THE EFFECTS OF CHIROPRACTIC ADJUSTMENTS DURING PREGNANCY ON LABOR TIMES

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ABSTRACT

Anecdotal case reports suggest that pregnant women who receive chiropractic adjustments have shorter labors than women who do not. The purpose of this paper is to compare labor times of women who received six or more chiropractic adjustments during pregnancy to the labor times suggested in obstetric literature for women who did not receive chiropractic adjustments. An eight question survey was used to obtain background information on thirty-one women with eleven women being disqualified due to complications during their pregnancy. The results of labor times for these women showed that first labors had an average time of 7.2 hours and second or more labors had an average time of 5.7 hours. Obstetric literature states that average labor times for a first labor are 12.1 hours and second or more labors are 7.6 hours. The results of this paper support the hypothesis that chiropractic adjustments can reduce labor times. More research is needed in this area to further support the role chiropractic adjustments have in reducing labor times.

INTRODUCTION

The scientific literature on pregnancy and labor times is well documented in the obstetric field, but similar studies are sparse in chiropractic literature. In this study we investigated the effects of chiropractic adjustments during pregnancy on labor times. We expected to find that labor times are shorter in the patient that received chiropractic adjustments during pregnancy compared to women who did not receive chiropractic adjustments.

Obstetric literature defines labor as a coordinated effective sequence of involuntary uterine contractions resulting in thinning and dilation of the cervix and voluntary bearing down efforts of the mother which results in the birth of the baby (1). Labor is divided into three stages. The first stage begins with the onset of contractions and ends with complete dilation of the cervix (10 cm). It is typically the longest stage of labor. It can be further divided into a latent and active phase. The latent phase is slow dilation of the cervix up to 3-4 cm and the active phase is rapid dilation to 10 cm. The second stage of labor involves the descent and delivery of the baby. It is commonly known as the pushing stage. The third stage of labor is the delivery of the placenta.

First stage of labor is expected to last anywhere from 8-12 hours in a first pregnancy (1). The latent phase can last 6-8 hours and the active phase 4-5 hours (2). Second or more deliveries are usually shorter with a first stage lasting 6-8 hours (1). The latent phase lasts 4.5-5 hours and the active phase lasts 2-2.5 hours (2). The second stage of labor can last anywhere from a few minutes to several hours but is not expected to last longer than 2 hours (1). The total time in labor for a first pregnancy is 10-14 hours and for

a second pregnancy is 7-10 hours. The mean labor time for a first pregnancy is 12.1 hours and for a second is 7.6 hours (2). The preceding statistics represent a consensus from various empirical sources in medical literature.

The information in the chiropractic literature on pregnancy is limited. Most of the literature focused on the biomechanical changes and spinal compensations that occur as pregnancy progresses. Some of the biomechanical changes that should be considered are the following:

1) anterior tilt of the pelvis with extended knees
2) increase lumbar lordosis
3) hyperkyphosis of the thoracic spine
4) hormone induced ligament laxity
5) SI joint alterations
6) altered or waddling gait
7) facet imbrication
8) increased compressive forces on the posterior disc (3,4).

Treatment considerations suggested by Fligg (4) include low force adjusting during the first trimester and in later trimesters different positions for the patient to accommodate the abdomen. Adjusting procedure for the pregnant patient are outlined with pictures by Esch and Zachman (5). There are several orthopedic problems that are common such as low back pain, upper extremity pain and leg cramps (6).

Sacroiliac pain has ben reported as the most common complaint of pregnant women (7,8). The sacroiliac joint becomes more movable and the function of the pelvic joints is altered. There is less support of the joints by surrounding muscles and ligaments (7). Therefore alteration in function of the sacroiliac joints can lead to nerve interference and subluxation and any other impediment to optimal function must be removed which is

the essence of chiropractic (7). Increasing biomechanical function by chiropractic adjustments can decrease stress in the body and therefore allow for relaxation during the birth process (7).

Back pain that occurs during pregnancy is strongly correlated to back labor (9). A retrospective study of 400 pregnancies among 170 patients was performed in chiropractic offices in Niagara Peninsula (9). These patients were interviewed and it was found that 42.5% had back pain during pregnancy and 44.7% had back pain during delivery. The correlation the authors made was that patients who experienced back pain during their pregnancies were more likely to experience back labor. The patients were further divided into two groups. One group of 25 pregnant women were treated for back pain and the other 145 who were not. Of the 25 that received adjustments, 18 did not experience back pain during labor. In the non-treatment group (145), 30 did not experience back pain during labor. Eighty four percent of the patients that did receive adjustments reported a decrease in their back pain during pregnancy. This study suggests that early intervention could help reduce the amount of back pain during pregnancy and delivery. Another study reported by Leach (10) shows that 90 out of 120 pregnant women reported less pain after delivery with chiropractic adjustments.

Two additional articles reported that among private chiropractic patients who received chiropractic adjustments during pregnancy there were shorted labor times when compared to women who did not receive chiropractic adjustments (11,12). Fallon (11) followed 58 pregnant patients from the first trimester of pregnancy to delivery and found. There were shorter labor times reported by these women receiving chiropractic

adjustments when compared to women who did not. A treatment plan was recommended for pregnant women (10). It was suggested that during the first trimester the pregnant patient be seen about once a month, during the second trimester twice a month and once a week during the third trimester. The total visits is about 20 but will vary depending individual patient need. Penna (12) also found shorter labor times among her patient population, but did not have any statistics to report.

As mentioned previously, there are many changes that occur during pregnancy. These structural changes lead to subluxations that can cause an alteration in the normal nerve transmissions in the spinal cord (8). There can be an increase or decrease in nerve transmission that can effect every organ and tissue in the body. With the structural changes of pregnancy, subluxation and nerve interference are inevitable. Chiropractic adjustments normalize structure and function of joints and remove nerve interference. Furthermore, When the sacroiliac joints are not moving properly, separation of the pelvic joints during delivery may be difficult. This separation is important for the delivery of the baby. Through chiropractic adjustments the pelvis will function normally and separation will be easier.

MATERIALS AND METHODS

A survey was used with self-reported length of labor times by women who had received chiropractic adjustments during their pregnancies (Appendix A). The participants were students or the spouse of a student from Logan College of Chiropractic in St. Louis, Missouri. A few of the women were previous students and three were

patients of field doctors in the St. Louis area. The participants were contacted personally or by mail if they had moved out of the St. Louis area. Thirty-one women were screened with 11 being excluded because they did not meet all of the following criteria:

1) single vaginal birth with in the last 24 months
2) uncomplicated delivery with no restriction in activity
3) non-induced labor
4) head of the baby was the presenting part
5) received a minimum of six chiropractic adjustments during the pregnancy.

Based on the above criteria twenty women were selected to participate. A consent form was obtained before participation (Appendix B). The participants were instructed to begin timing their labor when they first had contractions 10 minutes apart or closer that led to delivery of the baby.

The mean length of labor was 6.6 hours for first and second labors combined. Of the 20 women, 13 were first time mothers. For first labors the mean labor time was 7.2 hours and for second or more labors it was 5.7 hours.

RESULTS

The data collected showed an average labor time of 6.6 hours. Labor times ranged from 1.5 to 16 hours. The two deliveries of 1.5 and 16 hours were excluded as outliers because they were so divergent from the mean. The mean for first and second labors together was 6.6 hours.

There were 13 first deliveries, but 11 averaged when the two extremes were eliminated. The mean for first deliveries was 7 hours. The average was 7.2 hours.

Seven of the deliveries were second or more. The mean was 5.5 hours, and the average was 5.7 hours. It should be mentioned that one of the mothers reporting had given birth to her 9th child, but her delivery time was still reported at 5 hours.

The results of this study show a reduction in the length of labor times reported by women receiving chiropractic adjustments in comparison to women who did not receive chiropractic adjustments. The obstetric literature states an average first labor without chiropractic adjustments could vary from 10 to 14 hours with a mean of 12.1 hours and second labors are expected to be 7 to 10 hours with a mean of 7.6 hours (1,2).

DISCUSSION

The data collected suggests a trend toward decreased labor times in patients receiving chiropractic adjustments. While our sample size was small, we did accomplish some empirical work in a sparsely reaserched field. This study can be used as a baseline for future research.

The data supported our hypothesis that chiropractic adjustments can reduce labor times. There are however several variables that were not taken into consideration. The first and largest variable is the subjective account of labor times. It is hard to determine exactly when labor begins. Therefore, the times given are based on the patients perception of her labor.

Also, since most of the participants came from a chiropractic college, they were more likely to get adjusted. The exact number of adjustments was not considered. While

six was the minimum for this study, It is probable that the participants received upward of 40 or more adjustments. The availability of chiropractic care in a school setting makes the participants more likely to receive more chiropractic adjustments than someone seeking care outside the school. The kind of adjustment that each participant received can also be variable. While most participants from this chiropractic college were most likely treated with Logan Basic technique, women seeking care in the general population may not be adjusted with the same technique. Many of the participants from the chiropractic college are more health conscious and more aware of herbal or natural supplements that may have a positive effect on labor.

Several other factors not taken into consideration are the age of the mother, pain medication used during labor, position of the mother during delivery, and relaxation techniques used. Some of our participants had their babies at home which can also be a consideration in the length of labor.

The data collected does support the idea that chiropractic adjustments shorten labor times. However, as chiropractors suggest, the care needs to be regular. Normalizing body function and structure through chiropractic adjusting takes time and skill and this study is not suggesting that as little as six chiropractic adjustments could produce the results obtained. It should also be noted that it is not necessarily important to have as many as 40 chiropractic adjustments. The reference from Fallon (10) suggests somewhere around 20 chiropractic adjustments during pregnancy.

CONCLUSION

According to the data collected and the population surveyed, this study found that women who received six or more adjustments during pregnancy had shorter labor times than women who did not receive chiropractic adjustments during pregnancy. This study supported some information that had been presented only briefly in current chiropractic literature. This study suggests a trend that may exist between women who receive chiropractic adjustments and decreased labor times. More research is needed to confirm this study with the variable considered and eliminated if possible. This study is a baseline for further research. There is also the need to look at the complications and variables presented in the discussion. If there is a true relationship between chiropractic adjustments during pregnancy and a decrease in labor times, this information could prove to be beneficial to expectant mothers and educational to their chiropractors.

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REFERENCES

1. Pernoll, M.L. and Benson, R.C. Current Obstetrics and Gynecological Diagnosis and Treatment. Applegate and Lange, 1987: 184-185.

2. Shaver, David C. Normal Labor and Delivery. In: Sciarra, J.J. Gynecology and Obstetrics. Harper and Row, 1992: vol 2, 1-9.

3. Chalker, H.M. Spinal Compensations of Pregnancy. American Chiropractor, May/June 1993; 23-26.

4. Fligg, B.D. Biomechanical and treatment considerations for the Pregnant Patient. Journal of the Canadian Chiropractors Association, 1986; vol 30, no 3: 145-147.

5. Esch, S. and Zachman, Z. Adjustive Procedures for the Pregnant Chiropractic Patient. Chiropractic Technique, May 1991; Vol 3, No 2: 66-71.

6. Newquist, S.A. Common Orthopedic Problems in Pregnancy. The Digest of Chiropractic Economics, Nov./Dec. 1991: 88-91.

7. Cohen, Karen B. The Musculoskeletal System in Pregnancy. Today's Chiropractor, May/June 1988: 70-82.

8. Gatterman, Meridel I. Chiropractic Management of Spine Related Disorders. William and Wilkens, 1990; 39,47.

9. Diakow, Peter R.P., Gadsby, Thomas A., Gadsby, John B., Gleddie, John G., Leprich, David J. Scales, Albert M. Back Pain During Pregnancy and Labor. Journal of Manipulative and Physiological Therapeutics, Vol 14, No 2; Feb 1991: 116-118.

10. Leach, Robert A. The Chiropractic Theories A Synopsis of Scientific Research. Williams and Wilkes, 1986; 193.

11. Fallon, Joan M. Chiropractic and Pregnancy A Partnership for the Future. International Review of Chiropractic, Nov/Dec 1990; 39-42.

12. Penna, Mariangeia. Pregnancy and Chiropractic Care. ACA Journal of Chiropractic, Nov 1989; 31-33.

QUESTIONNAIRE

		Pregnancy		
1.	Year of baby's birth	1st	2nd	3rd
2.	Was this a vaginal delivery?	1st	2nd	3rd
3.	Was labor induced?	1st	2nd	3rd
4.	Was this a single birth?	1st	2nd	3rd
5.	Did you receive a minimum of six chiropractic adjustments during your pregnancy ?	1st	2nd	3rd
6.	Were you confined to bed or did you experience any other complications during your pregnancy?	1st	2nd	3rd
7.	Was this a breech birth?	1st	2nd	3rd
8.	How long were you in labor? Begin counting when you first felt contractions that were at least ten minutes apart ,or sooner, that progressed until the delivery of your baby.	1st	2nd	3rd

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INFORMED CONSENT FORM

The Logan College Student Research Group of Shiloh Graham, Ellen Kearns, and Rebecca Sturmer, has requested my participation in a research study at this institution. The title of the research is, "Chiropractic Care During Pregnancy and the Effects on Labor Times." I understand that the purpose of this research is to compare the length of labor of women that had chiropractic care during their pregnancy with the labor times reported in obstetric literature. My participation will be limited to answering a survey conducted over the telephone. The survey will inquire certain facts regarding my pregnancy and delivery. The time involved to complete the questions will be approximately ten minutes. I understand that there are no direct risks or direct benefits associated with my participation. I understand that the research group may terminate my participation without regard to my consent if in the researchers' judgement, it is in my best interest to do so. I also reserve the right to terminate my participation at any time that I so choose without penalty or prejudice. I understand that the results of this study may be published but that my name or identity will not be revealed. Any questions that I may have concerning this study, before or after my consent, will be answered by Shiloh Graham, Ellen Kearns, or Rebecca Sturmer, of the investigation team. I understand if I have further questions concerning the research or my rights as a research participant, I may contact Dr. John Gutweiler, Chairman of Senior Research Division (phone: 227-2100, ext. 310).

I have read the above statement and have been able to ask questions and express concerns, which have been satisfactorily responded to by the investigators. I believe I understand the purpose of the study as well as the risks involved. I hereby grant my informed and free consent to be a participant in this study.

_____ _____

Signature Date

_____ _____

Witness Date

Phone # _____