THE EFFECT OF HANDLE BAR HEIGHT ON LOW BACK PAIN IN CYCLISTS DURING SPINNING®

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, in partial fulfilment of the requirements for the degree

of

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Declaration

I, Kim Modlin declare that this research report is my own work. It is being submitted for the degree of Master of Science in Physiotherapy, in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

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……..day of……., 2004

In honour of my parents

Denise and Martin Modlin

Abstract

A study was conducted to determine the optimum position of the handlebar on the Johnny G. Spinning® bicycle to reduce low back pain in cyclists participating in a Spinning® class.
A three period open label cross over design, involving thirty six subjects was conducted. Each subject participated in three Spinning® classes with a different handlebar height at each session. The saddle angle, saddle post height and fore/aft position of the saddle remained fixed to eliminate variability. The cyclists' pain perception was measured via the Visual Analogue Scale, Lickert Scale and the McGill Pain Questionnaire.

The results were analysed with respect to the change in the mean and standard deviation of the Visual Analogue Scale, the Lickert scale and the McGill Pain Questionnaire.
The significance of the study was set at the 0.05 level.

A zero value was recorded with respect to pain experienced by the cyclists during a Spinning® class on the VAS, Lickert scale and on the McGill Pain scale, when the handlebars were placed in the high handlebar height position on the Spinning® bicycle; this is the most important outcome of the study conducted.

In conclusion, there is a statistically meaningful difference ($p<0.001$) between the mean values of pain recorded by participants of the low handlebar height compared to the normal handlebar height, with the normal handlebar height being the better position. The standard deviation remains relatively constant. No pain was recorded on the VAS, Lickert scale and on the McGill Pain scale when the handlebars were placed in the high handlebar height position on the Spinning® bicycle. The results of the study indicate that the high handlebar height position is the best position for participants in a Spinning® class.

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