

Chiropractic management of episodic tension-type headache: a survey of clinical specialists

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Tension-type headache (TTH) is a highly prevalent condition experienced annually by 30–70% of the population. As a chief complaint, it occupies 5–8% of chiropractors' caseloads, but is probably more prevalent in multiple complaint cases. While numerous clinical descriptions exist in the literature of the management of TTH by chiropractors, and while there is a small body of clinical trials of the treatment of non-migrainous headache by spinal manipulation, there is no systematic survey of the approaches to its treatment by chiropractors.

The goals of this study were to determine the test-retest reliability of a questionnaire designed to identify the most commonly used treatments for TTH and to report on any consistent findings as a potential profile of typical practice approach. The respondents consisted of a group of Canadian chiropractic clinical specialists. Respondents were asked to complete a survey which consisted of a comprehensive list of chiropractic treatment procedures including standard manual manipulations and mobilisations, soft tissue therapies, modalities, exercises, behavioral therapies, acupuncture, nutrition and four "systems" techniques. The respondents were asked to rate their frequency of use of these procedures on a 4-point scale ranging from "always" to "never". The surveys were completed twice within a two day interval.

The response rate was 18/25 (72%). Eighty-seven percent (87%) of the items were rated identically on both surveys. All but one of the items achieved a statistically significant reliability coefficient. The highest rated items were "upper cervical manipulations", "upper cervical soft tissue therapy" and "neck stretching exercises". The items which received the lowest endorsement were:

Les céphalées de tension (CT) sont très répandues et touchent chaque année 30 pour cent de la population. Les CT motivent à elles seules de 5 à 8 pour cent des consultations auprès des chiropraticiens, mais elles sont sans doute plus fréquentes si on les considère comme l'un des symptômes d'une affection. Bien que la documentation scientifique fasse état de nombreuses descriptions cliniques de traitement des CT par des chiropraticiens et d'un petit nombre d'essais cliniques de traitement des céphalées non migraineuses par des manipulations vertébrales, aucune enquête systématique n'a été menée sur les méthodes de traitement des CT par les chiropraticiens.

La présente étude avait pour objet de vérifier la fiabilité d'un questionnaire visant à dégager les traitements les plus courants des CT et de rendre compte des réponses les plus fréquentes pouvant aider à dresser le profil d'une démarche typique. Les personnes interrogées avaient été recrutées parmi un groupe de spécialistes cliniques canadiens en chiropratique. On leur a demandé de remplir un questionnaire présentant la liste exhaustive de traitements en chiropratique, à savoir les manipulations et les mobilisations manuelles courantes, les traitements des tissus mous, les modes de traitement, les exercices, les thérapies comportementales, l'acupuncture, l'alimentation et les techniques des quatre « systèmes ». Il s'agissait d'évaluer, de un à quatre, ou de « Toujours » à « Jamais », la fréquence d'utilisation des techniques mentionnées ci-dessus. Le questionnaire devait être rempli deux fois, à deux jours d'intervalle.

Le taux de réponse a été de 18 sur 25, soit de 72 %. Quatre-vingt-sept pour cent des réponses ont été identiques les deux fois. Toutes les questions, à

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chiropractic procedures to the dorso-lumbo-pelvic spine, most therapy modalities and the “systems” techniques which were included in the survey. Years in practice appeared to have very little effect on the use of the various procedures.

With very minor exceptions, this group of respondents provided reliable and consistent responses which were also consistent with the clinical trial literature on the treatment of headache by spinal manipulation. We interpret this to indicate that the survey instrument has an acceptable level of reliability and validity for use in any larger study of field practitioners’ approaches to the treatment of TTH. The set of procedures endorsed by this group of specialists is presented as a possible set of “best-evidence practices” in the chiropractic management of tension-type headache. (JCCA 1998; 42(4):209–215)

KEY WORDS: chiropractic, manipulation, headache.

Introduction

Tension-type headache (TTH) is a highly prevalent condition. Annual prevalence rates reported in a Canadian population-based survey¹ were 36% of respondents or 30% of the population for moderately severe headaches. A recent Danish survey² reported a 66% annual prevalence rate for any level of tension-type headache (56% for men; 71% for women).

In 1988, the International Headache Society (IHS)³ reclassified tension or muscle contraction headache as “tension-type” (Category 2) and created two major subcategories: Episodic TTH (ETTH), in which headache frequency is less than 15 per month, and “Chronic” TTH for sufferers with more than 15 headaches per month. The former category is by far the most prevalent, with less than

l’exception d’une seule, ont atteint un coefficient de fidélité statistiquement significatif. Les traitements pour lesquels on a enregistré le plus de réponses sont les « manipulations des vertèbres cervicales hautes », le « traitement des tissus mous de la colonne cervicale haute » et les « exercices d’étirement du cou ». Les points pour lesquels on a enregistré le moins de réponses sont les techniques de chiropratique touchant la colonne dorsale, la colonne lombaire et la colonne sacrée, les modes de traitement (la plupart) et les techniques des quatre « systèmes », dont il était question dans l’étude. Le nombre d’années d’expérience semble avoir eu peu d’incidence sur le choix des diverses techniques.

À quelques exceptions près, les personnes interrogées ont fourni des réponses fiables, constantes et compatibles avec la documentation scientifique sur les essais cliniques portant sur le traitement des céphalées par manipulations vertébrales. Nous en déduisons que le questionnaire est un outil qui offre un degré acceptable de fidélité et de validité et qui peut être utilisé pour des études de plus grande envergure sur les divers traitements des CT préconisées par les praticiens. Les techniques auxquelles souscrit le groupe de spécialistes sont présentées comme un ensemble possible de « méthodes de la meilleure preuve » dans le traitement en chiropratique des céphalées de tension. (JACC 1998; 42(4):209–215)

MOTS CLÉS : chiropratique, manipulation, céphalée.

5% of TTH sufferers in the “chronic” category.² In both headache groups, adult sufferers typically report lengthy durations of their headache conditions. The other IHS criteria for TTH are listed in Table 1.

Estimates of the proportion of headache sufferers treated by chiropractors range from 3–9% of patients in general practice.⁴ In one study,⁵ 35% of headache patients in a chronic pain programme had received prior chiropractic treatment.

There is a small body of clinical trials of spinal manipulative therapy for non-migrainous headaches^{6–9} (see reviews in,^{10,11}) although only one study applied the IHS criteria for TTH.⁸ Spinal manipulative therapy (SMT) appears to be more efficacious than ice treatment⁷ or soft tissue therapy⁹ and is equal in effectiveness to a short

Table 1
Criteria for TTH from the IHS Classification³

Description: “Recurrent episodes of headache lasting minutes to days. The pain is typically pressing/tightening in quality, of mild or moderate intensity, bilateral in location and does not worsen with physical activity. Nausea is absent, but photophobia or phonophobia may be present”.

Diagnostic Criteria:

- A. At least 10 previous headache episodes fulfilling criteria B–D below.
 Number of days with such headache < 180 per year (<15 per month).
- B. Headache lasting from 30 min to 7 days.
- C. At least 2 of the following pain characteristics:
 1. Pressing/tightening (non-pulsating) quality.
 2. Mild or moderate intensity (may inhibit, but does not prohibit activities).
 3. Bilateral location.
 4. No aggravation by walking stairs or similar physical routine.
- D. Both of the following:
 1. No nausea or vomiting (anorexia may occur).
 2. Photophobia and phonophobia are absent, or one but not the other is present.
- E. At least one of the following:
 1. History, physical and neurological examinations do not suggest any other headache diagnosis.
 2. History and/or physical and/or neurological examination do suggest such disorder, but it is ruled out by appropriate investigations.
 3. Such disorder is present, but tension-type headache does not occur for the first time in close temporal relation to the disorder.

course of low-dose amitriptyline therapy,⁸ although the authors of this latter study reported longer-lasting relief post-treatment in the group receiving chiropractic SMT.

While many articles and book chapters exist which outline a variety of approaches to the conservative, non-pharmacologic treatment of TTH,^{12,13} no systematic survey of practitioners' approaches has been reported. In other words, there is no reliable data on which treatment approaches chiropractors actually use in daily practice in the treatment and management of TTH.

This study presents data from a relatively simple questionnaire completed by a group of chiropractic clinical specialists. By having practitioners complete the survey twice within a two-day interval, we determined the test-retest reliability of the instrument. This is a necessary requisite for employing this survey in a larger, random sample of field practitioners to determine their common practices. This report also presents some preliminary data on the set of common procedures used by this specialist group

which, taken together, may represent a collection of “best-evidence” practices in the chiropractic management of TTH.

Methods

The questionnaire contains a list of manual and conservative therapy procedures which were gleaned from reviewing the published clinical trials and other clinical reports (as reviewed above). The list and its format were reviewed by a group of content and methodology experts at our institution for face and construct validity. After incorporating their suggested revisions, the final questionnaire was prepared.

Respondents were asked to rate their use of each procedure using a four-point scale: 3 = always, 2 = sometimes, 1 = infrequently and 0 = never. No attempt was made to solicit ratings of the respondents' perceived effectiveness of these procedures. A small set of demographic items was included as well as an item asking respondents to indicate

whether their approach to scoring the questionnaire (and therefore, their management approach) was “typical of most chiropractors”.

The survey was mailed to a convenience sample of 25 Fellows of the College of Chiropractic Clinical Sciences (CCS) (approximately half the members of this organization). It was felt that such practitioners would be more inclined to respond, and would therefore better suit the needs of this reliability study.

The practitioners were mailed two copies of the questionnaire and asked to complete one immediately and then the other two days later. Aside from instructions on the scoring scale, respondents were instructed to consider their answers with respect to the treatment of “their last five tension-type headache patients”.

Data were analyzed using SPSS for Windows. Mean (sd) scores of each item were produced. The paired questionnaires were analyzed for the percentage of items which were scored identically both times as well as for scores of

a one-rank or a two-rank difference. These differences were analyzed by McNemar’s non-parametric Chi Square test as compared to chance findings. Spearman Rank Correlation Coefficients were also calculated for each item. It was decided, a priori, that, for any item where identical scoring was obtained at least 85% of the time, then the paired answers would be pooled and cross-tabulations for career length (< 10 > years) would be computed in order to determine if the responses were truly homogeneous across practice experience.

Results

The survey response rate was 18/25 or 72%. Respondents’ mean age was 42 years (range: 30 to 60). All but one of the respondents was male. The mean (sd) number of years in practice was 16.4 (8.5), with 31% under 10 years and 69% ten years or over. All respondents were Fellows of the CCS.

The percentage of identical answers was 87%, while the

Table 2
Results for Manual and Physiotherapeutic Procedures

Procedure	Mean(sd)	Spearman’s r
Upper cervical SMT	2.5 (.63)	.74 <i>p</i> = .0005
Soft tissue therapy	2.2 (.77)	.85 <i>p</i> = .0005
Trigger point work	1.93 (.80)	.94 <i>p</i> = .0005
Upper cerv. mobilizations	1.75 (.77)	.84 <i>p</i> = .0005
Massage	1.73 (.88)	.86 <i>p</i> = .0005
Mid-cerv. SMT	1.56 (.51)	.88 <i>p</i> = .0005
Upper thoracic / rib SMT	1.27 (.46)	.44 <i>p</i> = .12
Lower cervical mobilization	1.25 (.77)	.95 <i>p</i> = .0005
Modalities (any)	.93 (.70)	.87 <i>p</i> = .0005
IFC	.82 (.98)	.87 <i>p</i> = .0005
Ultrasound	.75 (.75)	.91 <i>p</i> = .0005
Thoracic mobilizations	.75 (.77)	.72 <i>p</i> = .0005
Low Volt	.67 (.89)	.84 <i>p</i> = .0005
TMJ STT	.67 (.72)	.82 <i>p</i> = .0005
Shoulder mobilizations	.50 (.63)	.78 <i>p</i> = .0005
TMJ SMT	.47 (.52)	1.0 <i>p</i> = .0005
Lower dorsal SMT	.44 (.63)	.77 <i>p</i> = .0005
Cranial STT	.40 (.74)	.64 <i>p</i> = .01
Sacroiliac SMT	.38 (.62)	.88 <i>p</i> = .0005
Lumbar SMT	.31 (.48)	.86 <i>p</i> = .0005
Scapular SMT	.25 (.45)	.83 <i>p</i> = .0005

percentage of one-rank and two-rank differences were 12% and 1%, respectively. In other words, respondents agreed with themselves within one ranking 97% of the time. None of the McNemar's tests achieved a p value greater than .03, indicating that all paired comparisons achieved agreement levels which were significantly different from chance.

The mean(sd) scores (ranked from highest to lowest) and the Spearman Correlation coefficients for each item are shown in Tables 2 and 3, for manual and non-manual procedures, respectively. The only item which achieved a test-retest agreement above 85% and which demonstrated differences related to career length on cross-tab analysis was "postural exercises", with 76% percent of more experienced practitioners endorsing this as compared to 19% of those with less than ten years' experience.

Table 4 lists additional procedures volunteered by the respondents which were not directly included in the survey. Forty-seven percent (47%) of respondents indicated that their approach to treating TTH was "typical of most chiropractors", while 88% indicated that there were no other treatment approaches which they used which were not included in the questionnaire.

Discussion

The 72% response rate was deemed adequate for our purposes. The sample of respondents certainly differs from the field practitioner profile in being Clinical Specialists, virtually all of whom were males. Aside from the gender bias, this sample was preferred because the additional training and experience of these specialists permits the results of the survey to represent the "best-evidence practice" approach to the chiropractic management of TTH. As well, CCS members were thought to be more likely to have a consistent approach to treating TTH, thereby increasing the likelihood of highly consistent responses both within and between respondents. Our data bears this supposition out.

A review of Tables 2 and 3 reveals that most items achieved a very high level of test-retest reliability. No item with a correlation below 0.70 achieved a mean score above 2/3, indicating that these less reliably endorsed procedures were employed much less frequently than those achieving higher levels of reliability. The items whose reliability coefficients were below 0.70 but which achieved an average endorsement between "sometimes" and "usually" (i.e., between 1-2/3) were: upper thoracic and costovertebral

Table 3
Results for Non-manual and "systems" therapies

Procedure	Mean(sd)	Spearman's r
Neck stretching	2.13 (.81)	.88 $p = .0005$
Shoulder stretching	1.5 (.82)	.70 $p = .003$
Postural exercises	1.5 (.73)	.85 $p = .0005$
Neck strengthening	1.3 (.58)	.68 $p = .003$
Self - STT	1.1 (.62)	.53 $p = .03$
Relaxation advice	1.1 (.72)	.66 $p = .005$
Aerobic exercise	1.1 (.72)	.83 $p = .0005$
Stress management	1.0 (.57)	.54 $p = .03$
Psychological counsel.	.75 (.68)	.96 $p = .0005$
Shoulder strengthening	.56 (.63)	.90 $p = .0005$
Activator	.38 (.62)	.99 $p = .0005$
Somatics	.38 (.50)	.62 $p = .01$
AK	.19 (.54)	.99 $p = .0005$
SOT	.13 (.34)	.68 $p = .004$
Heel lifts	.06 (.25)	.68 $p = .004$
Craniosacral Therapy	0	
Homeopathy	0	

manipulation, stress management, advice on relaxation therapy, self-stretching advice and the prescription of neck strengthening exercises. With these few minor exceptions, we consider that this survey has adequate test-retest reliability for use in a larger sample of field practitioners.

The procedures which received the highest level of endorsement (i.e., used at least half the time (using a cut-off value of 1.5/3)) were, in descending order:

- upper cervical manipulation;
- soft tissue therapy, in general;
- neck stretching exercises;
- trigger point therapy;
- upper cervical mobilization;
- massage;
- mid-cervical manipulation;
- shoulder stretches, and
- postural exercises.

It is interesting that these procedures reflect what might be described as a “holistic structural” approach, in that they combine segmental and regional manipulation, mobilization and exercises to both (putatively) correct underlying spinal dysfunction and to provide supportive or rehabilitative benefit. These procedures may be considered, and are thus offered, as a set of “best-evidence” practices endorsed by this group of Clinical Specialists. There were virtually no differences in the treatment approaches endorsed by those practitioners with less or more than ten years of practice experience. The one exception, i.e., the greater endorsement of “postural exercises” by the more experienced group, may reflect an even more holistic model in which these practitioners were trained.

These results, of course, do not imply that these procedures actually have proven effectiveness, particularly in every case of TTH, and particularly in the case of the non-manipulative procedures, but that they are a set of procedures deemed by specialist-level practitioners to have value in the management of ETTH. These findings are also consistent with the clinical trial literature (as reviewed above) and with the recommendations of a recent RAND consensus panel on the appropriateness of manipulation for cervical spine disorders, and headache in particular.¹⁴ This leads to our conclusion that the survey form has good construct validity, a conclusion which is further strengthened by the finding that so few respondents felt that there were any important additional procedures.

The set of procedures which received low endorsement (mean values below 1/3) include, with one exception (“psychological counseling”), additional manual therapies to areas which are apparently viewed by these respondents as of much less importance in the management of TTH. These include: manipulation of the lower dorsal, lumbar and sacroiliac joints as well as the temporomandibular joint (TMJ); mobilizations to the shoulders and thoracic spine; soft tissue therapy to the cranial and TMJ areas; specific physiotherapeutic modalities (although the use of any physiotherapeutic modality was endorsed at just below the “sometimes” level); strengthening exercises to the shoulder area; generalized approaches to somatic therapy and nutrition, and four “systems” approaches to chiropractic treatment (Applied Kinesiology, Sacro-Occipital Technique, Activator Methods and Craniosacral Therapy).

The lack of endorsement of treatment procedures for the TMJ area is interesting, particularly given the well-established sensory-motor connections between the TMJ and upper cervical regions¹⁵. One could surmise that these specialists hold the opinion that sufficient benefit can be obtained by directing their treatments at the upper cervical region alone.

Two procedures, homeopathy and craniosacral therapy were endorsed by none of the respondents. These results might be interpreted as representative of a narrower, “non-holistic” perspective which some may attribute to clinical specialists. We prefer to interpret these results as representing the strong evidence-based approach to practice adopted by most such specialists, although it should be noted that even some of these respondents did endorse some of these less commonly used practices. The proce-

Table 4
Additional therapies suggested by respondents
(# of respondents)

<p>1. MODALITIES:</p> <ul style="list-style-type: none"> – ICE and/or HEAT (2) – TRACTION (1) – TENS (1)
<p>2. OTHER TREATMENTS:</p> <ul style="list-style-type: none"> – CERVICAL PILLOW (1) – HYPOGLYCEMIC MANAGEMENT (1)

dures which were not included in the questionnaire and which were offered by the respondents are shown in Table 4. Perhaps it was felt that these procedures could be of some benefit to a subset of their TTH patients. The most commonly cited reason for the respondent to have the view that their approach to treating TTH might not be fully representative of the typical chiropractor's approach was that field practitioners might "adjust more of the full spine". To date, such a "full spine" approach to chiropractic spinal manipulation has not been investigated in any of the clinical studies, so its use is strictly empirical.

Conclusion

The questionnaire used in this survey has been found to have an acceptable level of test-retest reliability. The procedures most highly endorsed by the respondents, themselves a somewhat selected group of practitioners, are consistent with the evidence in the literature as to which procedures have demonstrated effectiveness in the treatment of TTH or non-vascular headache. In this respect, this questionnaire has been shown to have good content and construct validity. The questionnaire contains a sufficiently wide variety of items so that its ability to capture the breadth of practice approaches amongst general practitioners is likely very high. This would apply to those practitioners who employ both standard and unconventional procedures such as nutritional counseling, somatic therapy, full-spine manipulation and "systems" techniques.

At present, we offer this profile of specialist-endorsed procedures, particularly *upper cervical manipulation and soft tissue therapy accompanied by a stretching exercise prescription*, as a set of "best-evidence practices" for use in chiropractic practice for the treatment of tension-type headache.

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