

LITERATURE REVIEWS

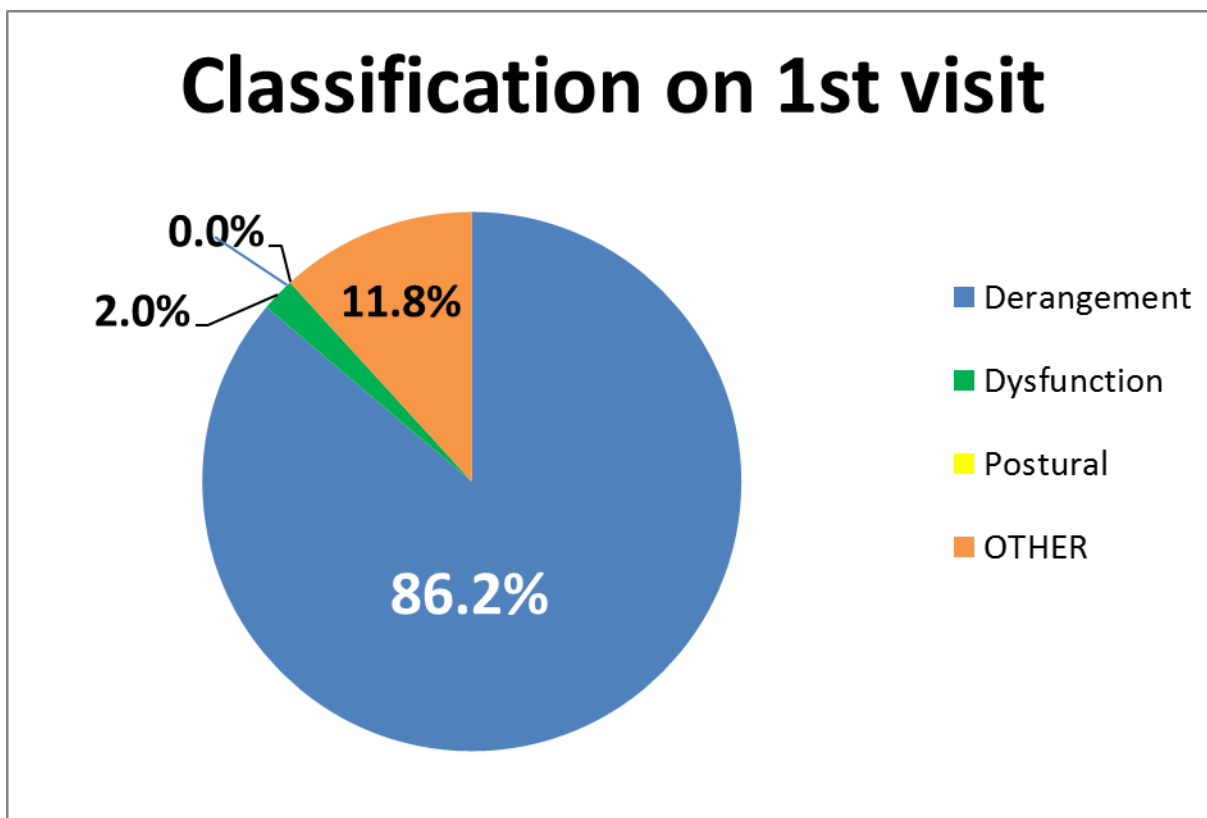
Summary and Perspective of Recent Literature

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**Otéro J, Bonnet F. 2016. Cervicalgie: Prévalence des syndromes McKenzie et des préférences directionnelles. (Neck pain: Prevalence of McKenzie's syndromes and directional preferences) *Kinesithérapie*; 14(145):36-44.**

This prospective multi-center study assessed the prevalence of Derangement, Dysfunction, Postural Syndrome, OTHER subgroups, Centralization and Directional Preference (DP) as well as their consistency over five visits (Otéro & Bonnet, 2016). 293 patients with nonspecific neck pain of any duration were classified by 34 Certified MDT therapists working in a variety of clinical settings in France.

At the initial visit, the proportion classified is shown below. As can be seen, the proportion of patients classified as Derangement is encouragingly high, despite the fact that more than 40% of the patients had a history of greater than three months. (Note: the 'Irreducible Derangements' (now known as Mechanically Unresponsive Radiculopathies) found in the study are included in the OTHER category).

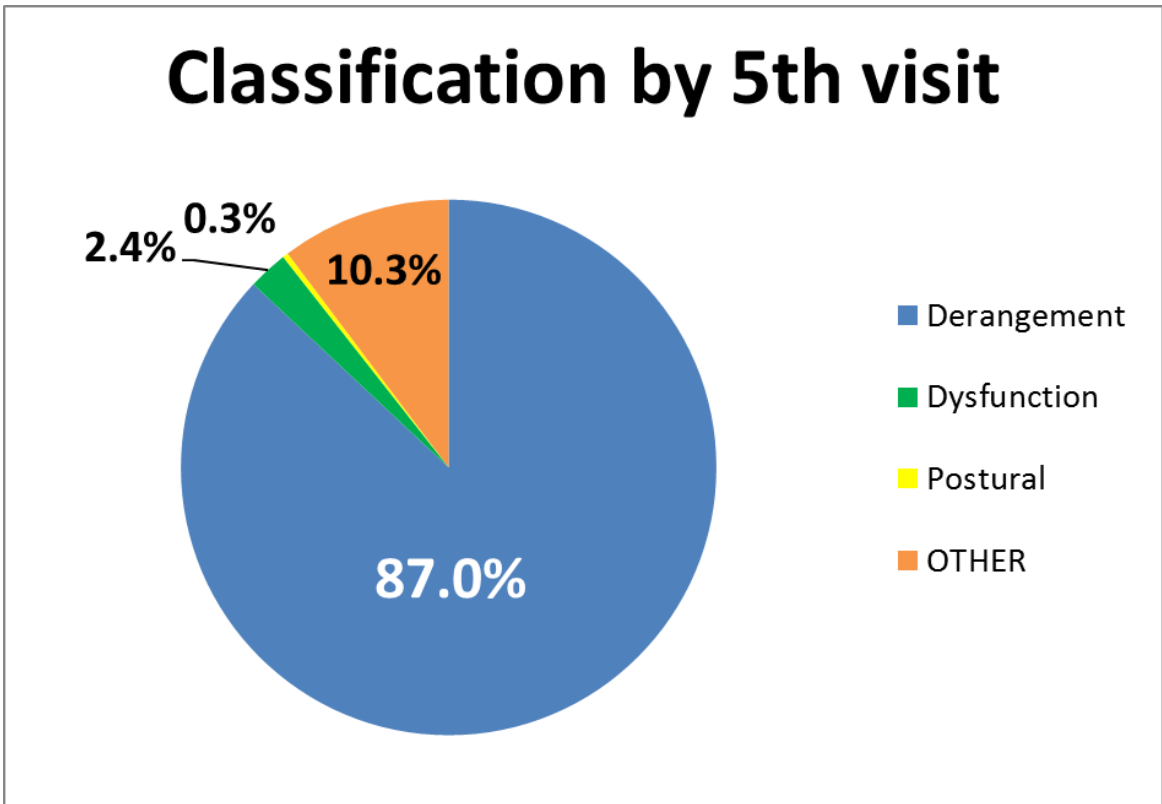


For Derangements, Extension was the most frequent DP at 83.6%. Of these, 49.2% were Retraction responders, 31.6% Retraction-Extension, and 2.7% Extension responders. A lateral principle was reductive in 13.7% and a DP for flexion was observed in only 2.7%.

During the initial visit, Centralization was observed in 52.9% and 'partial' Centralization in 21.9%.

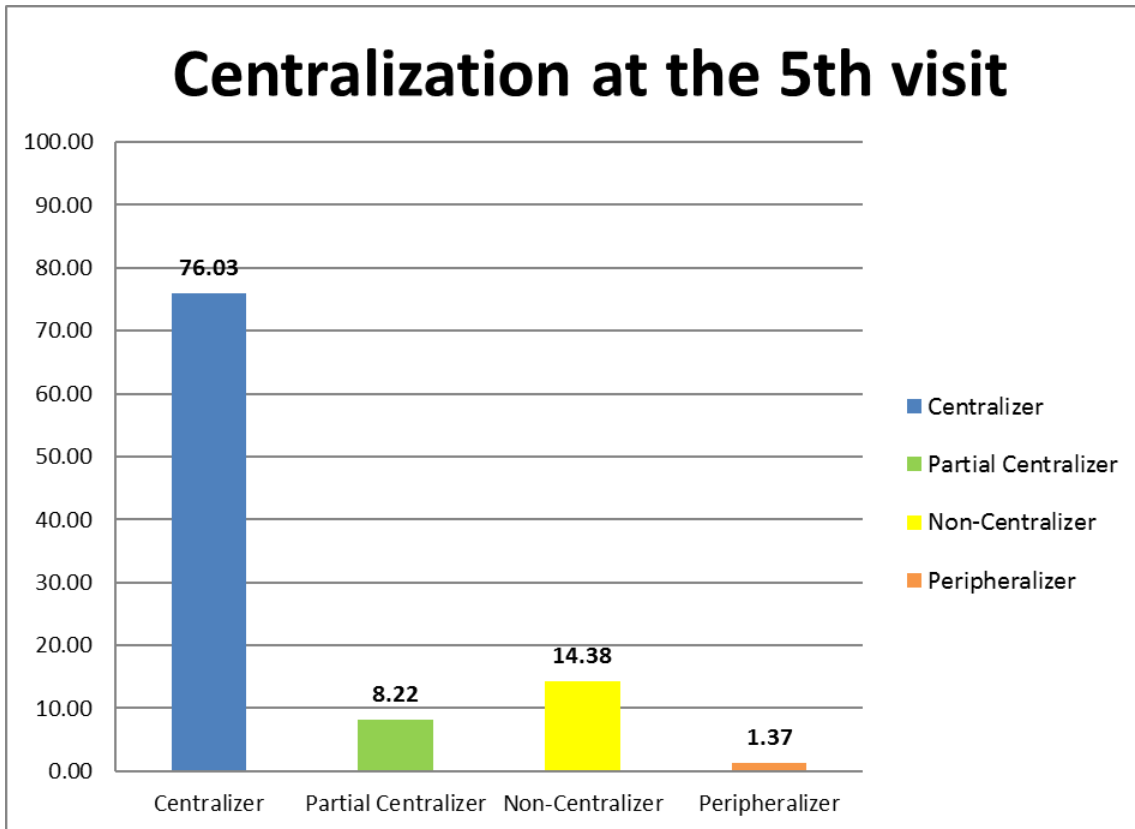
Concerning the consistency of classification over five visits, only 3.51% of Derangements were reclassified in another subgroup, mostly OTHER subgroups (77.77%). On the other hand, 34.28% of OTHERs were reclassified, all of them as Derangements. The proportions by the fifth visit are shown below:

# Classification by 5th visit



For the consistency of observation of DP, the overall prevalence rates varied only marginally over the five visits. However, the DP changed from one spinal movement to another in a total of 41.4%. The authors describe a total of 23 such changes; the most common change was, in fact, a progression (rather than a change in direction) from Retraction to Retraction-Extension (38.8%) and then there was a change from Retraction to Lateral Flexion (10.7%). In 9.9%, no DP changed to a DP, and, conversely, in another 5.8% with a DP changed to no DP.

Concerning the prevalence of centralization, by the fifth visit, the breakdown is shown below. The incidence of Centralization changed between the 1<sup>st</sup> and the 5<sup>th</sup> visit from 52.9% to 76%.



So, what are the implications for the MDT clinician? While this study confirms the prevalence rates observed in other studies, the prevalence rates of the various reclassifications and their detailed descriptions adds interesting new information to the current literature and informs clinical practice. It substantiates the importance of continuous re-assessments in order to confirm a provisional diagnosis and to guide management. Indeed, clinicians should not hesitate to test and confirm appropriate management over a few visits in order to thoroughly assess challenging clinical presentations.

The most compelling finding, though, is the overwhelming proportion of Derangements reported and the large percentage of those that demonstrate Centralisation. The implications are clear; most patients with neck pain who see a MDT clinician, have the potential to treat themselves with simple end range exercise and the prognosis is excellent.

Our inclination is to think that these patients will respond to Directional Preference exercises and posture correction better than to any other intervention, but we desperately need trials to confirm or contradict this inclination. In the meantime, surveys like this give us some encouragement that we can provide simple solutions to the majority of our patients in the hope that it will empower them to manage current and future episodes.

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### **Summary and Perspective of Recent Literature**

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**Ayanniyi O, Sanya A, Ogunlade O. 2016. Effects of the McKenzie protocol on pregnancy-related back pain. *J Experim Integ Med*; 6: 118-124.**

The aim of this study was to determine the effects of a McKenzie-based exercise and postural program compared to usual care (advice, patient education, analgesics) for the management of back pain in pregnant women.

Back pain is a well-known problem that can occur during pregnancy, with etiological consideration given to hormonal and biomechanical factors. A multitude of treatment approaches have surfaced to manage this problem conservatively such as educational programs, exercise regimens, sacroiliac belts for pelvic girdle pain and manipulative therapy. MDT is frequently used to assess and manage back pain in the general population, but its effects in the pregnant population are not well known. One case series of 72 pregnant women with low back pain found that Derangement was present in 80%, with 76% of this group achieving an excellent or good outcome (Rath 1997).

This study investigated pain (Numeric Rating Scale) and disability (Modified Roland-Morris Disability Questionnaire) outcomes for pregnant women over a seven-week period. 466 pregnant women were purposively recruited from five Nigerian antenatal centres and assessed by one investigator holding the MDT Diploma. Participants were initially screened and subgrouped according to pain location: High Back Pain (HBP) in the thoracic region, Low Back Pain (LBP) in the lumbar area, and Pelvic Girdle Pain (PGP) in the pelvis. Participants were excluded if they could not understand English or Yoruba, had a complicated pregnancy, showed indicators of serious spinal pathology, demonstrated at least two signs of nerve root compression or had an expected date of delivery less than eight weeks. Participants with HBP or LBP were also excluded if they did not fit into one of the three McKenzie syndromes (author correspondence). Patients were then randomized into a Usual Care Group (UCG) or a McKenzie Protocol Group (MPG) including usual care.

Treatment protocols lasted six weeks with a final assessment one week following completion. Participants in the UCG received treatment as deemed appropriate by the patient's physician which could include any or all of analgesics, counselling, postural education, and modification of activities of daily living. Participants in the MPG were given directional preference exercises (if indicated) and education on posture, avoidance of aggravating activities, prevention of recurrence, and self-management. One therapist assessed and treated all MPG patients. Repeated movement testing was limited to two to three movements in a given direction due to an ethical concern raised regarding repetitive movement in the presence of structural laxity; sustained positioning was also used. In the PGP group, if there was no response to movement or positioning then lumbopelvic manual techniques were used as a force progression; if again no response was seen then a sacroiliac belt was prescribed.

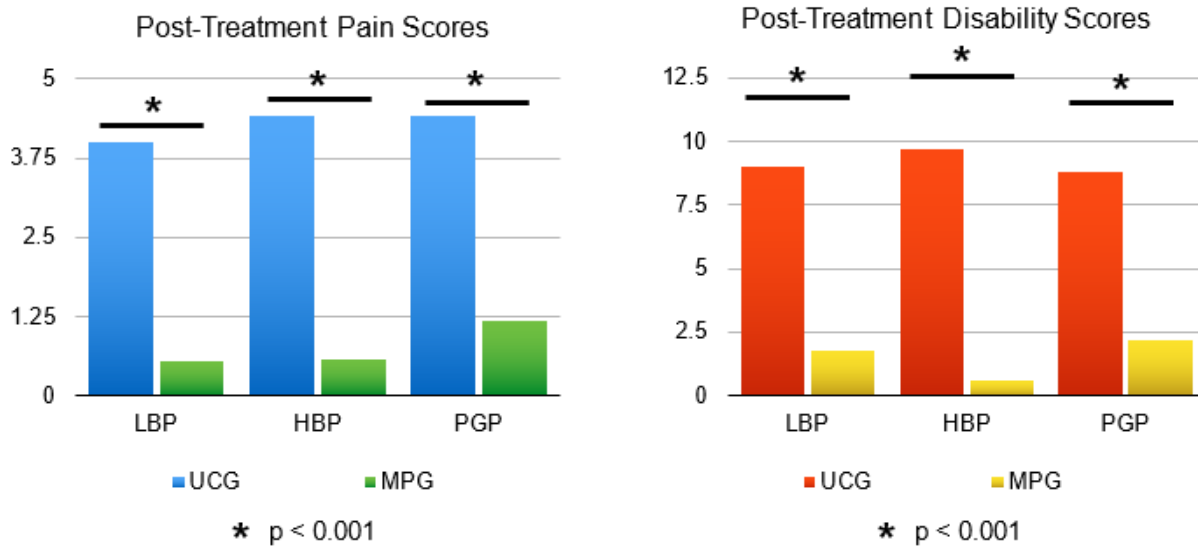
## Results

466 pregnant women were enrolled in the study, with 28 dropouts from the MPG and 16 from the UCG due to delivery dates earlier than expected. Only the participants who completed the study had their data analyzed.

Overall prevalence of the MDT syndromes as determined by initial screening is presented below (author correspondence).

Pain Site	Derangement	Dysfunction	Postural	Inconclusive	Total
LBP	220 (86% extension, 14% flexion)	0	10	0	230
HBP	86 (100% extension)	0	0	0	86
PGP	78 (52% flexion, 48 % extension)	0	0	72	150

Prior to treatment, there were no significant differences between the two treatment groups for age, parity, pain scores or disability scores. Participants within the MPG showed statistically significant and clinically important reductions in pain and disability for all pain location subgroups post-treatment; participants within the UCG showed statistically significant but not clinically important reductions in pain and disability only in the LBP and PGP subgroups. A between-group comparison revealed participants in the MPG achieved significantly greater reductions in pain and disability than those in the UCG across all pain locations:



The mean number of treatment visits for the MPG varied by pain location subgroup: LBP needed 2.41 (range 1-4), PGP 2.63 (range 2-4), and HBP 2.08 (range 1-3).

## Commentary

This study is an informative addition to the MDT literature as it provides evidence of the effectiveness of the approach in the pregnant population. The prevalence of Derangement and Directional Preference for the LBP and HBP groups is consistent with the previous case series (Rath, 1997), but interestingly for those in the PGP subgroup with directional preference, a slight majority responded to flexion. Importantly, robust results were shown in favour of MDT management; none of the participants in the usual care group achieved a clinically meaningful reduction in pain or disability, while all the McKenzie group participants did.

Strengths of this study included the large sample size with over 200 participants in each group and consistency in management of the MPG with one highly-trained therapist assessing and treating all participants. Additionally, MDT intervention was reflective of true clinical practice with an emphasis on self-management, postural education, temporary avoidance of aggravating factors and regular performance of reductive exercise.

Several limitations were noted. Firstly, the intervention in the usual care group was not standardized and was delivered by numerous care providers. Also, it is possible that some of the response seen in the MPG was due to a general exercise effect, since the usual care group did not receive any exercise interventions; an additional group performing non-specific exercises would have been enlightening to elucidate the specific impact of MDT. Furthermore, only two to three repetitions were performed in the repeated movement exam due to ethical concerns of structural laxity. This is an overly cautious approach; if the symptomatic response is followed then safety in the examination can ultimately be assured.

Despite these limitations, compelling and clinically important results were achieved in the MDT group. Thus, back pain in the pregnant population appears similar to the general population in that a high prevalence of Derangement is present and thus many will respond rapidly. Some procedures need to be modified but the system can be followed as for any other patient. Additionally, a notable finding from this study is that 52% of patients with pelvic girdle pain had a Directional Preference; therefore, just under half needed a sacroiliac belt as part of their care, less than what might be expected for this group.

[https://www.researchgate.net/publication/309586042\\_Effects\\_of\\_the\\_McKenzie\\_protocol\\_on\\_pregnancy-related\\_back\\_pain](https://www.researchgate.net/publication/309586042_Effects_of_the_McKenzie_protocol_on_pregnancy-related_back_pain)