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ORIGINAL ARTICLE

Factors influencing parents' decisions to choose chiropractic care for their children in the UK

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Summary The attitudes and opinions of parents or guardians as the main decision-makers in their children's health care are likely to play an important role in determining whether or not children receive chiropractic care. The aim of this study was to determine the factors likely to influence parents or guardians when seeking chiropractic care for their children.

An anonymous questionnaire was sent via the head teachers of 8 primary schools in a typical UK county to the parents/guardians of children aged 5–11 who were attending the schools.

Of 987 questionnaires distributed, 259 were returned with 175 eligible for inclusion within the study (26% response rate). Healthcare choices for children were mostly made by mothers. Parents/guardians who already used complementary medicine (CAM), including chiropractic, were most likely to use chiropractic care for their children. Users of CAM were more likely to have a friend or family member in a healthcare profession than non-users of CAM. The family physician exerted considerable influence on the parent/guardian's decision to use chiropractic care for their children.

The results indicate that mothers are the main decision-makers when chiropractic care is chosen for a child and they are mostly influenced by the family physician and friends. This information could help inform campaigns aimed at dissemination of information about the practice and scope of paediatric chiropractic care.

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Introduction

Chiropractic has long been grouped in the category of complementary and alternative medicine

(CAM) along with therapies such as acupuncture, osteopathy, homeopathy and naturopathy. Use of CAM is increasing in Europe and the USA.^{1,2} Research into the use of CAM for children³ has indicated that in Europe, 25–50% of adults were CAM users as were 20–30% of children. Whilst other studies have found the percentage of child CAM users to be closer to 10–15%,^{4–7} chiropractic can still account for approximately 36% of all CAM use.^{4,8}

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Children present to CAM practitioners mostly with respiratory, ear, nose and throat problems, followed by musculoskeletal problems.⁴ Of these conditions, otitis media, asthma, allergies and infantile colic are common childhood complaints.⁷ Positive effects of CAM on well-being have been proposed, such as the reduced crying seen after spinal manipulation of children diagnosed with colic,⁹ which has been viewed as having a likely positive impact on the parent–child relationship rather than a direct effect on colic.¹⁰ Similarly, whilst chiropractic has been reported to have little direct effect on lung function and hyper-responsiveness in paediatric patients with asthma, treated children rate their quality of life substantially higher and their asthma severity substantially lower.^{11,12}

Given that approximately one third of children who use CAM receive chiropractic care, there is a case for the profession to promote the benefits of chiropractic care for children. This can only be done rationally if it is underpinned by knowledge of how responsible adults make the decision to seek chiropractic care for children. The aim of this study is to determine the factors influencing the decision of parents or guardians to seek chiropractic care for their children.

Methods

After approval for the research had been obtained from the Institutional Research and Ethics board, the parents or guardians of children were asked to complete an anonymous questionnaire by the head teachers of 10 primary schools in the south of England. These schools take children aged between 5 and 11 years. Parents received an explanatory note with the questionnaire and they were asked to complete and return the questionnaire to a collection point in the school. The questionnaire themes matched the four main objectives of the study (listed below) and items were constructed to provide information relevant to these themes. Face- and content-validity were determined by peer and preceptor evaluation and the final questionnaire modified in the light of a pilot study.

Objectives

The questionnaire sought answers to the following:

1. What factors are most likely to encourage or discourage parents/guardians to seek chiro-

practic care for their primary school-aged children?

2. Which parent/guardian is most responsible for the health care of their primary school-aged child?
3. Do parents/guardians consider chiropractic care to be suitable for primary school-aged children?
4. For what conditions would parents themselves consider using chiropractic?

Sample population

The subjects for this study were the parents of at least one primary aged child attending one of 10 infant, junior and primary schools feeding into a single local secondary school. This includes a wide socio-economic range. Only the schools whose head teacher agreed to distribute and collect the questionnaires took part in the study.

Information was provided with the questionnaire to clarify the aims of the study and to confirm all information was confidential. It also explained that by returning the completed questionnaire anonymously in a sealed envelope each parent was giving consent for the information to be used for the purposes of research.

Inclusion criteria

- Questionnaire completed by the child's legal guardian.
- At least one primary school aged child attending one of the participating schools.
- Questionnaire fully completed in all sections.

Exclusion criteria

- Questionnaire completed by anyone that was not a legal guardian as they would be unable to consent to treatment on the child's behalf, in accordance with UK law.
- Incomplete questionnaire.

Differences between groups was determined by assessing if the odds ratio was significantly different from 1 using Fischer's exact test.

Results

Response rate

987 questionnaires were distributed to 8 of the 10 primary schools and 259 were returned (26% response rate). Eighty-four questionnaires were

incomplete and therefore excluded, leaving 175 eligible for inclusion in this study. There was no significant difference in the return rate between the schools.

Type of responder

Most respondents (135/175, 77%) were aged between 31 and 50 years. Nearly all (165/175, 94%), were mothers of which most (135/175, 77%) were married. Very few (9/175, 5%) were fathers. Only one (0.6%) was the legal guardian (grandmother).

Education of responders

Almost half (81/175, 46%) of the responsible adults had a degree, yet only 16% (28/175) had advanced level qualifications of the type usually required for entry from school to University, and only 28% (49/175) had ordinary level school qualifications ($p \leq 0.003$). This may indicate that many of the responsible adults had obtained degrees via mature entry routes to higher education establishments.

Links with CAM or health care

The number of respondents with a family member or friend within the healthcare profession was 53/175 (30%). Of those families that used CAM, 50% had a member of family or a friend in the health care profession, compared with 24% of the non-CAM group ($p \leq 0.04$). Of the 175 families included within this study, 130 (75%) had used some form of CAM for one more members of the family and 38 (22%) had used chiropractic.

Household income

There was a wide spread of household income from under £10,000pa to over £70,000pa with no clear modal value (Fig. 1a). This is an important consideration for chiropractic in the UK as it is not usually available under the National Health Service (NHS), and so patients must fund their care privately.

Choice of CAM

Chiropractic ranked third (84/175, 48%) below osteopathy (130/175, 74%) and physiotherapy (144/175, 82%), with mothers being the prime users of CAM in all cases (Fig. 1b). This (non-significant) trend for mothers to embrace CAM more than fathers was brought sharply into focus when the relationship between the users of CAM was analysed where the child also received CAM (Fig. 1c). In this

case, the most common combination (76/175, 43%) was mother and child, which was significantly higher than the father and child combination (9/175, 5%, $p \leq 0.001$). Overall, low numbers of children had used CAM at all in this survey (38/175, 22%). Chiropractic did not rate highly amongst the choices (27/175, 15%) and the most popular was Homeopathy (65/175, 37%) (Fig. 1d).

Reasons for seeking CAM for children

Table 1 shows the reasons given by parents for seeking chiropractic and other CAM for their primary school aged children. Only chiropractic and reflexology were sought for well-being. Homeopathy was sought for the most diverse range of health problems.

Level of knowledge about chiropractic

When respondents were asked to consider how much they knew about chiropractic, 29% (51/175) felt they knew nothing, 56% (98/175) felt they knew a little but not enough to make an informed choice about choosing chiropractic care for their children and 15% (26/175) knew enough to make an informed choice about choosing chiropractic care for their children. Those respondents who were more likely to know nothing were aged below thirty and educated up to high school certificate of secondary education (GCSE) level, which is usually taken at age 16. Those respondents more likely to know enough to make an informed choice about chiropractic care for their children were aged over forty and educated to first degree level or above.

Belief that chiropractic is suitable for children

Most respondents (72%, 125/175) did not know if chiropractic was an appropriate treatment for children, 22% (39/175) believed it was suitable and 6% (11/175) believed it was unsuitable.

Factors to encourage/discourage the use of chiropractic

The most common reasons that would encourage respondents to seek chiropractic care for their children were: being advised to do so by their general practitioner (GP) (144/175, 82%, $p \leq 0.001$), a positive experience of a friend or relative (121/175, 69%, $p \leq 0.003$), advised by a health practice or school nurse (72/175, 41%, non-significant) and (in theory) availability of chiropractic through the NHS. Being advised against by the GP (100/175, 57%,

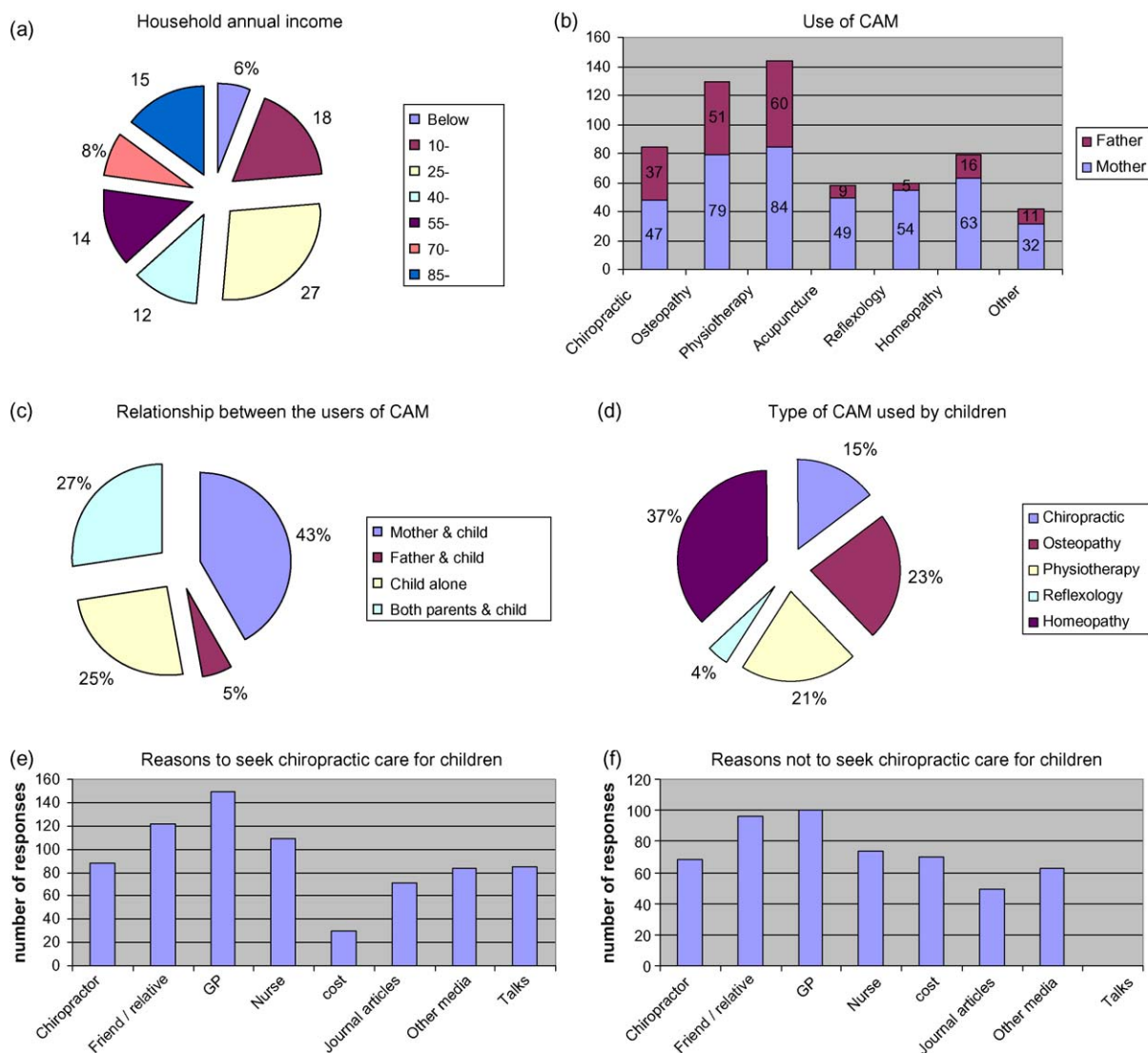


Figure 1 (a) Percentage distribution of household income of respondents, (b) use of CAM by mothers and fathers of the children, (c) relationship between CAM users and the children, (d) type of CAM used by children, (e) reasons for seeking chiropractic care for children, and (f) reasons given for not seeking chiropractic care for children.

Table 1 Reasons given for using CAM.

Type of CAM	Chiropractic	Homeopathy	Osteopathy	Physiotherapy	Reflexology
Reasons given for use	Well-being Back Neck Colic	Bruising Cough/cold Teething Attention deficit hyperactivity disorder Sprains Eczema Catarrh Minor injuries Asthma Kidney support	Back Colic Constipation Sleep/crying Nasal drainage	Back Broken limbs Motor difficulties Walking Leg injury Neck Balance	Well-being

$p < 0.028$) and a negative experience of a friend or relative (96/175, 55%, $p < 0.042$) were the most common reasons to discourage seeking chiropractic care (Fig. 1e and f).

Discussion

Response rate

The overall response rate for this survey was 26% for a sample size of 987. According to Bennekou¹⁴ this response rate is likely to have produced representative survey data since, after taking into account the size of the population, the segmentation analysis desired, the degree of variance and the tolerance for error, a survey response rate of 25% for a population of 1000 is calculated to give approximately 95% certainty with $\pm 5\%$ accuracy.

Demographic data

Ninety-four percent of respondents, who considered themselves the main person responsible for health-care decisions, were mothers. This is similar to the findings of other researchers, who all suggest that the mother is the parent who invests most in their child's health care.^{4,6,15,16}

Use of CAM and chiropractic

Most respondents identified at least one member of the family that had used some form of CAM; 50% of those CAM users were mothers and most of the children who had used CAM had parents that were also CAM users. These results reflect those found by Pitetti⁶ and Nyiendo¹⁵ who suggested that the main users of CAM are women and that, if they are also caregivers to children, then those children are also more likely to use CAM. A positive association has also been reported between social class and health, as an individual with a higher level of education may have greater knowledge or better access or exposure to information.¹⁷

In the current study, as with an earlier one by Madsen,³ no relationship was found between the total household income and the use of CAM for their children, though this contrasts with a number of other studies which suggest that tertiary level education and higher family income are linked to the choice to use CAM.^{17–22} Almost all the respondents in the current study were over the age of 30 and many were educated to degree level or above. Leboeuf et al. state that education is a strong determinant of social class, which in turn has a

positive association with health.¹⁷ They also state that health-related behaviour, attitudes and outcomes are governed by educational attainment such that the better educated have better access to information resulting in better awareness, and more efficient use, of available health services. Since children are generally dependent on their parents, it is likely that they are influenced by the experiences and opportunities of their parents and in particular the mother. Indeed, Case et al. have suggested that the educational level of the mother is more significant than that of the father in terms of health care because the mother is the main health care investor.¹⁶

Factors affecting use of chiropractic

There appear to be a number of factors that distinguish CAM users, including health awareness, making good food choices, monitoring consumption of preservatives and caffeine as well as taking regular exercise, and dissatisfaction with orthodox medicine and its responses medical profile.²³ However, in many studies the factor most likely to encourage respondents to seek chiropractic care for their children was positive feedback from a family member or friend.^{4,6,24} The results of the current study indicate that the physician exercises considerable influence when parents/guardians are making healthcare decisions for their children, which may reflect the relatively new position of chiropractors as regulated healthcare professionals in the UK healthcare scene. As part of a wider study of CAM in the UK, White⁸ reported that over 50% of UK family physicians felt that chiropractic should be available on the NHS. In line with this, most respondents in the current study said availability of chiropractic on the NHS would encourage them to choose it. Despite this, family physicians continue to display a low rate for referral to CAM, including chiropractic, and it has been suggested that this may be because family physicians want more quality published research on effectiveness, or because of they worry about the cost incurred by their patients when using CAM as a form of private health care.¹³ The latter concern contrasts with the results of the current study where only 39% ranked cost as a factor that would discourage them from using CAM. This might indicate a mismatch between the family physician's perceptions about the affordability of CAM and those of their patients.

The second most influential factor affecting a parent/guardian's decision to choose chiropractic care for their children was the opinion of friends and family. The importance of personal referrals is central to most practice-building guides and appears to

be in line with the personal experience of chiropractors.^{4,6,25}

The third most influential factor was the school or practice nurse. This may reflect the trend for the school nurse to take over many roles previously carried out by others, such as health visitors.²⁶

Level of knowledge

The majority of respondents knew little or nothing about chiropractic and its suitability for primary school-aged children. As a result, they felt they could not make an informed choice about this form of health care. This lack of knowledge was reflected by the 72% of respondents who indicated that they did not know if chiropractic was appropriate for children. This result indicates that some adults who have chosen chiropractic care for themselves have not investigated the appropriateness of chiropractic care for their children. The reasons for this remain obscure; nevertheless, more information

about chiropractic for children clearly needs to be made available to, and accessible by, parents and guardians and, if a target group of adults were to be selected on the basis of the current study, they would be mothers and family physicians.

Conclusion

The main reason given by parents/guardians for not choosing chiropractic care for their primary school-aged children was lack of knowledge. A campaign to disseminate information about the practice and scope of chiropractic care is clearly required to make parents/guardians aware of this healthcare option that is available for their children. Any targeted approach to such a campaign should be guided by the finding that the key parental decision-maker in this case is usually the mother, who in turn is heavily influenced by the opinions of friends and the family physician in the UK.

Appendix A

Please circle the letter that marks the most appropriate answer.

1. Are you the guardian who makes most of the health care choices for the child who brought this survey home?

Yes..... (PLEASE CONTINUE TO Q2)

No.....(PLEASE PASS THIS SURVEY TO THAT PERSON FOR COMPLETION IF POSSIBLE)

2. What is your relationship to the child who brought this questionnaire home?

Mother

Stepmother.....

Father

Stepfather.....

Legal Guardian..... Please specify _____

3. Into which age group do you fall?

16 – 20 yrs.....

21 – 25 yrs.....

26 – 30 yrs.....

31 – 35 yrs.....

36 – 40 yrs.....

41 – 45 yrs.....

46 – 50 yrs.....

50 + yrs.....

4. What is your marital status?

Single.....

Married.....

Divorced.....

Cohabiting.....

Appendix A (Continued)

5. Which best describes the level to which you have been educated?

- CSE.....
- O level / GCSE.....
- A level.....
- College / University Degree...
- PhD.....
- Other..... Please specify _____

6. Into which category does your total household income (incl. benefits) fall?

- Less than £10K per year....
- £10K - £25K.....
- £26K - £40K.....
- £41K - £55K.....
- £56K - £70K.....
- £71K - £85K.....
- More than £60,000 per year...

7. To which ethnic group do you consider yourself to belong?

- White.....
- Black – Caribbean.....
- Black – African.....
- Indian.....
- Pakistani.....
- Chinese.....
- Other..... Please specify _____

8. To which of these religions do you consider yourself to belong?

- Christianity....
- Hinduism.....
- Judaism.....
- Sikhism.....
- Islam.....
- Other..... Please specify _____
- None.....

9. How many children are in your family (that live with you)?

- 1.....
- 2.....
- 3.....
- 4.....
- 5+.....

10. How many of these children are primary school- aged (4 – 11yrs)?

- 1.....
- 2.....
- 3.....
- 4.....
- 5+.....

11. Are you or any of your family or friends involved in a healthcare profession?

- No.....
- Yes.....

If Yes please state relationship and profession in the space provided below.

Appendix A (Continued)

12. Have you or your partner ever used complementary or alternative medicine?

No.....

Yes.....

If Yes please state therapy used and for what purpose in the space provided below.

13. Have you ever used complementary or alternative medicine for your primary school- aged child(ren)?

No.....

Yes.....

If Yes please state therapy used and for what purpose in the space provided below.

14. How much do you know about chiropractic?

Nothing.....

A little but not enough to make an informed choice
about choosing chiropractic care for my child(ren).....

Enough to make an informed choice about choosing
chiropractic care for my child(ren).....

15. Have you or your partner ever sought chiropractic care for yourself?

No..... (GO TO Q17)

Yes.....

If Yes please state the reason treatment was sought in the space provided below.

16. If you answered Yes to Q15 how satisfied were you with your chiropractic care?

Very satisfied.....

Satisfied.....

Not satisfied.....

Very unsatisfied.....

Please use this space to make any additional comments as to why.

17. Have you ever sought chiropractic care for your primary school- aged child(ren)?

No..... (GO TO Q19)

Yes.....

If Yes please state what age the child was and the reason treatment was sought in the space provided below.

Appendix A (Continued)

18. If you answered Yes to Q17 how satisfied were you with your child(ren)'s care?

- Very satisfied.....
- Satisfied.....
- Not satisfied.....
- Unsatisfied.....

Please use this space to make any additional comments as to why.

19. Do you believe chiropractic to be an appropriate treatment for children?

- Yes.....
- No..... (GO TO Q21)
- Undecided..... (GO TO Q21)

20. If you answered Yes to Q19 at what age do you consider to be the earliest that a child may receive chiropractic treatment?

- 0 – 3 months.....
- 3 – 6 months.....
- 6 months – 1 year.....
- 1 – 5 years.....
- 5 – 10 years.....
- 10 – 16 years.....

21. Please mark below on how likely each factor would be to **encourage** you to seek chiropractic care for your primary aged child(ren).

	Very likely	Likely	Unlikely	Very unlikely	Don't know
Your own experience of chiropractic care					
Recommendation from a friend or relative					
Recommendation from your GP					
Recommendation from your health practice nurse or school nurse					
Recommendation from your school educational psychologist					
A desire to try a natural treatment before conventional medicine					
You have tried everything else and nothing has worked					
Scientific research in recognised research journals					
Scientific research as reported by the media (TV, radio, newspaper, magazines, etc)					
Attending a talk by a qualified and registered chiropractor					

Appendix A (Continued)

22. Please mark below on how likely each factor would be to **discourage** you to seek chiropractic care for your primary school- aged child(ren).

	Very likely	Likely	Unlikely	Very unlikely	Don't know
I don't know enough about chiropractic					
Cost					
My own experience of chiropractic care					
A friend or relative's experience of chiropractic care					
Advised against by GP or other health professional					
Lack of chiropractors in my area that treat children					
Lack of scientific proof of the effectiveness of treating children with chiropractic					
Poor reports by the media (TV, radio, newspaper, magazine, etc)					

23. Please mark below what childhood conditions you might consider seeking chiropractic care for?

	Yes	No	Maybe
Headaches			
Facial pain			
Asthma/Breathing problems			
Repeated ear infections			
Behavioural disorders			
Prolonged bedwetting			
Frequent constipation			
Digestion problems			
'Growing pains'			
Leg pain			
Arm pain			
Back pain			
Neck pain			
Restricted movement of the head / neck			
Restricted movement of other joints			
'Clumsiness' / coordination problems			
Check-up after bumps or falls			

Appendix A (Continued)

24. Please mark below how useful you believe chiropractic care to be in **improving** the following childhood conditions.

	Very useful	Useful	Limited use	No use	Harmful	Don't know
Headaches						
Facial pain						
Asthma / Breathing problems						
Repeated ear infections						
Poor sleep pattern						
Behavioural disorders						
Prolonged bedwetting						
Frequent constipation						
Digestion problems						
'Growing pains'						
Leg pain						
Arm pain						
Back pain						
Neck pain						
Restricted movement of the head or neck						
Restricted movement of other joints						
'Clumsiness' / coordination problems						
Preventative care against childhood knocks / bumps						

Please use this space to comment upon this questionnaire and add any thing you feel is relevant to explain why you would or would not choose chiropractic care for your primary aged child(ren).

Many thanks for taking the time to complete this questionnaire. Please make sure you have completed all the relevant questions so your data may be included. Place your completed questionnaire in the envelope provided, seal it and return it to your child's school reception where a collecting box is situated.

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