

MELBOURNIAN WOMEN'S USE OF
OSTEOPATHY AS THERAPY FOR LOW BACK
AND POSTERIOR PELVIC PAIN DURING
PREGNANCY

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ABSTRACT AND KEY WORDS

Pregnancy-related low back, and posterior pelvic, pain are common problems.

Women (n = 126) attending Maternal and Child Health Centres in Melbourne were surveyed regarding their experiences and treatment of these conditions. Ten percent had consulted an osteopath, and most reported positive experiences of care. A large proportion were prescribed exercises or given postural advice.

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INTRODUCTION

Pregnant women commonly experience low back pain (LBP) and/or posterior pelvic pain (PPP). LBP and PPP are differentiated clinically and epidemiologically (Östgaard et al, 1996). Reported prevalence of pregnancy-related LBP includes 56% (Fast et al, 1987) and 49% (Östgaard et al, 1991). As it is such a prominent problem in the pregnant population, extensive research has been undertaken to elucidate effective treatment and prevention options. LBP and PPP have been differentiated clinically and labelled the major components of back pain during pregnancy (Östgaard et al, 1996). LBP usually refers to pain in the lumbar region (Östgaard et al, 1994) and/or thoracolumbar region (Whitman, 2002), while PPP is described as pain in the posterior pelvis, inferolaterally to the lumbosacral junction, which may refer to the posterior thigh and or posterior lower leg (Östgaard et al, 1994). For the purposes of this study, LBP and PPP were not differentiated.

The biomechanical and hormonal (relaxin) changes that occur during pregnancy have been demonstrated to predispose to, or maintain, pregnancy-related LBP/PPP. The weight of the foetus, particularly in the final two trimesters, and concurrent increases in circulating relaxin levels are postulated to increase lumbar lordosis and thoracic kyphosis (Parsons, 1994; Moore et al, 1990), creating extra strain through these regions and leading to pain. Several authors reported correlations between LBP or PPP severity and serum relaxin levels (Fast et al, 1990; Hansen, 1999). No biomechanical studies have demonstrated that spinal curves actually increase during pregnancy (Moore et al, 1990). Östgaard et al (1993) determined that there is no actual increase in lumbar lordosis during pregnancy, but that women with naturally large lumbar lordoses have an increased risk of developing LBP. Fast et al (1990) suggested that abdominal musculature is rendered insufficient during pregnancy, but inability to perform a sit-up appears unrelated to LBP development. Östgaard et al (1993) reported a correlation ($r = 0.15$) between increased abdominal sagittal diameter and the development of LBP. Although small, this correlation was statistically significant due to a large sample size. The co-efficient of determination ($r^2 = 0.0125$) suggests that the effect of biomechanical changes on LBP/PPP is small, but is likely to be important for those women who develop pregnancy-related pain.

Advice and education can be effective in reducing LBP. Östgaard et al (1994) found that an individually tailored education program including body posture, ergonomic and exercise advice, reduced sick leave during pregnancy.

Manual and physical therapy interventions are commonly used in the management of LBP. Frost et al (2004) demonstrated that patients receiving physiotherapy for LBP (not pregnancy-related) perceived greater benefit than patients receiving one session of advice and assessment with a physiotherapist. However, neither disease-specific, nor generic, outcome measures scores differed significantly between the groups. Physiotherapy may be as effective as advice.

Manipulation by a chiropractor reduced the incidence of back labour (back pain during labour) in a retrospective study by Diakow et al (1991). A large, multi-centre study by Andersson et al in 1999 (cited in Senior, 1999) demonstrated that osteopathic manipulation of the spine is as effective as routine medical care in patients with subacute LBP. Whitman (2002) suggested that numerous clinical trials have supported the use of manipulation for non-pregnant patients with acute LBP, and questioned whether pregnant patients are so different from non-pregnant patients that this evidence could not be applied to them. Pregnant women are typically excluded from clinical trials of manipulation.

Osteopaths in Australia receive five years tertiary education. They have proficient knowledge of the physiological and biomechanical changes of pregnancy, and are skilled to treat people with musculoskeletal pain and dysfunction. In the UK, the profession of midwifery has been encouraged to acknowledge the role osteopaths can play in the treatment of mothers and babies (Green, 2000; Sullivan, 1997; Montague, 1985). This study aimed to determine the number of women consulting osteopaths about pregnancy-related LBP/PPP in Melbourne, providing an indication of the market-share of osteopaths in the treatment of pregnant women in Melbourne.

METHOD

Measures

The questionnaire consisted of nine questions. Six were closed answer questions. The first two questions concerned the participant's experience of pregnancy-related

LBP or PPP, and whether or not they saw an osteopath for this. Both these questions represented an end to the participants questionnaire if their answer was “no”. The third question addressed perceived relief as a result of the osteopathic treatment. The fourth and fifth questions related the time period of osteopathic consultation and number of separate problems experienced. Questions six and seven addressed whether postural advice or exercise prescription were provided, and question eight addressed whether future osteopathic aid would be sought for LBP/PPP or other pregnancy related problems. The ninth question gave the participant opportunity to add further comments.

Experts in the field and possible participants pre-viewed the questionnaire for face and content validity. A Maternal and Child Health (MCH) nurse, and two university lecturers with considerable experience in questionnaire development, and five women fitting the criteria for the participant group gave their opinion concerning clarity and brevity of the questionnaire, question structure, suitability of the questionnaire as a research tool, and appropriateness for the intended subject group.

Participants

Women attending Maternal and Child Health Centres (MCHCs) of ten municipalities within a twenty-kilometre radius of the Melbourne CBD were surveyed. All participants were over eighteen years of age, and between 34 weeks pregnant and one year post-partum.

Procedures

Each municipality was provided with 7-10 questionnaires per MCHC. An A4, orange coloured poster was placed above a box or envelope, provided for receipt of completed questionnaires. Participation was voluntary and anonymous. The poster also contained information concerning the length of time the questionnaire would take to complete, as well as direction to a psychologist should a participant experience trauma related to recalling the events of their pregnancy. Receipt of a completed questionnaire implied informed consent to participate in the study. The Victoria University Faculty of Human Development Human Research Ethics Committee approved the study.

The author corresponded with the MCH Co-ordinator of each municipality. A letter was sent to each co-ordinator, followed up by phone and emails. Permission was granted in ten municipalities for the study to be conducted. Questionnaires were left in the MCHCs for 4-6 weeks. After this time, the questionnaires were either returned by post or collected by the author.

Statistical Analysis

The closed answer questions were analysed descriptively in the form of percentages. Questions four, five, nine and part of eight (b) were analysed qualitatively.

RESULTS

Six hundred and fifty questionnaires were distributed evenly between the ten municipalities. A return rate of 19% occurred (126 questionnaires). One municipality did not return the questionnaires in time, and twelve questionnaires were returned without explanation as to their origin. Some response bias may have occurred. The Cities of Whittlesea, Stonnington, Monash and Maribrynong each returned between 16% and 21% of the total returned questionnaires.

Of the returned questionnaires, 123 were filled out in entirety, allowing all data to be used. The remaining three did not complete the second page, completing questions one to five only. Missing data were not replaced.

Of the 126 women who responded, 79% experienced LBP/PPP during their pregnancy. As the study requested those experiencing LBP/PPP, this is not an indication of the incidence of LBP/PPP. Of these, ten percent sought osteopathic treatment. A Likert scale was used to determine perceived relief. Data from this scale were dichotomised into “no relief” and “relief,” including data from scores anywhere between “mild” and “significant relief”. Eight percent of participants who sought osteopathic treatment found no relief from the treatment, and 92% reported some degree of relief. Of the participants who answered questions 6-9, 60% were prescribed exercises, 70% were given advice about posture, 90% would see an osteopath in future pregnancies for LBP/PPP, and 70% would see an osteopath in future pregnancies for other pregnancy-related problems.

Questions 4, 5, 8b, and 9 were analysed qualitatively. Generally, pregnant women consulted osteopaths for between one and three separate problems. For each problem, osteopaths were consulted for one to five sessions. One woman saw her osteopath monthly prior to pregnancy, and continued throughout the pregnancy. Another saw the osteopath weekly during trimesters two and three, and continued treatment post-partum.

Regarding future pregnancies, women intended to seek osteopathic intervention for shoulder, neck, arm, or wrist pain. One woman would see an osteopath to aid the “latching on” process during breast-feeding. Women also reported intention to see an osteopath for upper back, neck, and shoulder pain due to the postural effects of breast-feeding.

Additional comments included recommendations to others to seek treatment, for treatment post-delivery, that osteopathy helped post-delivery and that the treatment is not for everyone, but that a caring and understanding practitioner must be found.

DISCUSSION

Some selection bias is likely because some municipalities denied permission to collect data. Also, the MCH nurses knew that the author was an osteopathic student, and despite instructions to leave the questionnaires for participants’ self-selection, some sympathetic MCH nurses may have handed out questionnaires to mothers. A higher response rate occurred in centres where the questionnaires were handed out, indicating that a response bias may also have occurred. Furthermore, it is likely that the posters may have attracted attention of women who either experienced LBP/PPP or saw an osteopath. Other women may have felt ineligible for or disinterested in the study. The number of women attending each MCHC at the time of data collection is unknown, making it difficult to determine an accurate response rate. Additionally, participants’ demographic data was not collected to provide an idea of the age, income and education of those who sought osteopathic treatment. This data would have also indicated whether the sample was representative of the population attending the MCHCs.

The Cities of Whittlesea, Stonnington, Monash and Maribryong obtained the largest response rate, falling within four percent of one another, and the remaining municipalities returned considerably fewer questionnaires (see Figure 1).

Demographic information for these four municipalities is displayed in Table 1, and demonstrates that despite a large proportion of the response originating in only four municipalities, a demographically broad representation of the pregnant population in Melbourne may have been obtained.

Insert Table 1 and Figure 1

Care-seeking patterns reported in this study are not consistent with previous research. Walker (2004) conducted an Australia wide study of men and women with LBP, and reported that 2.7% of people with LBP consulted an osteopath (age and sex standardised). The much greater rate of care-seeking from osteopaths found in this study may be due to the selection and response biases explained above.

All women consulting an osteopath saw the osteopath fewer than six treatments consecutively. Osteopathy is a relatively expensive, private, and time consuming healthcare option. However, osteopathy may be cost effective because most women reported relief and that they would seek this type of care again.

A high percentage of women who saw an osteopath were prescribed exercises or given postural advice, suggesting that osteopaths have taken up the recommendations of Östgaard et al (1994) and Frost et al (2004) that advice and education are effective in the management of LBP. A larger scale study may provide more extensive and accurate data.

Osteopaths have extensive training in manipulative and manual therapies, techniques used by many practitioners, and demonstrated to somewhat effective in the treatment of LBP (Whitman, 2002; Andersson, 1997; Diakow, 1991). Nicholls (1997) completed an unpublished thesis at Victoria University reporting that osteopaths in Victoria used a wide variety of manual therapy techniques as part of their treatment of pregnant patients. There are little data demonstrating the effectiveness of these

techniques for the pregnant patient. Nicholls determined that 72% of osteopaths also offered advice and support as part of their treatment.

In an interview in 2000, British midwifery student Jenny Green consulted experts in the field of osteopathy, Stuart Korth and Stephen Sandler, and gave an indication of the osteopath's role in the care of pregnant women and new-borns. A conclusion was that osteopaths could be effective in the treatment of LBP and lumbar pain during labour. The alleviation of the mechanical stress and associated pain of pregnancy is also possible. More relevant to the midwife is evidence that the osteopath, through the use of OCF, may be effective in treatment of infants with poor feeding/sucking, vomiting, irritability, crying, asthma, neurological dysfunction such as cerebral palsy, and sleep disorders, among other ailments (Green, 2000). A case report by Andrew (2002) indicated a cranial osteopath performed a pelvic adjustment which allowed a difficult labour to progress as normal. The osteopath subsequently treated the infant directly after birth for breathing difficulties. Thus, osteopaths may be able to work in conjunction with midwives to provide women with a pain-free, safe pregnancy, labour, and birthing process.

Further research in the field could include comparison with treatment by other manual medicine practitioners, including chiropractors and physiotherapists. Because pregnant and post-partum women may have ceased working, or reduced earning capacity, cost-effectiveness and other types of cost-benefit analyses of osteopathic treatment also need to be conducted. Research into the techniques used by osteopaths and their effectiveness in the alleviation of pregnancy-related pain and dysfunction would also be valuable.

CONCLUSION

Most women surveyed experienced LBP/PPP during their pregnancy. A small percentage of these women consulted an osteopath to address their pain, and most of these women reported positive experiences of osteopathy, including some pain relief, exercise prescription, and postural advice. A larger scale study is recommended for more conclusive results.

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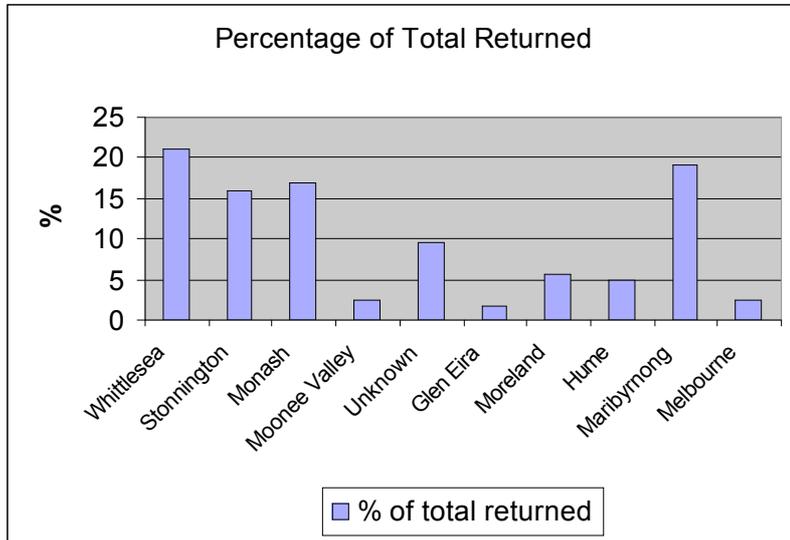
Table 1:

Demographic Information (2001 Census Data: Australian Bureau of Statistics)

Municipality	Geographical Position (in relation to CBD)	Population	Gross Weekly Income Range	Percentage Born in Australia	Age Range
Maribryong	9km North West	59,770	32% between \$120-399	51	44% between 20-44
Monash	20km South East	56,146	Even spread between \$160-1499	59	Even spread between 15-65
Stonnington	10km South East	87,412	23% greater than \$1000	65	37% between 20-39
Whittlesea	18km North East	101,036	30% between \$160-499	59	Even spread between 15-65

Figure 1

Returned Questionnaires- Distribution Between Municipalities



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APPENDICES

Appendix 1

Faculty Human Research Ethics Committee

MEMORANDUM

TO: Melainie Cameron, (Claire Burns)
Principal Investigators
HSc

FROM: Prof Colin Torrance
Chair
Human Research Ethics Committee
Faculty of Human Development

DATE: December 16, 2004

SUBJECT: **Approval of application involving human subjects**

Thank you for your submission detailing amendments to the research protocol for the project titled, *Victorian women's use of osteopathy as a therapy for low back and posterior pelvic pain during pregnancy* (HRETH.FHD.101/03).

The proposed amendments have been accepted by the Faculty Human Research Ethics Committee and approval for application HRETH.FHD.101/03 has been granted from 30/3/04 to 30/6/04.

Please note that, the Faculty Human Research Ethics Committee must be informed of the following: any changes to the approved research protocol, project timelines, any serious or unexpected adverse effects on participants, and unforeseen events that may effect continued ethical acceptability of the project. In these unlikely events, researchers must immediately cease all data collection until the Committee has approved the changes.

If you have any queries, please do not hesitate to contact me on 8345 0003.

The Committee wishes you all the best for the conduct of the project.

Prof Colin Torrance
Chair
Human Research Ethics Committee
Faculty of Human Development

Did you suffer **low back or posterior pelvic pain** in your pregnancy?

If so, I invite you to be in my study!

If you are 18 years or older, and you are in the 34th to 36th week of your pregnancy OR within 12 months of giving birth, you can be part of my study into

“Victorian women’s use of osteopathy as treatment for low back or posterior pelvic pain during pregnancy”

The study is a completely voluntary, anonymous questionnaire consisting of nine questions about your pain. Your answers will be completely anonymous, and it will take you less than 5 minutes to complete!

By completing the questionnaire, you have given informed consent for the information you give to be used in the study. The information you provide will remain completely anonymous. If you experience any psychological problems associated with recollecting the events of your pregnancy while completing this questionnaire, you are invited to contact

Dr Mark Andersen PhD psychologist
(03) 99195413
PO Box 14428 Melbourne MC 8001

Questionnaire

1. Did you experience low back or posterior pelvic pain during your pregnancy?

Yes No (If this is your response, there is no need to complete the rest of the questionnaire)

2. Did you seek osteopathic treatment for your low back or posterior pelvic pain?

Yes No (If this is your response, there is no need to complete the rest of the questionnaire)

3. If so, in your opinion, was your pain reduced or resolved as a result of the treatment you received?

- Not at all
- Mild relief
- Moderate relief
- Significant relief
- Completely resolved

4. For how many separate problems throughout your pregnancy did you see the osteopath?

5. For how long did you see the osteopath on each occasion (ie. how many visits)?

6. Did your osteopath prescribe exercises?

Yes No

7. Were you given advice about posture?

Yes No

8. Would you see an osteopath in future pregnancies:

a) For low back or posterior pelvic pain?

Yes No

b) For other pregnancy related problems?

Yes No

(If so, could you outline below what these problems are likely to be?)

9. Do you have any other comments?
