

Cognitive–behavioral therapy of pediatric headache

Are there differences in efficacy between a therapist-administered group training and a self-help format?

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Abstract

Objective: The efficacy of cognitive–behavioral training in a therapist-administered group format (TG) and a self-help format (SH) for children with recurrent headache was compared. **Methods:** A total of 77 children (10–14 years) were randomly assigned to TG ($n=29$), SH ($n=27$) and a waiting-list control group (WC; $n=19$). TG consisted of eight 90-min sessions with groups of five children. SH was conducted via a written manual in which instructions were given and homework tasks were assigned. In both training formats, the topics covered were identical (e.g., self-monitoring of headache, trigger analysis, relaxation, etc.). Main outcome variables related to changes in headache intensity, duration and frequency as assessed with a diary prior to and following training, as well as at 6-month

follow-up. **Results:** Children reported a high degree of satisfaction with the training. No significant differences between the two conditions were found. Differences between treatment groups and WC were statistically corroborated for two headache variables. In both treatments, headache decreased markedly from posttraining to follow-up, with 68–76% of children reporting clinically significant improvement. No differential effects of age, gender or headache diagnosis were found. Changes in self-concept and ability to cope with stress after training point to further positive effects of the intervention. **Conclusion:** The efficiency of the two training formats is nearly identical. The group format, because of its better acceptance, is recommended for practical use. © 2002 Elsevier Science Inc. All rights reserved.

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Introduction

Recent epidemiological data on headache in children reveal a marked increase of recurrent headache [24], indicating that efficient headache therapies are urgently needed. Timely psychological treatment of pediatric headache may prevent the development of chronic adult headache and thus avert large headache-related costs to the health care system in later years.

Psychological treatment of pediatric headache has long been the domain of relaxation training and biofeedback (for reviews, see Refs. [5,10,11,12]). In search of cost-effective

interventions biofeedback treatment was studied in home-based minimal contact formats and was found to be equally efficacious to treatment in clinical settings [1,7,9,24]. *Group trainings*, teaching relaxation as a further cost-effective treatment format, were also examined [15,16] but did not include clinical samples and were only evaluated in school settings.

A different therapeutic approach was chosen by McGrath et al. [19], conducting and evaluating a multicomponent *cognitive–behavioral* program on a clinical sample. They compared a therapist-administered version of the training (individual setting) to a *self-help format* in which children received instructions from a written manual. The study indicated that the self-help version of the program was at least as efficacious as the group training but only more efficient, since less time per individual was required from the therapist. There is, however, some ambiguity regarding

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the interpretability of these results because of the high dropout rate (26%), lack of detailed information on statistical results and age of participants.

Griffith and Martin [8] used a similar research design in a study on Australian pupils. They compared an eight-session format, which, in contrast to the study from McGrath et al., was administered to *groups* of six children, to a minimal-contact format consisting of three therapist-guided sessions supplemented by homework and treatment manuals. In comparison to the training groups, a self-monitoring waiting-list control did not show any headache reduction. The authors could not corroborate the descriptive findings by statistical means. They conclude, nevertheless, that the home-based training, which rendered similar results as the therapist-directed training, was twice as cost-effective.

The main objective of the current study is to determine whether the results indicating a similar efficacy of the two training formats with differing levels of cost-effectiveness can be confirmed in a German pediatric headache sample consisting of headache sufferers with different diagnoses. The inclusion of migraine, tension-type headache and combined headache allows for evaluation of possible differential effects of treatment. In contrast to McGrath's study and in accordance with Griffith and Martin, we chose to conduct therapist-administered treatment in *groups of children*, not individually. Treatment addresses children of a relatively young age group (10–14 years), since children of this age—according to our clinical experience—are highly motivated and very sensitive to therapy (see also Ref. [11]). Furthermore, it seems especially important to us to offer psychological headache treatment before the use of medication becomes a person's main and possibly only coping strategy. It is well known that use of drugs to alleviate headache increases with age [21].

Our main intent is to compare two *therapy formats* of maximal *similarity regarding content* of therapy but of distinctive *difference regarding setting* (therapist-directed group training (TG) vs. home-based manualized individual training (SH)). Thus, we avoided the significant overlap between clinic- and home-based treatment found in the Griffith and Martin study.

While focusing on the comparative effectiveness of the different training formats, we intend to determine their efficacy relative to a *waiting-list control*. *Efficiency* of both formats will be compared by estimating the time needed per child in relation to the effect sizes found for each training.

Method

Information on the research project was published in various local newspapers. Interested parents and children were invited to attend an informational meeting at the university. A total of 195 parents voiced their intent to participate. Only children suffering from two or more headaches per month (parent's report) qualified. Secondary or

symptomatic headache had to be ruled out by a physician. Children with psychopathological disorders or other disabling diseases were excluded (parent's report). Furthermore, the juvenile participants had to be fluent in spoken and written German.

From the 175 children fulfilling the inclusion criteria, 85 were selected randomly for the study by the cast of the die, since treatment capacity could not be extended beyond that number.

Children's headaches were diagnosed by their physicians or a cooperating pediatric neurologist. The headache diagnoses were further verified with a structured interview conducted with the child and his/her parents in which headache symptoms were assessed according to the IHS classification (with softened criteria for migraine in regard to duration and unilaterality, see Ref. [18]).

Assignment to the treatment groups was random: 30 children were allotted to the group training (six groups of five children), 35 to the self-help format (because of a suspected higher dropout rate), and only 20 to a waiting-list control group (since only four treatment groups could be conducted after the experimental period).

After the interview, children monitored their headaches for 4 weeks with a headache diary (pretherapy), they resumed monitoring for a 4-week period following therapy (posttherapy) and again 6 months later (only TG and SH). The children were also given a psychometrically validated questionnaire tapping stress [17] with three scales (stress experience: $r_{tt}=.73$; stress symptoms: $r_{tt}=.52$; stress coping: $r_{tt}=.77$).

After the training, Ss filled out a special questionnaire evaluating the training and its effects. Here, the children were asked about headache changes, their utilization of the coping strategies conveyed in the training, and about changes in their self-concept (e.g., "Compared to the time prior to training . . . I feel more relaxed and calm . . . I am able to express my wishes much better . . ."). Parents received a nearly identical questionnaire inquiring after changes they had observed in their children. Five female therapists, graduate or postgraduate psychologists, conducted the therapy under the supervision of the authors.

Treatment protocol

TG consisted of eight weekly sessions lasting 90 min on the average. The training procedure was strictly manualized [4]. An 8-week instruction manual was given to each child in the self-help program. These children were contacted weekly by a therapist via telephone, who inquired about their progress and problems working with the manual. The self-help manual was designed to be as similar as possible to the group manual.

Main topics of Session 1 included an introduction to the training rationale and protocol, as well as education about headache, its origin and underlying physiopathology. Session 2 was dedicated to the acquisition of progressive

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