

CHAPTER FIVE

5.1 Conclusions

The aim of this clinical evaluation was to determine the effect of sacroiliac joint manipulation on hip joint functional ability in patients with sacroiliac syndrome by means of subjective and objective clinical findings.

Numerical Pain Rating Scale:

Sacroiliac manipulation provided significant pain relief to the patients. The syndrome also improved without manipulation (during motion palpation), but to a lesser extent than with manipulation. The pain measurement continued to improve over time, with the lowest value recorded after both treatments (manipulation and motion palpation).

Revised Oswestry Low Back Pain and Disability Questionnaire:

Sacroiliac manipulation made a significant change to the rating on the Revised Oswestry low back pain and disability questionnaire. The syndrome also improved during the control treatment (motion palpation), but to a lesser extent than during the manipulation. The readings at the final visit were lower than the readings at the first visit, indicating that the patients continued to improve over time.

Hip Joint Range of Motion:

There was an increase in all hip ranges of motion immediately after the first manipulation, and a slight decrease or no change immediately after motion palpation in most cases. This indicates that sacroiliac manipulation had a significant immediate effect on hip range of motion. In most cases however, the value before the second manipulation was lower than the value immediately after the first manipulation, but after the second manipulation this value was higher than the value immediately after the first manipulation. The second manipulation thus provided additional benefit to the patients. For all ranges of motion the value after three manipulations was higher than the

value before the first manipulation, as opposed to a slight decrease seen for most ranges of motion in the control (motion palpation) group. It can thus be said that sacroiliac manipulation increases hip joint range of motion in patients suffering from sacroiliac syndrome, with additional benefits being provided by more than one manipulation. In addition, the improvement seen in hip rotation range of motion lends credence to the results obtained by Bisset (2003).

Hip Joint Proprioception:

The mean value immediately after the first manipulation was closer to normal than the mean value immediately before manipulation. The mean value immediately after the first motion palpation was further from normal than immediately before motion palpation, indicating that sacroiliac manipulation had beneficial immediate effects on hip proprioception. However, this improvement was not sustained, since the mean value before the second manipulation was further from normal than the mean value immediately after the first manipulation, and the mean value after three manipulations was even further from normal than the value before the first manipulation for 10° internal and 20° internal rotation.

Pressure Threshold of the Piriformis Muscle:

The mean algometer readings did not show a large change during either treatment (manipulation or motion palpation). The sustained effect was larger than the effect immediately after the treatment. An increase in the algometer readings was shown over a longer time in both treatments (manipulation and motion palpation). The readings at the final visit were higher than the readings at the first visit, indicating that the patients continued to improve over time.

In terms of the hypotheses stated in chapter one:

- The first hypothesis was that sacroiliac joint manipulation would improve sacroiliac syndrome indicated by favourable subjective clinical findings. This hypothesis was accepted.

- The second hypothesis was that sacroiliac joint manipulation would improve hip joint functional ability indicated by favourable objective clinical findings. This hypothesis was accepted for hip joint ranges of motion. It was also true for hip joint proprioception, but the improvement was immediate and not sustained.

Pressure threshold of the Piriformis muscle improved but not significantly so, thus rejecting this hypothesis.

- The third hypothesis was that the group receiving manipulation to the sacroiliac joint would compare favourably to the control group indicated by an improvement in subjective and objective clinical findings. It was hypothesized that the subjective and objective clinical findings of the control group would either stay the same or get worse. The group receiving manipulation compared favourably to the control group for all subjective and objective clinical findings except pressure threshold of the Piriformis muscle. Subjective clinical findings of the control group improved, but to a lesser extent than the group receiving manipulation. Objective clinical findings of the control group stayed the same or decreased for most hip joint ranges of motion and for hip joint proprioception, but improved for pressure threshold of the Piriformis muscle. Therefore, for the most part this hypothesis was accepted with the exclusion of pressure threshold of the Piriformis muscle.

In conclusion, sacroiliac joint manipulation had a significant effect on sacroiliac syndrome and hip joint range of motion. Manipulation also improved hip joint proprioception, however the improvement was immediate and not sustained. It was suggested that other proprioceptive exercises be performed between manipulations. The effect of manipulation on Piriformis muscle pressure threshold was beneficial but not significantly so. It is therefore suggested by the researcher that sacroiliac joint manipulation be used for sacroiliac syndrome as well as in the prevention of hip joint pathologies

occurring due to erroneous muscle contraction, decreased hip joint range of motion and/or decreased hip joint proprioception.

5.2 Recommendations

This study is a clinical outcomes study and it is suggested by the researcher that further studies in this regard should:

- Have a larger sample size in order to have a better representation of the population and to strengthen the conclusions made.
- Have a blinded evaluator of objective measurements in order to exclude experimental bias. All objective measurements in this study were done by an evaluator; however, the evaluator was aware of the nature of the study and was also aware of whether the subjects were in group A or B.
- Have a placebo group to ensure any changes observed are actually due to sacroiliac manipulation. This study did have a control group; however, this was a crossover study and due to ethical considerations patients were informed in the letter of information that at some stage they would be part of a control group.
- Have a more accurate representation of the population in terms of ethnic demographics when recruiting patients. In this study the majority of patients were white and is not a true reflection of the ethnic demographics in South Africa.
- Have patients come back for a one month follow-up. In this study it was often shown by the results that the readings at the final visit were better than at the initial visit, indicating that the patients continued to improve over time. It might be worthwhile to see how the readings compare after a month to get an indication of the length of time which sacroiliac manipulation has an effect on hip functional ability.
- Have a control group in which the hip rotators are stretched. This should be done in order to prove that it is actually the sacroiliac manipulation which has an effect on hip rotation range of motion and not the stretching of the hip rotator muscles during side-posture

manipulation. Alternatively, one could change the position of the manipulation so that there is minimal muscle stretching involved e.g. prone pump.

- Reconsider the tool (Algometer) used for measuring tonicity of the Piriformis muscle. In this study it was assumed that by reducing the hypertonicity of the Piriformis muscle with sacroiliac manipulation the pressure threshold of that muscle would increase, thus the reason for using the Algometer. As discussed in the conclusions, significant results were not obtained. However, hip internal and external rotation range of motion improved significantly with manipulation. This was most probably due to an increase in flexibility and contractile ability of the Piriformis muscle as a result of a reduction in hypertonicity of this muscle. Therefore, in the context of this study, it is recommended that measuring hip rotation range of motion using an Inclinator might be a more valid tool for measuring tonicity of the Piriformis muscle.