

## **EXPLORING THE LILLARD EVENT AND LOCATION OF THE FIRST CHIROPRACTIC ADJUSTMENT: A HISTORICAL REVIEW.**

Desmond Wiggins DC MAppSci MPH <sup>(1)</sup>

Roger Engel DC PhD<sup>(2)</sup>

*<sup>(1)</sup>Corresponding author: MPhil (cand) Department of Chiropractic, Macquarie University*

*<sup>(2)</sup>Department of Chiropractic, Macquarie University*

### **Corresponding Author:**

Desmond Wiggins

22 Burns Crescent, Wondai, Queensland 4604

[desmond-charles.wiggins@hdr.mq.edu.au](mailto:desmond-charles.wiggins@hdr.mq.edu.au)

**EXPLORING THE LILLARD EVENT AND LOCATION OF THE FIRST CHIROPRACTIC ADJUSTMENT: A HISTORICAL REVIEW.**

**ABSTRACT**

Historical accounts indicate that the first chiropractic adjustment occurred on September 18, 1895, when D.D. Palmer treated the spine of Harvey Lillard. According to the records, Lillard, a deaf man, regained his hearing following this treatment. The event launched the start of chiropractic education. Given the historical significance and dramatic treatment response, the story's validity has been a source of contention within the chiropractic profession. Furthermore, the records are inconsistent concerning the anatomical location of the first chiropractic adjustment. This article summarizes an investigation into the Lillard event to provide a more accurate description of the first chiropractic adjustment and the most probable anatomic location.

**Keywords:** Lillard, Adjustment, Magnetic, Vertebra, Thoracic, Cervical

**INTRODUCTION**

Chiropractic traditionally traces its beginnings to a pivotal event on September 18, 1895, when Daniel David Palmer performed the first chiropractic 'adjustment' on William Harvey Lillard, curing him of a 17-year-history of deafness. (1) This event led Palmer to hypothesize a disease model incongruent with the prevailing theories of human anatomy and physiology. (2-4) However, precisely which spinal region was 'adjusted' on that day has been the source of discussion for more than a century. Investigations into the subject have typically concluded there is no definitive answer as to whether the event occurred and if it did, what part of the spine was treated. (5) To resolve the second part of this question, we have assumed the first part is correct, i.e. that the event did occur.

The purpose of this article is twofold. First, the paper will present evidence that will help clarify which part of the spine Palmer adjusted when treating Lillard in September 1895. In clarifying the precise location of the first chiropractic adjustment, we hope to provide a basis for directing future scientific research into whether spinal adjustments positively affect auditory system function. Given the extent of the ongoing criticisms about chiropractic, exploring an evidence base for the original claims made by its founder is warranted and will help address those criticisms. (6-10) Second, this article will investigate the accuracy of the historical reports of the Lillard event, particularly the contemporary evidence to support the probable location of the first chiropractic adjustment.

**William Harvey Lillard**

Accurate information about William Harvey Lillard is limited and typically refers to his occupation as a janitor in Davenport, his racial status as an African American, his 17-year history of deafness, and the date he was cured of his deafness. (11-15) Lillard was born on September 6, 1856 in Missouri. (12) He married twice, in 1882 and again in 1895, and died on September 7, 1925, from acute cardiac failure precipitated by chronic myocarditis. (11,15) (Figure 1).

### **The first chiropractic adjustment**

The circumstances surrounding how Lillard met Palmer are unclear with some suggesting Palmer had treated Lillard prior to 1895. (16-19) While there is no evidence to verify this, Lillard's daughter, Valdeenia Simons, claimed her father had met Palmer by chance outside Palmer's office in 1895, at which time they devised a plan to make money out of a fanciful story about a supposed cure. (19) However, this claim by Lillard's daughter has been challenged. (20) Palmer's account of his introduction to Lillard gives no clue as to the accuracy of either account and simply states that Lillard told him he had become deaf seventeen years earlier at the precise moment something had "given way in his back". (21,22)

Palmer then described how he located a misaligned vertebra, which he 'racked' into its normal position with a specific 'adjustment.' (21) Palmer's terminology in describing the event warrants comment. The Lillard 'adjustment' was not the first time Palmer had used spinal manipulation as a treatment. In 1888, while practicing as a 'magnetic manipulator', Palmer claimed that "hemiplegia could be relieved by adjusting the fifth dorsal [thoracic] vertebra." (23) Given Palmer's focus on specificity, he most likely considered the Lillard adjustment a form of specific magnetic manipulation.

### **Magnetic manipulation**

Palmer's views on magnetic manipulation are partly the reason for the confusion around when the first chiropractic adjustment was performed. Despite reporting the positive effect of his 'chiropractic' adjustment on Lillard, Palmer appears to have continued practicing as a 'magnetic manipulator' for many years after the Lillard event. (24,25) His close connection to magnetic manipulation can be seen in several of his actions. In 1896, he registered his new school, *Palmer's School of Magnetic Cure*, and included a statement in the charter that the school had been established to "teach the treatment of injuries and diseases by magnetic manipulations" (Figure 2 is an extract from the Articles of Incorporation). (13,26,27)

Figure 1 Lillard's death certificate

U. S. No. 822-1921. Approved as to Form by Dept. of Efficiency. 25421.

PLACE OF DEATH **King Seattle** Washington State Board of Health  
 County of **King** BUREAU OF VITAL STATISTICS  
 City or Town of **Seattle** CERTIFICATE OF DEATH

Registered No. **2344**  
 Registered No. **2344**

Registration Dist. No. **5934 Lucile St.**  
 (If death occurred in a hospital or institution, give its NAME instead of street and number)

2. FULL NAME **WILLIAM HARVEY LILLARD**  
 (a) Residence No. **3934 Lucile St.** **463**  
 (b) If non-resident, give city or town, and state.  
 (c) How long in Registration Dist. yrs. mos. ds. how long in U. S. if of foreign birth. yrs. mos. ds.

Personal and Statistical Particulars			Medical Certificate of Death		
1. Sex <b>Male</b>	4. Color or Race <b>Colored</b>	3. Single, Married, Widowed or Divorced <b>Married</b>	16. Date of Death <b>Sept. 7 1925</b> (Month) (Day) (Year)	17. I HEREBY CERTIFY that I attended deceased from <b>Died suddenly</b>	
(a) If married, widowed or divorced: Husband of _____ Wife of <b>Phoebe Lillard</b>			that I last saw him _____ since on _____		
5. Date of Birth <b>Sept. 6 1858</b> (Month) (Day) (Year)			and that death occurred on the date stated above, or (Circle the disease causing death or, in deaths from violent causes, state: (1) Nature and extent of injury; and (2) whether ACCIDENTAL, SUICIDAL or HOMICIDAL. The CAUSE OF DEATH was as follows:		
6. Age <b>69</b> yrs. <b>0</b> mos. <b>1</b> ds. (If less than one day)			(Primary) <b>Acute Cardiac Failure</b> <b>90</b>		
7. Occupation of deceased: (a) Trade, profession, or regular kind of work <b>Janitor</b> (b) General nature of industry, business, or establishment in which employed (or employer). (c) Name of employer.			CONTINUATION <b>Chronic Myocarditis</b> (Secondary) _____ (Duration) yrs. mos. ds.		
8. Birthplace (City or town) (State or country) <b>Mo.</b>			18. Where was disease contracted if not at the place of death? (a) Did an operation precede death? <b>NO</b> Ends of _____ (b) Was there an injury? <b>NO</b> (c) What was confirmed diagnosis? <b>U.S. WILLIAM V. JONES, DEP. COR. E. C. LENTER M. D. 9-9-25 1925 Address 5617 Rainier</b>		
9. Name of Father <b>Lillard</b> 10. Birthplace of Father (City or town) (State or Country) <b>Mo.</b> 11. Marital status of Mother <b>Unknown</b> 12. Birthplace of Mother (City or town) (State or Country) <b>Mo.</b>			19. Place of Burial, Cremation or _____ Date of Burial <b>Sept. 10 1925</b> <b>Lake View Cemetery</b>		
14. Informant <b>Mrs. Phoebe Lillard</b> Address <b>3934 Lucile St.</b>			20. Signature: <b>E. T. Hanley, M. D.</b> Registrar <b>Columbia Und. Co.</b> Address _____		
15. Filed <b>SEP 9 1925</b> <b>E. T. HANLEY, M. D.</b> Registrar			21. I HEREBY CERTIFY, upon having read the _____ <b>F. V. Reamussen</b> report and was unable to locate answers to questions. (Insert number of unanswered questions) <b>OCT 8 1925</b> (Signature of Underwriter)		

Two years after the Lillard event, Palmer was still acknowledging magnetic manipulation as the foundation of his 'new' treatment offering instruction in the practice to anyone suitably qualified. (1,20) Further evidence that Palmer viewed 'chiropractic manipulation' and 'magnetic manipulation' as analogous during this period can be seen in the way he changed the name of his publication *The Magnetic Cure* to *The Chiropractic* while continuing to publish it under the auspices of *Palmer's School of Magnetic Cure* (Figure 3). (1)

Moreover, in the first two editions of *The Chiropractic* in 1897, he simply interchanged the terms 'magnetic manipulator' and 'chiropractic manipulator' without explanation (Figure 4). (1,13) However, the significance of the Lillard event should not be underestimated (28) as it provided Palmer a platform for differentiating magnetic manipulation of the spine, commonly practised by magnetic healers of the day, with his 'new' treatment involving specific magnetic manipulation; an approach he named 'chiropractic'.

Figure 2 Extract of Articles of Incorporation of Palmer's School of Magnetic Cure (1896).

as I appear in my name  
ock is subscribed. The principal office or place  
of business of the corporation shall be at the Ci-  
ty of Davenport, in the County of Scott and State  
of Iowa. The general nature of the business  
of the corporation shall be to maintain a school  
at the said City of Davenport to teach the treatment  
of injuries and diseases by magnetic manipula-  
tions; and in connection with such school to estab-  
lish and maintain an infirmary. It may also  
establish branch schools and infirmaries at other  
places. It may also issue newspapers or other pre-

Figure 3 Name change from *Magnetic Cure* to *The Chiropractic* (January 1897)

**PUBLISHED BY**  
**PALMER'S**  
**School of Magnetic Cure**  
(Incorporated under the laws of the State of Iowa)  
FOR THE PURPOSE OF  
**Teaching How to Get Well and Keep Well**  
**Without Taking Poisonous Drugs.**  
**Office, School, and Place of Publication:**  
**Fourth Floor, Ryan Block, Corner Second**  
**and Brady Streets,**  
**DAVENPORT, IOWA.**

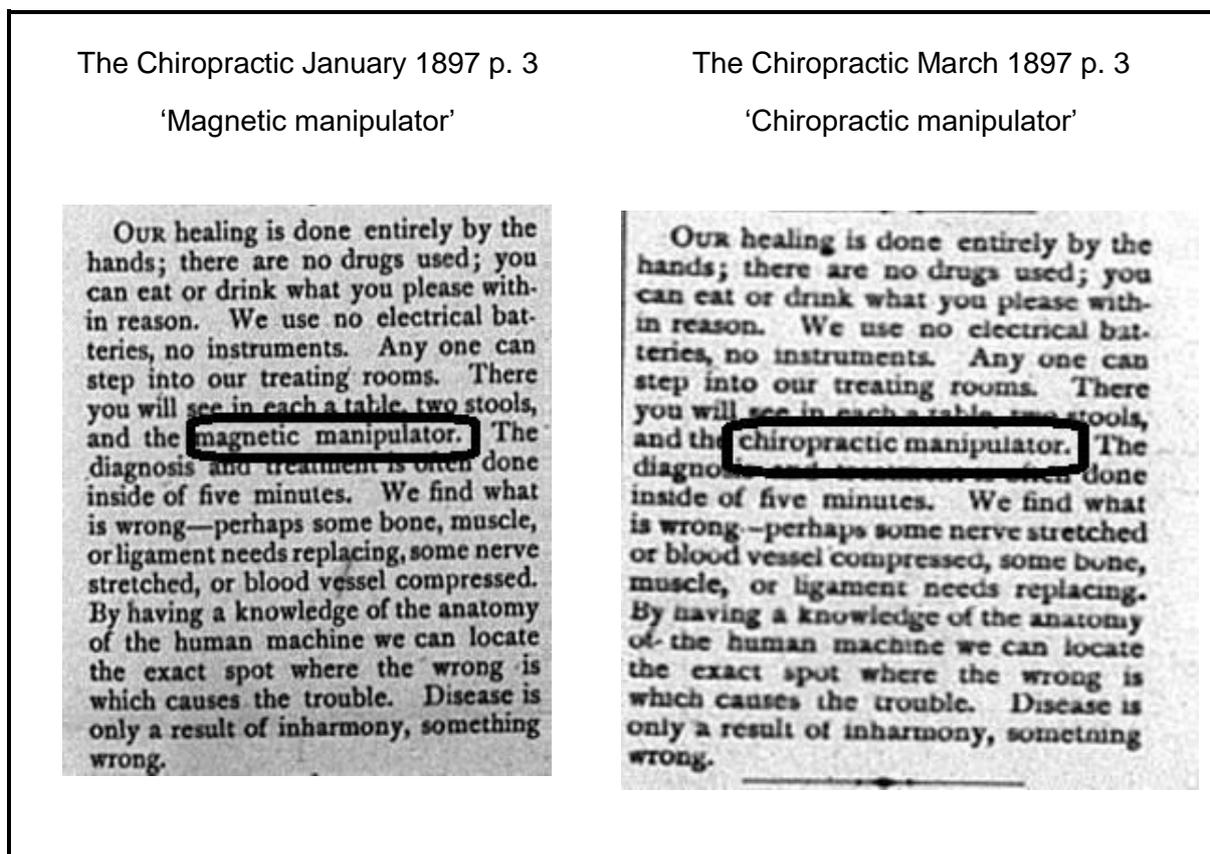
---

**THE CHIROPRACTIC** is issued by  
Palmer's School of Magnetic Cure.  
Subscription price, twelve numbers,  
25 cents. This small amount can  
be sent in postage stamps, and must  
be paid in advance. Address Dr.  
Palmer, Davenport, Iowa.

Location of the first adjustment

Despite ongoing discussions for more than a century, conjecture around the region and the precise level of Palmer's treatment on Lillard continues today. Early 20th century osteopaths claimed Palmer performed his treatment on the cervical spine but did not designate which cervical vertebra was treated. (29) Chiropractors of the time were divided on the region treated, with some specifying the level of the 'fourth cervical' vertebra (30) while others (18) claimed Palmer's account that he had treated the 'fourth dorsal [thoracic] vertebra' was accurate. (22,31) A more recent account offers the second cervical vertebra as the level treated by Palmer. (11) Complicating the issue are those who believe the Lillard 'event' was simply part of a made-up story designed to promote a 'new' treatment and that it should be relegated to chiropractic mythology. (32-35)

Figure 4 Comparison of a magnetic manipulator and chiropractic treatment rooms



Palmer's son B.J. Palmer, himself a chiropractor and graduate of the first class at the Palmer School of Chiropractic, claimed his father's treatment of Lillard in 1895 was directed at the second cervical vertebra. (36,37) These claims are at odds with Palmer's account of the event where he clearly states he "adjusted the fourth thoracic vertebra, not a cervical vertebra". (38) Complicating the issue are claims by B.J. Palmer that his father did not teach cervical manipulation at the Palmer School of Chiropractic in the early years, instructing his students to "keep away from the neck." (39) This avoidance was the result of physicians' concerns that cervical manipulation was 'dangerous.' So, to placate these physicians, Palmer avoided teaching the technique. Claims that Palmer did not treat the cervical spine during this period are supported by other statements by him where he describes how he "only adjusted between the fourth and twelfth dorsal (thoracic) vertebrae up until 1898," three years after the Lillard event. (36,39,40)

Furthermore, accounts from both D.D. Palmer and his son claim that cervical adjustments were not taught at the Palmer School until 1901 and before that, only dorsal and lumbar manipulations were taught. (41) Accounts by early graduates from the School support this view. O.G. Smith, an 1899 graduate, reported cervical adjustments were not taught during his training while T.H. Storey, a 1901 graduate, reported that during his time at the School they did not treat “the whole vertebral column”. (42-44)

Against this backdrop, attention is drawn to the question of physiological mechanism concerning the claim that the Lillard adjustment cured deafness. If the relevant nerve/s affecting the auditory system are wholly intracranial, how did adjusting the fourth thoracic vertebra affect Lillard’s deafness? Furthermore, given the passage of time since the event and the number of chiropractic thoracic manipulations (adjustments) performed since then, the literature is surprisingly silent on reports of any similar event following thoracic manipulation. Notwithstanding B.J. Palmer’s report (50 years after the Lillard event) to the contrary, D.D. Palmer’s steadfast claim that he adjusted the fourth thoracic vertebra, not a cervical vertebra, is the most likely outcome of this investigation.

## **DISCUSSION**

Having accepted the Lillard event occurred and that the most likely region treated by Palmer in September 1895 was the thoracic spine, it would be appropriate to review the research on the biological plausibility of spinal articular dysfunction as a generator of vertebrogenic deafness and the association of spinal manipulation with a reduction in hearing loss and deafness.

Despite D.D. Palmer’s unwavering claim that he cured Lillard’s deafness by adjusting the 4th thoracic vertebra, there is little corroborating evidence to support such a claim. (22,31,38) We could only find four publications linking improvement or resolution of deafness/hearing loss with thoracic adjustments. (45-48) Three of these were single case studies in which patients received a combination of thoracic, cervical, and lumbar spine adjustments, with one also including stretching exercises and trigger-point therapy. (47) In the fourth study, innocuous somatic stimulation in the form of transcutaneous electric nerve stimulation (TENS) was applied to the T4/T5 paraspinal muscles to ascertain if hearing acuity could be modulated. The procedure failed to produce any change in hearing acuity. (48) Together this evidence does not provide support for Palmer’s claim.

Several studies have reported a possible correlation between cervical spine dysfunction and vestibulocochlear disorders. For example, a review of the medical findings of 259 patients with well-defined functional deficits of the upper cervical spine reported that functional deficits in the upper cervical spine could lead to deafness. (49) In contrast, Bjorne’s controlled study reports a higher incidence of auditory disorders such as deafness amongst patients with cervical spine disorders. (50) As a result, reports have begun to appear in the literature claiming that cervical manipulation, particularly upper cervical spine manipulation, can improve hearing loss. (51) This stance is supported by at least one small study showing that dysfunction of cervical segments above C3 can cause hearing loss. (52)

What should be of concern is that there are no randomized controlled trials (RCTs) showing that manipulation can benefit hearing loss. (53) Therefore, continuing to promote

Palmer's claim that thoracic spine manipulation can 'cure' deafness is tenuous when assessed against modern scientific standards. (54)

## **FUTURE RESEARCH**

Future basic science research should focus on investigating a plausible mechanism to explain how adjusting the thoracic spine can affect auditory function. If a mechanism can be identified, it should form the basis for clinical research into the validity of this intervention as a treatment for auditory conditions. If a mechanism cannot be identified, then there is no other option but to relegate the claim to chiropractic mythology, making the debate about the spinal region treated by Palmer irrelevant.

## **CONCLUSION**

This article investigates the Lillard event in order to clarify the spinal level treated by DD Palmer in 1895. Based on D.D. Palmer's statements and other available evidence, we conclude that Palmer adjusted Lillard's fourth thoracic vertebra in 1895. Furthermore, there is presently no evidence to support the claim that spinal adjustments resolve vestibulocochlear disorders.

## **DECLARATIONS**

### ***Competing Interests***

The authors declare that they have no competing interests.

### ***Funding***

This study received no external funding,

## **REFERENCES**

1. Palmer DD. The Chiropractic. 1897;17:1-4.
2. Demers M, Gajic Z, Gerretsen E, Budgell B. An audiometric study of the effects of paraspinal stimulation on hearing acuity in human subjects – understanding the Harvey Lillard phenomenon. *Chiropractic and Manual Therapies*. 2014;22(39):1-5.
3. Braune W. An atlas of topographical anatomy after plane sections of frozen bodies. Philadelphia: Lindsay & Blakiston; 1877.
4. Gray H, Lewis WH. Anatomy of the human body. New York: Lea & Febiger; 1862.
5. Valdivia Tor J, Foley J. T4 vs C2: examining the conflicting statements of D.D. Palmer and B.J. Palmer regarding the Harvey Lillard adjustment. *Chiropractic History*. 2015;35(2):68-79.
6. MacPhail W, Bernedetti P. Straightening out chiropractic's claim as a treatment for autism. 2019. Accessed 20 July, 2020. Available from <https://www.spectrumnews.org/features/deep-dive/straightening-chiropractics-claim-treatment-autism/>.

7. Morrissy-Swan, T. Crack or quack: what's the truth about chiropractic treatment? 2019. Accessed 18 July, 2020. Available from <https://www.telegraph.co.uk/health-fitness/body/crack-quack-truth-chiropractic-treatment/>.
8. d'Entrement, Y. Chiropractors are bullshit. Accessed 20 July, 2020. Available from <https://theoutline.com/post/1617/chiropractors-are-bullshit>.
9. Singh, S, Ernst E. Trick or treatment: the undeniable facts about alternative medicine. New York: W.W. Norton and Company; 2008.
10. Shekelle PG, Adams AH, Chassin MR, Hurwitz E, Brook RH, *et al*. Changing views of chiropractic . . . and a national reappraisal of non-traditional health care. Accessed 17 July, 2020. Available from [https://www.rand.org/pubs/research\\_briefs/RB4539.html](https://www.rand.org/pubs/research_briefs/RB4539.html).
11. Washington State Board of Health. Bureau of Vital Statistics. Seattle. Record No. 2341. Certificate of death. 1925.
12. Twelfth Census of the United States. 1900. Accessed 4 June, 2020. Available from <https://www.familysearch.org/ark:/61903/3:1:S3HY-67H7-S5G?i=37&cc=1325221>.
13. Palmer DD. The chiropractic. 1897;18:1-4.
14. Palmer DD. The chiropractor's adjuster. Portland, Oregon: Portland Printing House Company; 1910.
15. Weiss LD. William Harvey Lillard: the life and story of the first. Chiropractic History. 2014;34(2):42-8.
16. Campbell JB, Busse JW, Injeyan HS. Chiropractors and vaccination: a historical perspective. Pediatrics. 2000;105(4):1-8.
17. Redwood D, Cleveland CS. Chiropractic In: Micozzi MS, editor. Principles and Practice of Manual Therapeutics. St. Louis, Missouri: Mosby; 2002:26-49.
18. Carver W. History of chiropractic. Self-published. 1936:407.
19. Adams P. Looking back to dad's brush with history. Journal Star. April 23, 1983.
20. Foley JM, Mirasol J. Valdeenia "Lillard" Simons: revealing the ruse and evaluating her impact on the persona of Harvey Lillard. Chiropractic History. 2017;37(2):54-70.
21. Palmer, DD. A brief history of the author and chiropractic. The chiropractor's adjuster. Portland, Oregon: Portland Printing House Company; 1910:18.
22. Palmer, DD. Organotherapy. The chiropractor's adjuster. Portland, Oregon: Portland Printing House Company; 1910:137
23. Palmer, DD. Chiropractic analysis. The chiropractor's adjuster. Portland, Oregon: Portland Printing House Company; 1910:37-38.
24. Palmer DD. The Magnetic Cure. 1896;15:1-4.
25. Keating JC, Charlton KH, Grod JP, Perle SM, Sikorski D, Winterstein JF. Subluxation: dogma or science? Chiropractic and Osteopathy. 2005;13(17):1-10.
26. Palmer DD, Palmer VT, Palmer BJ. Articles of incorporation: Palmer's school of magnetic healing. Scott County, Iowa;1896.
27. Wiese GC. New questions: why did D.D. not use chiropractic in his 1896 charter? Chiropractic History. 1986;6(6):63.
28. Keating JC. Heat by nerves and not by blood: the first major reduction of chiropractic theory, 1903 Chiropractic History. 1995;15(2):71-7.
29. Ashmore EF. The menace of chiropractic: inside history of this fake. The Osteopathic Physician. 1907;XII(5):1-24.
30. Dye AA. The discovery of chiropractic. The evolution of chiropractic: its discovery and development. Philadelphia: Self-published; 1939:31-46.
31. Palmer DD, Palmer BJ. The science of chiropractic, its principles and adjustments. Davenport, Iowa: Palmer School of Chiropractic Publishers; 1906:58
32. Kent C. The Harvey Lillard story: fact or myth? Dynamic Chiropractic. 2012;30(7):1-3.
33. Lerner C. The Lerner report: a history of the early years of chiropractic. La Habra, California: National Institute of Chiropractic Research; 1952.
34. Folk H. The religion of chiropractic: populist healing from the American heartland. Chapel Hill, North Carolina: The University of North Carolina Press; 2017.
35. Wardell W. Chiropractic: history and evolution of a new profession. St. Louis: Mosby; 1992.

36. Palmer BJ. Fight to climb. Davenport, Iowa: Palmer School of Chiropractic; 1950:61.
37. Sinnott RJ. The green books: Chiropractic Books; 1997.
38. Palmer, DD. Serous circulation. The chiropractor's adjuster. Portland, Oregon: Portland Printing House Company; 1910:407.
39. Palmer, DD. Neuropathy, by A.P. Davis. The chiropractor's adjuster. Portland, Oregon: Portland Printing House Company; 1910:256.
40. Palmer BJ. History in the making. Davenport, Iowa: Palmer School of Chiropractic; 1957.
41. Palmer DD, Palmer BJ. The science of chiropractic, its principles and adjustments. Davenport, Iowa: Palmer School of Chiropractic Publishers; 1906:349.
42. Faulkner TJ. The chiropractor's protege: the untold story of Oakley G. Smith's journey with DD Palmer in chiropractic's founding years. Rock Island, Illinois: Association for the History of Chiropractic; 2017:23-24.
43. Smith OG. Naprapathic genetics: being a study of the origin and development of naprapathy. Chicago: Self-published; 1932:5-6.
44. Palmer, DD. A spine-set personified. The chiropractor's adjuster. Portland, Oregon: Portland Printing House Company; 1910:469-478.
45. Pilsner R, Richardson A. Resolution of conductive hearing loss due to otitis media after chiropractic treatment. *Journal of Pediatric, Maternal & Family Health Chiropractic*. 2011;1:14-22.
46. Dwyer P, Boysen J. Resolution of conductive hearing loss due to otitis media after chiropractic treatment. *Journal of Clinical Pediatrics*. 2011;12(2):902-909.
47. Emary PC. Chiropractic management of a 40-year-old female patient with Ménière's disease. *Journal of Chiropractic Medicine*. 2010;9:22-27.
48. Demers M, Gajic M, Gerretsen E, Budgell B. An audiometric study of the effects of paraspinal stimulation on hearing acuity in human subjects – understanding the Harvey Lillard phenomenon. *Chiropractic & Manual Therapies*. 2014; 22(39):1-5.
49. Hulse M. Cervicogenic hearing loss. *HNO* 1994;42:604-613.
50. Bjerne A, Berven A, Agerberg G. Cervical signs and symptoms in patients with Meniere's disease: a controlled study. *Journal of Cranio-Mandibular Practice*. 1998;16: (2):194-202.
51. Vasaghi-Gharamaleki B, Naser Z. Predicting the risk of hearing impairment following the cervical spine diseases by measuring the cervical range of movements: a pilot study. *Basic and Clinical Neuroscience*. 2017;8(5):413-418.
52. Ferranti M, Keene K, Prothero C. Resolution of hearing loss after chiropractic manipulation. *Topics in Integrative Health Care*. 2014;5(3).
53. Bhatt J, Ghavami Y, Lin H.W, Djalilian H. Cervical spine dysfunctions in patients with chronic subjective tinnitus. *Otology and Neurotology*. 2015;36(8):1459.
54. Cowin R, Bryner P. Hearing loss, otalgia and neck pain: a case report on long term chiropractic care that helped to improve quality of life. 2002;32:119-132.