoliosis in Gait Cycle of Young Adults”* has been prepared on 72 pages of text using 73 literature and other sources and incorporating 3 pages of appendices. The author of the work has divided it into eight basic section - in the first he introduces theoretical aspects of walking, in the second theoretical comments on scoliosis, in the third section he deals with theoretical aspects of kinematics and the kinematics of the joint, the fourth section is entitled Discussion - Hypothesis, the fifth section is devoted to practical approaches to kinematic analysis, the sixth summarises the results. The penultimate and final sections are then discussion and conclusion.

## **Choice of topic, Aims of the work**

The principal aim of the work was to conduct kinematic and kinesiological analyses of the lower limbs in individuals with idiopathic scoliosis during walking and comparison of the results with a healthy population.

Idiopathic scoliosis is a very widespread problem of the locomotory system, but in view of its seriousness it can also have a negative impact on other bodily functions, and not least the presence of scoliosis can also affect the quality of life of an individual. It is precisely because of the gravity of the illness and because so far not all aspects of this illness have adequately research that I consider the subject chosen to be very topical and its resolution to be beneficial.

## **Methodology, definition of aims and hypotheses, experimental group**

A single basic aim is set out in Chapter 4.2; this can be accepted. This Chapter also defines a single hypothesis, the formulation of which I do not however regard as particularly felicitous.

The definition given, rather than being a hypothesis, comes across as a very generally pitched research question.

I would assume that in such a work the hypothesis would be clearly defined and would include the assumptions on the basis of which it was formulated.

The methodological approaches are written down in a very brief way, but one can state that the description is transparent. The characterisation of probands can also be accepted, even if some of the data on probands, for example such as sports activity and previous treatment, should also be mentioned. On his choice of probands the author gives only age and the angle in scoliosis. It is also debatable whether it is appropriate to combine a group of women and men. The description of the apparatus is characterised by its extreme brevity, which is a negative aspect for that matter a basic characteristic of the whole work.

### **Results and Discussion**

Through his investigation the author has arrived at interesting results. The chapters in which the results are presented are written in a very confused manner, the text is interspersed with tables and graphs which are not always adequately annotated. The methods used by the author to process his results are however acceptable.

The author has prepared his discussion on only five pages. In view of the topic selected and the results obtained, this chapter was deserving of greater attention. The discussion is not bad as far as content is concerned, but in view of the topic being treated, was deserving of greater scope.

### **Structure of the work and formal aspects**

The dissertation does contain all the parts which a dissertation should contain, but their ordering is not entirely logical nor clear, which causes some problems when reading the material submitted. Similarly, I do not regard the choice of names for the chapters as entirely felicitous.

The very short introduction in six lines is given before the contents, which are then followed by the theoretical part of the work. In the final passages there then follows a discussion on the hypotheses, where the aim of the work and its methods are introduced briefly. The summary

is also put in at the end of the work, which is not typical practice. A list of abbreviations would have provided greater clarity.

It is a pity that in a work which for me was interesting and beneficial, insufficient attention was paid to formal aspects. There are a number of typing errors in the text, which one might ascribe in part to the fact that the author's mother tongue is not English. A lack of clarity is caused by the unusually dense line spacing, which moreover is not the same throughout, together with a variety of fonts used, failure to justify the text properly, as well as adjustment of the text only to the middle of the page, in addition to confused headings, none of this should occur in a dissertation.

Page 44: It is stated that all the probands signed informed consent, but this is missing from the appendices, as is the decision of the ethics committee. I make the assumption that the student does have the ethics committee's agreement and has forgotten to include it. It is therefore essential that it be added to the work.

### **Contribution of the work**

In spite of the aforementioned comments, the work meets its assigned basic aim. One may regard the results obtained as another small step towards clarifying the serious issues of idiopathic scoliosis.

### **Questions for viva voce:**

1. In your conclusion you state that the results you have obtained may be useful in the assessment and therapy of gait in young persons with idiopathic scoliosis. Please give specific examples for this statement.
2. Talk about the differences and similarities of your findings between the men and women in your experimental group.
3. State whether you have determined if any of the probands was active in sports. If yes, what were these sports activities, at what level of proficiency were they conducted and also for how long did the individuals in question do these sports?

**Conclusion:**

In spite of the aforementioned comments the dissertation of Mgr Christos Polyzos meets all the basic criteria which a dissertation must satisfy and I therefore **recommend** his work to the Committee for the Defence of Dissertations to be **received for a viva voce defence**.

In Prague, 23. April 2012

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