REVIEW ARTICLE

Psychological Interventions for Headache in Children and Adolescents

Christine B. Sieberg, Anna Huguet, Carl L. von Baeyer, Shashi S. Seshia

ABSTRACT: Headache in children and adolescents represents a number of complex and multifaceted pain syndromes that can benefit from psychological intervention. There is good evidence for the efficacy of cognitive behavioral therapy, relaxation training, and biofeedback. The choice of intervention is influenced by patients' age, sex, family and cultural background, as well as by the nature of stressors and comorbid psychiatric symptoms. Management must always be family-centered. Psychological treatments are essential elements in the multidisciplinary, biopsychosocial management of primary headache disorders, particularly for those with frequent or chronic headache, a high level of headache-related disability, medication overuse, or comorbid psychiatric symptoms. Future studies of efficacy and effectiveness of psychological treatment should use the International Headache Society's definition and classification of headache disorders, and stratify results by headache type, associated conditions, and treatment modality.

RÉSUMÉ: Interventions psychologiques dans le traitement de la céphalée chez les enfants et les adolescents. La céphalée chez les enfants et les adolescents comprend plusieurs syndromes douloureux complexes qui comportent de multiples facettes pour lesquelles une intervention psychologique peut être bénéfique. Il existe des données probantes en faveur de l'efficacité de la thérapie cognitivo-comportementale, des techniques de relaxation et de la rétroaction biologique. Le choix de l'intervention est influencé par l'âge du patient, le sexe, le milieu familial et social, ainsi que par la nature des facteurs de stress et les symptômes d'une comorbidité psychiatrique le cas échéant. La gestion de la pathologie doit toujours être centrée sur la famille. Les traitements psychologiques sont des éléments essentiels de la gestion multidisciplinaire biopsychosociale des céphalées primitives, particulièrement chez les patients qui présentent une céphalée fréquente ou chronique, une invalidité significative due à la céphalée, une surutilisation de la médication ou des symptômes d'une comorbidité psychiatrique. À l'avenir, les études portant sur l'efficacité et l'utilité du traitement psychologique devraient utiliser la définition et la classification des céphalées de la International Headache Society et stratifier les résultats selon le type de céphalée, les maladies associées et les modalités de traitement.

Can. J. Neurol. Sci. 2012; 39: 26-34

Primary recurrent and chronic (daily) headaches, particularly migraine, tension-type (TTH), and mixed migraine-TTH, are common pain syndromes in children (the term will be used to include adolescents).[1-5] A biopsychosocial multi-disciplinary approach, including psychological treatment, is considered essential for effective management.[6-11] Maizels urges physicians to "stay aware" of behavioural research.[12] Physicians caring for children with headache should be familiar with psychological interventions for this population to facilitate their provision. The principal aim of this paper is to describe the psychological interventions used in the treatment of pediatric headache.

Comorbid, precipitating and contributory psychological factors

Important factors that often contribute to the onset, maintenance, and exacerbation of pediatric headache include stress and psychiatric disorders, particularly anxiety and depression.[6,13-20] Additionally, maltreatment in childhood has been associated with headache in adult life.[21,22]

Neurobiological basis

The brain regions involved in the perception of and response to pain have been collectively termed the "pain matrix." Readers

From the Division of Pain Medicine, Department of Anesthesiology, Perioperative and Pain Medicine, Children's Hospital Boston, and Department of Psychiatry (CBS), Harvard Medical School, Boston, MA,USA; IWK Health Centre (AH), Halifax, Nova Scotia; Departments of Psychology and Pediatrics (CLvB), Division of Pediatric Neurology, Department of Pediatrics (SSS), University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

Received May 24, 2011. Final Revisions Submitted August 24, 2011.

Correspondence to: Carl L. von Baeyer, Department of Psychology, University of Saskatchewan, 9 Campus Drive, Saskatoon, Saskatchewan, S7N 5A5, Canada. Email: carl.vonbaeyer@usask.ca.

are directed to recent reviews.[23-26] Detailed reiteration is not relevant to this paper, with the exception of two points: (a) The principal anatomic components of the "pain matrix" include the thalamus, insula, anterior cingulate gyrus (especially important), prefrontal cortex, primary and secondary somatosensory cortices, amygdala, periaqueductal gray matter, and cerebellum, and (b) with minor differences, the same network is involved in primary headaches.

The gate control and neuromatrix theories of pain highlight the seamless interaction between brain and spinal cord mechanisms in pain.[27,28] These theories are supported by evidence such as the work of Goffaux and colleagues.[29] Peripheral sensitization in headache can be considered an expression of such an interaction of sensory, cognitive, affective, and other inputs. The anterior cingulate cortex as well as the periaqueductal gray matter, and possibly other components of the "pain matrix," are involved in the cognitive aspects of pain, and modulated by behavioural interventions.[30] Brain and spinal mechanisms are involved in psychologically induced analgesia such as the placebo response, opioid and dopaminergic pathways being implicated.[29,31-33]

At a more abstract theoretical level, the cognitive processes of attention, expectancy and memory can help to understand how pain relief is accomplished by non-pharmacological methods. For example, clinical and experimental data in children with pain suggest that competing stimuli such as distraction and other psychological interventions consume attentional resources, making them less available for the painful experience (such as headache), with a consequent decrease in the perception of pain.[34,35] The modulation of pain and distress through these cognitive processes likely involves brain and spinal mechanisms, as it does in adults, in keeping with gate control theory.

Biopsychosocial Factors That Can Influence Treatment

Predisposition To Headache

The following facts point to the possibility that a biological predisposition to pain[36] may be responsible in part for headaches: (a) evidence of heritability;[13,37,38] (b) large sex differences in prevalence;[39] (c) increase in prevalence after puberty, particularly in females; and (d) strong associations found between headache and other pain syndromes such as functional abdominal pain[40], and (e) between headache and psychiatric disorders such as anxiety and depression.[37] Professionals must be sensitive to these considerations.

Developmental considerations

Assessment and management are influenced by the developmental level of the child (cognitive, psychosocial, dependence on guardians, ability to cooperate, self-report and consent). With the proviso that age is only a rough approximation of development, Andrasik et al[41] suggest three age groupings, 1-6 years, 7-11 years and 12-18 years, over the course of which there is increasing developmental maturation, including the ability to engage actively in treatment. Active engagement is a prerequisite for most psychological treatments;[42] however, many interventions can be adapted to pre-school children and the cognitively challenged.[9]

Family and culture

Family related factors have a complex relationship with childhood headache: children learn to interpret and react to pain from family members.[43] Primary headaches in children are frequently associated with a family history of headache in first degree relatives.[6,20] Children of parents who have chronic headache show a greater somatic focus (concern about physical symptoms and health) than controls.[44] The sex of both children and parents can influence parental reporting.[45] Parental psychopathology may have an influence on headache and other illnesses in children.[18] There is a relatively high incidence of psychiatric disorders in parents of children with headache, especially migraine, in clinic based studies.[6,20] Such illnesses in family members are important stressors for children with headache.[6] For all these reasons, assessment and treatment has to be both child and family-centered.

Cultural influences have not been well studied in headache,[43] but influence management. Hence, conclusions should not be extrapolated to populations not represented in study samples.[46]

Assessment And Measurement Of Multiple Headache-Related Outcomes

Headache has many facets, and needs to be assessed multi-dimensionally (e.g., symptoms, physical functioning, mental health, role functioning). Some important domains of assessment and some commonly used measures are listed in Table 1.[47-67] In addition, primary headache disorders are often associated with stressors and with psychiatric disorders; hence, a multi-axial approach is ideal.[6,68] Impact of headaches on everyday life has to be assessed in several domains (e.g., school, social, play, family, sleep). Pain severity in children is often assessed compositely on a numerical rating scale (0-10), a visual analog scale, or a faces scale, depending upon the child's developmental level. The PedMIDAS and the Pediatric Quality of Life Inventory have been field tested in migraine, and can be incorporated into everyday care.[9,69] Universally accepted valid and reliable measures are needed to assess the impact of headache in children, for use both in treatment trials and clinical practice.[70]

Psychological Interventions

Overview of psychological treatments for headache

Some of the commonly used methods in children are listed in Table 2.[71-99] Psychological treatments for headache in children are derived from treatment of headache in adults,[100,101] and from treatment of children with other forms of pain. These interventions are also used across a variety of mental health problems (e.g., anxiety, depression, substance abuse, etc.). Some of the commonly used methods in children are listed in Table 2. Most of these interventions, with the exception of specific types of biofeedback, are generic for all types of headache, migraine being the most studied.

Cognitive-behavioral therapy (CBT)

Cognitive-behavioral therapy is based on the premise that our thoughts dictate our feelings and behaviors and that we can alter these thought patterns in order to feel better.[102] Treatment includes both cognitive and behavioral components. Cognitive

https://doi.org/10.1017/S0317167100012646 Published online by Cambridge University Press

Table 1: Assessment and measurement of multiple headache related outcome domains

Outcome domain	Measures
Pain Intensity	• Numerical Rating Scale (better termed Verbal Numeric Scale)[47-51] • Faces scales[52] • Faces Pain Scale – Revised[53]
Pain Qualities (Sensory, Affective, Temporal)	• Adolescent Pediatric Pain Tool[54]
Functional Impairment	• Functional Disability Inventory[55,56] • PROMIS Pediatric Pain Interference Scale[57] • Child Activity Limitations Interview[58] • PedMIDAS[59]
Quality of life	• Pediatric Quality of Life Inventory Version 4.0[60] • Quality of Life Headache in Youth[61]
Social, Emotional, and Cognitive Outcomes	• Multidimensional Anxiety Scale for Children[62] • Revised Children's Manifest Anxiety Scale-2[63] • Children's Somatization Inventory[64] • Pain Catastrophizing Scale - Child[65] • Pediatric Fear of Pain Questionnaire[66] • Pediatric Pain Fear Scale[67]

Table 2: Overview of psychological interventions for pediatric headache and level of evidence for their efficacy

Evidence Level	Intervention	Components of Intervention
Evidence-based treatments (supported by multiple RCTs)	Cognitive-behavioral therapy[71,71-74]	• Psychoeducation about pain[75] • Distraction[76] • Reinforcement[75] • Behavioral Activation[75] • Activity Pacing[77,78]
	Relaxation therapy[79-81]	• Imagery[76] • Progressive Muscle Relaxation[82,83] • Mindfulness Meditation[84]
	Biofeedback treatment[85-87]	• Autogenic training[85] • Electromyography[88-91] • Thermal biofeedback[87]
Promising treatments (based on clinical reports, current clinical practice, or single RCTs without strong evidence)	ACT[92]	• ACT with mindfulness[93,94] • Values-based Assessment [95]
	Hypnosis[96,97]	• Initiation of relaxation, imagery, suggestion, positive affirmation[98,99]

RCTs = Randomized Controlled Trials. ACT = Acceptance and Commitment Therapy

https://doi.org/10.1017/S0317167100012646 Published online by Cambridge University Press

components include providing psychoeducation about the pain[75] as well as teaching the child to reappraise the pain and to use self-instructions to promote coping. Additionally CBT teaches children to consciously plan to utilize coping and mood altering (e.g., smile to yourself) strategies in headache-producing situations.[103]

Imagery and distraction are two other common and supported cognitive techniques used in treating pediatric headache and often incorporated in CBT. Distraction techniques involve helping children identify areas other than the pain that they can think about, while imagery utilizes visualization of the child's favorite place or activity or other pain-altering experiences. An audio recording of guided imagery can be made or a generic one can be provided to a patient with the instruction to engage in daily practice.[76]

Behavioral interventions, including some that are brief and designed to be administered by neurologists, have been described.[104-106] Behavioral interventions can be single-session,[105,106] group-based,[107] home-based,[104] and parent-mediated.[89] Behavioral techniques that are helpful for youth with headaches include reinforcement, behavioral activation, activity pacing, and progressive muscle relaxation (PMR).

Differential reinforcement of non-pain behavior (e.g., attending school; completing activities of daily living; seeing friends; participating in extracurricular activities) is an effective technique to help restore and maintain functioning.[75] Additionally, ignoring pain and avoidant behaviors associated with headaches (e.g., attention seeking for pain) is also helpful in order to promote functioning. Helping caregivers and teachers learn to provide positive reinforcement either through praise or, depending on the developmental level of the child and level of impairment, through a reward (e.g., sticker earned toward a small prize for attending school the entire week) assists in promoting functioning. Along similar lines, behavioral activation, in which the child devises a list of values that (s)he finds rewarding and then creates goals to accomplish each week in accordance with these values, helps the patient to increase activity levels and prevent avoidance behaviors.

Patients with headache often have a pattern of avoidance and fatigue[76] interspersed with spikes of overactivity. Activity pacing helps to establish more consistent, balanced levels of activity rather than alternating periods of inactivity with overactivity and exhaustion.[78] Pacing helps patients to be in control of their headache by finding a realistic rate of activity that does not worsen pain.[108,109] Specifically, activity pacing involves having the patient gradually re-integrate back into activities, including school, sports, and leisurely activities, while also getting appropriate rest. When introducing pacing, it is good to have the child start by keeping an activity diary every day for a week in order to ascertain the type, duration, and frequency of the activities he or she engages in or avoids, and the headache intensity associated with each pursuit.[109,110] Then, a plan for gradual normalization can be developed. Specific pacing strategies that have been found helpful for patients with chronic pain include making a plan the night before for the next day, which includes realistic goals for activities and breaks for the following day.[77] The key is to have a balance between activities and rest, and ensure realistic expectations.

Relaxation can be cognitively based (e.g., distraction, imagery), and can also involve behavioral components. Progressive muscle relaxation, a type of behavioral relaxation practice that involves tensing and relaxing each muscle group in order to learn the difference between feeling tense and feeling relaxed, has been widely used in the treatment of pediatric headache.[82,83] Typically, while engaging in diaphragmatic breathing (i.e., deep belly breathing), a muscle group (e.g., hands, feet, head, stomach, etc.) is tensed for 5-10 seconds and then relaxed for 10-20 seconds. Progressive muscle relaxation can be used in conjunction with guided imagery and as with guided imagery, can be taught to the child through the use of a guided exercise, then the child can practice at home with an audio recording such as a compact disc. While PMR is highly effective in pain management, the tensing component is best avoided in body areas where there is musculoskeletal dysfunction, as contracting muscles sometimes leads to cramping and can exacerbate pain.[111]

Biofeedback

Biofeedback helps patients to improve their self-regulation of pain-related physiological processes by providing direct measurement and feedback of parameters such as muscle tension via electromyography, heart rate and heart rate variability, respiration rate, or skin temperature. Electromyography (EMG) focuses on monitoring the electrical activity of the skeletal muscles and helps to increase self-control of muscle tension.[88,90,91,112] Thermal biofeedback, typically recommended for migraine, involves placing temperature sensors (thermistors) on the forehead and the periphery (e.g., fingertips); audio or video signals provided via a computer help the patient to learn to reduce the temperature of the forehead and increase the temperature of the periphery.[87]

Hypnosis and training in self-hypnosis

Hypnosis is based on the premise that a deep state of relaxation and decreased peripheral awareness can lessen the strength of pain signals.[96,97,113] Children more readily engage with hypnotherapy than adults.[98] Specifically, children as young as five can be hypnotized, with hypnotic ability peaking between the ages of 7 and 14 years.[114] The hypnotic process includes: (a) assessment of hypnotic ability, (b) an induction phase if necessary, which may include the development of individual pain management strategies, (c) suggestion, which utilizes imagery of favorite and safe places as well as metaphors, and (d) termination phase.[98] Self-hypnosis, incorporating positive affirmation statements and self-suggestions, has also been found to be effective in managing headaches in children.[99]

Mindfulness meditation

Mindfulness meditation is based on the premise of remaining in the moment and not worrying or focusing on the past or future. Patients are taught structured exercises to help them notice their momentary changes in thoughts and sensations while maintaining an attitude of detachment or neutral interest rather than emotional involvement. Mindfulness differs from CBT, as it stresses that "we cannot change the thoughts that come into our head"; however, we can change whether and how we pay

attention to these thoughts and can also change our responses and actions to our thoughts.[84] Mindfulness exercises typically focus on breathing calmly and allowing thoughts, feelings, and sensations to come and go without paying attention to them.[84] Some younger children may benefit from placing a candy in their mouth and using all of their senses to focus on the taste, texture, and feeling of the candy while ignoring all other sensations.

Acceptance-based treatments

Acceptance-based approaches to pain management posit that acceptance rather than avoidance of pain of pain can result in a decrease of pain and disability.[93,94] Acceptance and commitment therapy (ACT), one type of acceptance-based approach, has been used for the treatment of chronic pain in children and adolescents.[115] Acceptance and commitment therapy utilizes mindfulness and values clarification to enhance psychological flexibility and help target avoidance-based behavior that can interfere with quality of life and values-based living.[95] In this way, ACT differs from other behavioral pain management strategies in that symptom reduction is not the end goal; instead, the goal is to live one's life in accordance with one's values, while giving pain less prominence and control. This approach may be particularly useful for children who have received multiple interventions without benefit.

Parent and family education

Parents are essential participants in the management of headache in their children as parental attitudes, responses, and beliefs can influence pain and adherence to treatment.[116-118] Specific parental interventions include helping parents understand the biopsychosocial factors that influence headache, as well as learn how they can support their child to manage and cope with symptoms. Additionally, parents can be taught to modify their response, so that pain behaviors are not reinforced.[119] The neurobiological basis for headache, psychiatric disorders, and psychological treatments should be discussed with children, caregivers and teachers.

Consultation with school

Children with headaches frequently miss school[120,121] so there is a need to interact with school personnel for several reasons: (a) to obtain information about the child's academic functioning, behavior, social interactions, bullying and peer relationships; (b) to share information about the child's headache disorder; (c) to assist in improving attendance and maintaining progress with studies (home schooling may be needed for a short duration in some children with severe recurrent or chronic daily headache); (d) to develop a plan for gradual reintegration to academic and extra-curricular activities if there has been absence, and (e) in some cases, to provide treatment at school.[120] Thus, teachers are key partners in management.

Prevention

Discussions must address future high-risk social and environmental situations for headache recurrence (e.g., studying for exams, college applications, participating in competitive sports), and provide preventive problem-solving strategies to deal with these situations.[122]

Evidence for Efficacy and Effectiveness

A Cochrane review found strong evidence for the efficacy of psychological treatment in headache pain reduction as an outcome of (a) CBT, (b) relaxation training, and (c) biofeedback treatment.[123,124] There was a six-fold higher probability of clinically significant improvement in headache with psychological treatment compared to control conditions. Similar conclusions were reached in an earlier meta-analysis.[46]

Limitations of the studies to date include: (a) sample sizes, even in meta-analyses, are small; (b) most studies have not stratified patients as to headache type; (c) International Headache Society definitions and classifications are not often used; (d) most studies do not assess the effects of treatment over the long term; (e) evidence for outcomes other than pain is lacking; (f) studies concerning effectiveness (which refers to treatment response in clinical practice with less highly selected patients and less assurance of uniformity of treatment in comparison with efficacy trials) are lacking;[125] (g) adequately controlled comparisons of psychological treatment separately and in combination with pharmacological treatment have not been done; (h) several of the treatment approaches described in clinical reports have not been evaluated in controlled trials (see Table 2); and (h) there is a limited use of control conditions other than waiting list, and very few studies incorporate the natural history of headache. Penzien and associates[126,127] address some of these limitations and offer guidelines for future trials.

Placebo effect and efficacy trials

Placebo controlled randomized clinical trials have become the gold standard for assessing the efficacy of drugs, based on the now erroneous assumption that an inert (pharmaceutical) substance would have no clinical effect. Clinical observations over the past fifty years have shown that not only can considerable benefit be seen in the placebo-controlled arm of trials but adverse effects ("nocebo") may also be reported.[128,129] A relatively high percentage of subjects with headache treated with placebo show a therapeutic response, children more so than adults.[128,130] The psychoneurobiological basis for the placebo response is now well established; further discussion is beyond the scope of this review and readers are directed to the cited references.[31,32,128,131] There is no counterpart to the inert pharmaceutical agent in psychological research; even an apparently non-therapeutic interaction is not psychologically inert. "Pseudotherapy" such as sham biofeedback treatment to control for nonspecific elements of the therapeutic intervention may be appropriate in some situations.[126,132]

Challenges

Challenges in promoting integration of psychological treatments into routine headache care include difficulty in accessing psychological service due to limited availability, distance, and cost, as well as poor adherence to appointments and treatment recommendations.

Few patients live close to qualified pediatric psychologists who are for the most part located only in tertiary institutions in major urban centres. In Canada, psychologists' services are not covered by provincial health care plans. Some centres have free-of-charge outpatient programs in children's hospitals, and mental

health clinics in the community. Such services often have long wait lists. Distance treatment could potentially improve access to those remote from facilities. Distance treatment refers to treatment administered (following an initial office visit) with the patient at home or in the local health facility, using mail, Internet, telehealth and other communication methods.[133,134] Distance psychological treatment has been provided to children and adolescents suffering recurrent headaches through (a) manuals and regular phone contact[73,135], (b) the Web,[136] (c) CD-ROM,[71] and (d) smartphones.[137] In Alberta, Canada, multidisciplinary group treatment, based in a children's hospital, is offered via telehealth to adolescents with chronic pain including headache; patients attend at their local high schools. Distance treatment has as much efficacy as traditional face-to-face treatment,[73,135] and is significantly more cost-efficient.[104,136] Effectiveness of distance treatment when implemented in the community has not yet been assessed.

Adherence to appointments and treatment has not been well studied in pediatric headache. The rate of adherence for adolescents with chronic illness is about 50%.[138,139] Barriers to adherence include scheduling issues, forgetting, distraction, attempts to be normal, medication side effects, and negative attitudes about psychological treatment.[140] Interventions such as appointment reminders, providing information about the benefits of adherence, self-monitoring, problem-solving, reinforcing adherence with rewards, contingency contracting, and goal setting can be helpful[141-143]

Conclusion

Biobehavioral management is an essential pillar of pediatric headache management,[8,9] several principles of which can be integrated into clinical practice. There is strong evidence for the efficacy of cognitive behavioral therapy, relaxation treatment, and biofeedback in reducing headache pain.[46,123,124,144] As in adults,[100,101] psychological therapies should be discussed with families of all children with headache as an option or complementary to pharmacological management, especially in the following situations: patients with frequent headache; chronic daily headache with high risk factors for persistence; significant stressors; associated psychiatric disorders; overuse of medication, and intolerance to or lack of benefit from appropriate drugs .

"Integrated" (multidisciplinary, biopsychosocial) care, with neurologists, psychologists, psychiatrists and other professionals (as considered necessary), is becoming the standard of practice in many adult headache clinics;[145] the European model has been shown to improve outcome and reduce costs.[145] Multi-disciplinary headache programs for adults have been shown to be possible and effective in Alberta, Canada[11,78] A similar approach was found feasible for children in Saskatchewan, psychological services being made available without cost to the family.[6] Integrated care for children with headache is attainable.

Acknowledgements

Drs. Sieberg and Huguet are trainee members and Dr. von Baeyer is a co-principal investigator of Pain in Child Health, a strategic research training initiative of the Canadian Institutes of Health Research. Dr. Sieberg would like to thank the Sara Page Mayo Endowment for Pediatric Pain Research and Treatment, and the Department of Anesthesiology, Perioperative and Pain Medicine at Children's Hospital Boston. Dr. Huguet is supported by a Beatriu de Pinós Fellowship, Agència de Gestió d'Ajuts Universitaris i de Recerca, Government of Catalonia, Spain. Dr. Seshia gratefully acknowledges continuing support from the Department of Pediatrics and the College of Medicine, University of Saskatchewan, Saskatoon, Canada. The authors thank Dr. R.J. Huntsman for helpful suggestions.

Notes

(i) Searches for this review were carried out on PubMed and PsycINFO. They were based on search terms related to psychological treatment and headache, limited to the 0-18 age group. Additional searches were made using the names of psychologists known to have contributed to headache treatment research, especially pediatric headache, and using cited reference searches on Web of Science to identify recent papers that cited important earlier works.

(ii) Psychological interventions are generally provided by clinical psychologists, and by psychiatrists trained in them. Some interventions can be provided by family physicians, neurologists, nurses, social workers, biofeedback technicians, and other counselors as long as they have suitable training and resources.

(iii) Some of the descriptions of psychological treatments cite articles on chronic or recurrent pain rather than specifically headache. These are relevant because headache is the most frequent type of chronic or recurrent pain affecting children, and the same treatment methods generally apply to headache and non-headache pain.

(iv) Given the differences in funding for health care, professionals in each country need to determine how cost-effective integrated pediatric headache care can be achieved for their respective populations.

(v) SSS and CLvB contributed substantially to the concept and writing, mentoring CBS and AH through the process.

References

1. Abu-Arafeh I, Razak S, Sivaraman B, Graham C. Prevalence of headache and migraine in children and adolescents: a systematic review of population-based studies. Dev Med Child Neurol. 2010 Dec;52(12):1088-97.
2. Arruda MA, Guidetti V, Galli F, Albuquerque RC, Bigal ME. Primary headaches in childhood--a population-based study. Cephalalgia. 2010 Sep;30(9):1056-64.
3. Laurell K, Larsson B, Eeg-Olofsson O. Prevalence of headache in Swedish schoolchildren, with a focus on tension-type headache. Cephalalgia. 2004 May;24(5):380-8.
4. Wang SJ, Fuh JL, Lu SR, Juang KD. Chronic daily headache in adolescents: prevalence, impact, and medication overuse. Neurology. 2006 Jan 24;66(2):193-7.
5. Stovner L, Hagen K, Jensen R, et al. The global burden of headache: A documentation of headache prevalence and disability worldwide. Cephalalgia. 2007 Mar;27(3):193-210.
6. Seshia SS, Phillips DF, von Baeyer CL. Childhood chronic daily headache: A biopsychosocial perspective. Dev Med Child Neurol. 2008;50(7):541-5.
7. Andrasik F, Lipchik GL, McCrory DC, Wittrock DA. Outcome measurement in behavioral headache research: Headache parameters and psychosocial outcomes. Headache. 2005 May;45 (5):429-37.
8. Powers SW, Gilman DK, Hershey AD. Suggestions for a biopsychosocial approach to treating children and adolescents who present with headache. Headache. 2006 Oct;46 Suppl 3: S149-50.

9. Powers SW, Andrasik F. Biobehavioral treatment, disability, and psychological effects of pediatric headache. Pediatr Ann. 2005 Jun;34(6):461-5.
10. Kabbouche MA, Powers SW, Vockell AL, et al. Outcome of a multidisciplinary approach to pediatric migraine at 1, 2, and 5 years. Headache. 2005 Nov-Dec;45(10):1298-303.
11. Sauro KM, Becker WJ. Multidisciplinary treatment for headache in the Canadian healthcare setting. Can J Neurol Sci. 2008;35(1): 46-56.
12. Maizels M. Why should physicians care about behavioral research? Headache. 2005 May;45(5):411-3.
13. Seshia SS, Wang SJ, Abu-Arafeh I, et al. Chronic daily headache in children and adolescents: A multi-faceted syndrome. Can J Neurol Sci. 2010;37:769-78.
14. Anttila P, Sourander A, Metsahonkala L, Aromaa M, Helenius H, Sillanpaa M. Psychiatric symptoms in children with primary headache. J Am Acad Child Adolesc Psychiatry. 2004 Apr;43(4): 412-9.
15. Battistutta S, Aliverti R, Montico M, Zin R, Carrozzi M. Chronic tension-type headache in adolescents. Clinical and psychological characteristics analyzed through self- and parent-report questionnaires. J Pediatr Psychol. 2009 Aug;34(7):697-706.
16. Cathcart S, Winefield AH, Lushington K, Rolan P. Stress and tension-type headache mechanisms. Cephalalgia. 2010 Oct;30 (10):1250-67.
17. Farmer K, Dunn D, Scott E. Psychological factors in childhood headaches. Semin Pediatr Neurol. 2010 Jun;17(2):93-9.
18. Feldman JM, Ortega AN, Koinis-Mitchell D, Kuo AA, Canino G. Child and family psychiatric and psychological factors associated with child physical health problems: results from the Boricua youth study. J Nerv Ment Dis. 2010 Apr;198(4):272-9.
19. Karwautz A, Wober C, Lang T, et al. Psychosocial factors in children and adolescents with migraine and tension-type headache: A controlled study and review of the literature. Cephalalgia. 1999;19:32-43.
20. Galli F, Canzano L, Scalisi TG, Guidetti V. Psychiatric disorders and headache familial recurrence: a study on 200 children and their parents. J Headache Pain. 2009 Jun;10(3):187-97.
21. Tietjen GE, Brandes JL, Peterlin BL, et al. Childhood maltreatment and migraine (part I). Prevalence and adult revictimization: A multicenter headache clinic survey. Headache. 2010 Jan;50(1): 20-31.
22. Tietjen GE, Brandes JL, Peterlin BL, et al. Childhood maltreatment and migraine (part II). Emotional abuse as a risk factor for headache chronification. Headache. 2010 Jan;50(1):32-41.
23. Apkarian AV, Bushnell MC, Treede RD, Zubieta JK. Human brain mechanisms of pain perception and regulation in health and disease. Eur J Pain. 2005;9(4):463-84.
24. Mouraux A, Diukova A, Lee MC, Wise RG, Iannetti GD. A multisensory investigation of the functional significance of the "pain matrix". Neuroimage. 2011;54(3):2237-49.
25. Peyron R, Laurent B, Garcia-Larrea L. Functional imaging of brain responses to pain. A review and meta-analysis. Neurophysiol Clin. 2000;30(5):263-88.
26. Sprenger T, Goadsby PJ. What has functional neuroimaging done for primary headache ... and for the clinical neurologist? J Clin Neurosci. 2010;17(5):547-53.
27. Melzack R, Wall PD. Pain mechanisms: A new theory. Science. 1965;150(699):971-9.
28. Melzack R. From the gate to the neuromatrix. Pain. 1999;Supp 6: S121-6.
29. Goffaux P, Redmond WJ, Rainville P, Marchand S. Descending analgesia--when the spine echoes what the brain expects. Pain. 2007;130(1-2):137-43.
30. Andrasik F, Rime C. Can behavioural therapy influence neuromodulation? Neurol Sci. 2007 May;28 Suppl 2:S124-9.
31. Diederich NJ, Goetz CG. The placebo treatments in neurosciences: New insights from clinical and neuroimaging studies. Neurology. 2008;71(9):677-84.
32. Faria V, Fredrikson M, Furmark T. Imaging the placebo response: a neurofunctional review. Eur Neuropsychopharm. 2008;18(7): 473-85.
33. Petrovic P, Kalso E, Petersson KM, Andersson J, Fransson P, Ingvar M. A prefrontal non-opioid mechanism in placebo analgesia. Pain. 2010;150(1):59-65.
34. Compas BE, Boyer MC. Coping and attention: Implications for child health and pediatric conditions. J Dev Behav Pediatr. 2001; 22(5):323-33.
35. Piira T, Hayes B, Goodenough B, von Baeyer CL. Effects of attentional direction, age, and coping style on cold-pressor pain in children. Behav Res Ther. 2006;44(6):835-48.
36. von Baeyer CL, Champion GD. Commentary: Multiple pains as functional pain syndromes. J Pediatr Psychol. 2011 May;36(4): 433-7.
37. Ligthart L, Nyholt DR, Penninx WJH, Boomsma DI. The shared genetics of migraine and anxious depression. Headache. 2010; 50(10):1549-60.
38. Seshia SS, Abu-Arafeh I, Hershey AD. Tension-type headache in children: the Cinderella of headache disorders! Can J Neurol Sci. 2009 Nov;36(6):687-95.
39. Ashina S, Bendtsen L, Ashina M, Magerl W, Jensen R. Generalized hyperalgesia in patients with chronic tension-type headache. Cephalalgia. 2006 Aug;26(8):940-8.
40. Anttila P, Metsähonkala L, Mikkelsson M, Helenius H, Sillanpää M. Comorbidity of other pains in schoolchildren with migraine or nonmigrainous headache. J Pediatr. 2001;138(2):176-80.
41. Andrasik F, Powers SW, McGrath PJ. Methodological considerations in research with special populations: children and adolescents. Headache. 2005 May;45(5):520-5.
42. Cvengros JA, Harper D, Shevell M. Pediatric headache: An examination of process variables in treatment. J Child Neurol. 2007 Oct;22(10):1172-81.
43. McGrath PJ. The family is the crucible. Pain. 2008 Jul 31;137 (3):471-2.
44. Mikail SF, von Baeyer CL. Pain, somatic focus, and emotional adjustment in children of chronic headache sufferers and controls. Soc Sci Med. 1990;31:51-9.
45. Moon EC, Chambers CT, Larochette AC, Hayton K, Craig KD, McGrath PJ. Sex differences in parent and child pain ratings during an experimental child pain task. Pain Res Manag. 2008 May-Jun;13(3):225-30.
46. Trautmann E, Lackschewitz H, Kröner-Herwig B. Psychological treatment of recurrent headache in children and adolescents - a meta-analysis. Cephalalgia. 2006;26(12):1411-26.
47. Bailey B, Daoust R, Doyon-Trottier E, Dauphin-Pierre S, Gravel J. Validation and properties of the verbal numeric scale in children with acute pain. Pain. 2010;149(2):216-21.
48. Voepel-Lewis T, Burke CN, Jeffreys N, Malviya S, Tait AR. Do 0-10 numeric rating scores translate into clinically meaningful pain measures for children? Anesth Analg. 2011;112(2):415-21.
49. von Baeyer CL. Numerical rating scale for self-report of pain intensity in children and adolescents: recent progress and further questions. Eur J Pain. 2009;13(10):1005-7.
50. von Baeyer CL, Spagrud LJ, McCormick JC, Choo E, Neville K, Connelly MA. Three new datasets supporting use of the Numerical Rating Scale (NRS-11) for children's self-reports of pain intensity. Pain. 2009;143(3):223-7.
51. Miró J, Castarlenas E, Huguet A. Evidence for the use of a numerical rating scale to assess the intensity of pediatric pain. Eur J Pain. 2009;13(10):1089-95.
52. Tomlinson D, von Baeyer CL, Stinson JN, Sung L. A systematic review of faces scales for the self-report of pain intensity in children. Pediatrics. 2010;126(5):e1-31.
53. Hicks CL, von Baeyer CL, Spafford P, van Korlaar I, Goodenough B. The Faces Pain Scale-Revised: Toward a common metric in pediatric pain measurement. Pain. 2001;93:173-83.
54. Savedra MC, Holzemer WL, Tesler MD, Wilkie DJ. Assessment of postoperation pain in children and adolescents using the adolescent pediatric pain tool. Nurs Res. 1993;42(1):5-9.
55. Claar RL, Walker LS. Functional assessment of pediatric pain patients: Psychometric properties of the Functional Disability Inventory. Pain. 2006;121(1-2):77-84.
56. Walker LS, Greene JW. The functional disability inventory: measuring a neglected dimension of child health status. J Pediatr Psychol. 1991 Feb;16(1):39-58.

57. Varni JW, Stucky BD, Thissen D, et al. PROMIS pediatric pain interference scale: An item response theory analysis of the pediatric pain item bank. J Pain. 2010;11(11):1109-19.
58. Palermo TM, Witherspoon D, Valenzuela D, Drotar DD. Development and validation of the child activity limitations interview: A measure of pain-related functional impairment in school-age children and adolescents. Pain. 2004;109(3):461-70.
59. Hershey AD, Powers SW, Vockell A-B, LeCates S, Kabbouche MA, Maynard MK. PedMIDAS: Development of a questionnaire to assess disability of migraines in children. Neurology. 2001;57(2034):2039.
60. Varni JW, Seid M, Rode CA. The PedsQL: Measurement model for the pediatric quality of life inventory. Med Care. 1999;37(2): 126-39.
61. Langeveld JH, Koot HM, Loonen MC, Hazebroek-Kampschreur AA, Passchier J. A quality of life instrument for adolescents with chronic headache. Cephalalgia. 1996 May;16(3):183-96; discussion 137.
62. March JS, Parker JD, Sullivan K, Stallings P, Conners CK. The Multidimensional Anxiety Scale for Children (MASC): Factor structure, reliability, and validity. J Am Acad Child Adolesc Psychiatry. 1997 Apr;36(4):554-65.
63. Reynolds CR. Multitrait validation of the Revised Children's Manifest Anxiety Scale for children of high intelligence. Psychol Rep. 1985;56:402.
64. Garber J, Walker LS, Zeman J. Somatization symptoms in a community sample of children and adolescents: Further validation of the Children's Somatization Inventory. J Psychol Assess. 1991;3:588-95.
65. Crombez G, Bijttebier P, Eccleston C, et al. The child version of the pain catastrophizing scale (PCS-C): a preliminary validation. Pain. 2003 Aug;104(3):639-46.
66. Simons LE, Sieberg CB, Carpino E, Logan D, Berde C. The Fear of Pain Questionnaire (FOPQ): Assessment of pain-related fear among children and adolescents with chronic pain. J Pain. 2011; 12(6):677-86.
67. Huguet A, McGrath PJ, Pardos J. Development and preliminary testing of a scale to assess pain-related fear in children and adolescents. J Pain. 2011;12(8):840-8.
68. Lake AE, 3rd. Behavioral and nonpharmacologic treatments of headache. Med Clin North Am. 2001 Jul;85(4):1055-75.
69. Powers SW, Patton SR, Hommel KA, Hershey AD. Quality of life in paediatric migraine: characterization of age-related effects using PedsQL 4.0. Cephalalgia. 2004 Feb;24(2):120-7.
70. Kernick D, Campbell JC. Measuring the impact of headache in children: a critical review of the literature. Cephalagia. 2009; 29:3-16.
71. Connelly M, Rapoff MA, Thompson N, Connelly W. Headstrong: A pilot study of a CD-ROM intervention for recurrent pediatric headache. J Pediatr Psychol. 2006;31(7):737-47.
72. Griffiths JD, Martin PR. Clinical-versus home-based treatment formats for children with chronic headache. Br J Health Psychol. 1996;1:151-66.
73. McGrath PJ, Humphreys P, Keene D, et al. The efficacy and efficiency of a self-administered treatment for adolescent migraine. Pain. 1992;49(3):321-4.
74. Osterhaus S, Lange A, Linssen W, Passchie J. A behavioral treatment of young migrainous and nonmigrainous headache patients: prediction of treatment success. Int J Behav Med. 1997; 4:378-96.
75. Eccleston C, Malleson PN, Clinch J, Connell H, Sourbut C. Chronic pain in adolescents: Evaluation of a programme of interdisciplinary cognitive behaviour therapy. Arch Dis Child. 2003;88:881-5.
76. Holden EW, Deichmann MM, Levy JD. Empirically supported treatments in pediatric psychology: Recurrent pediatric headache. J Pediatr Psychol. 1999;24(2):91-109.
77. Corey D. Pain. Learning to live without it. Toronto: Macmillan Canada; 2004.
78. Magnusson J, Reiss C, Werner B. Effectiveness of a multi-disciplinary treatment program for chronic daily headache. Can J Neurol Sci. 2004;31:72-9.
79. Larsson B, Carlsson J. A school-based, nurse-administered relaxation training for children with chronic tension-type headache. J Pediatr Psychol. 1996;21:603-14.
80. Larsson B, Daleflod B, Hakansson L, Melin L. Therapist-assisted versus self-help relaxation treatment of chronic headaches in adolescents: a school-based intervention. J Child Psychol Psychiatry. 1987;28:127-36.
81. Larsson B, Melin L. Chronic headaches in adolescent: Treatment in a school setting with relaxation training as compared with information-contact and self-registration. Pain. 1986;25:325-36.
82. Emmen HH, Pasckier J. Treatment of headache among children by progressive relaxation. Cephalalgia. 1988;7:387-9.
83. Engel JM, Rapoff MA, Pressman AR. Long-term follow-up of relaxation training for pediatric headache disorders. Headache. 1992;32:152-6.
84. Forsyth J, Eifert G. The mindfulness and acceptance workbook for anxiety. Oakland, CA: New Harbinger Publications, Inc.; 2007.
85. Labbe EE. Treatment of childhood migraine with autogenic training and skin temperature biofeedback: a component analysis. Headache. 1995;35(10):13.
86. Labbe EE, Williamson DA. Treatment of childhood migraine using autogenic feedback training. J Consult Clin Psychol. 1984;52: 968-76.
87. Scharff L, Marcus DA, Masek BJ. A controlled study of minimal-contact thermal biofeedback treatment in children with migraine. J Pediatr Psychol. 2002;27(2):109-19.
88. Bussone G, Grazzi L, D'Amico D, Leone M, Andrasik F. Biofeedback-assisted relaxation training for young adolescents with tension-type headache: A contolled study. Cephalalgia. 1998;(18):463-7.
89. Allen KD, Shriver MD. Role of parent-mediated pain behavior management strategies in biofeedback treatment of childhood migraine. Behav Ther. 1998;29:477-90.
90. Burke EJ, Andrasik F. Home-vs. clinical-based biofeedback treatment for pediatric migraine: Results of treatment through one-year follow-up. Headache. 1989;29:434-40.
91. Grazzi L, Leone M, Bussone G. A therapeutic alternative for tension headache in children: Treatment and 1-year follow-up results. Biofeedback Self Regul. 1990;15:1-6.
92. Wicksell RK, Melin L, Lekander M, Olsson GL. Evaluating the effectiveness of exposure and acceptance strategies to improve functioning and quality of life in longstanding pediatric pain – a randomized controlled trial. Pain. 2009;141(3):248–57.
93. Hayes SC, Bissett RT, Korn, Z., et al. The impact of acceptance versus control rationales on pain tolerance. Psychol Rec. 1999; 49:33-47.
94. McCracken LM, Eccleston C. Coping or acceptance: What to do about chronic pain? Pain. 2003;105:197-204.
95. Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J. Acceptance and commitment therapy: Model processes and outcomes. Behav Res Ther. 2006;44:1-25.
96. Kohen DP. Long-term follow-up of self-hypnosis training for recurrent headaches: What the children say. Int J Clin Exp Hypn. 2010 Oct;58(4):417-32.
97. Kohen DP, Zajac R. Self-hypnosis training for headaches in children and adolescents. J Pediatr. 2007 Jun;150(6):635-9.
98. Rogovik A, Goldman R. Hypnosis for treatment of pain in children. Can Fam Physician. 2007;53:823-5.
99. Olness K, MacDonald JT, Uden DL. Comparison of self-hypnosis and propranolol in the treatment of juvenile classice migraine. Pediatrics. 1987;79(4):593-7.
100. Nicholson RA. Chronic headache: the role of the psychologist. Curr Pain Headache Rep. 2010 Feb;14(1):47-54.
101. Nicholson RA, Buse DC, Andrasik F, Lipton RB. Non-pharmacologic treatments for migraine and tension-type headache: how to choose and when to use. Curr Treat Options Neurol. 2011 Feb;13(1):28-40.
102. Beck AT. Cognitive therapy: Past, present, and future. In: Mahoney J, editor. Cognitive and constructive psychotherapies: Theory, research, and practice. New York: Springer; 1995. p. 29-40.
103. Gil KM, Carson A, Redding Lallinger J, Daeschner C, Ware R. Coping skills training in children with sickle cell disease: Daily coping practice predicts treatment effects. J Pediatr Psychol. 2001;26:163-73.

104. Haddock CK, Rowan AB, Andrasik F, Wilson PG, Talcott GW, Stein RJ. Home-based behavioral treatments for chronic benign headache: A meta-analysis of controlled trials. Cephalalgia. 1997;17:113-8.
105. Powers SW, Mitchell MJ, Byars KC, Bentti AL, LeCates SL, Hershey AD. A pilot study of one-session biofeedback training in pediatric headache. Neurology. 2001;56(1):133.
106. Andrasik F, Grazzi L, Usai S, D'Amico D, Leone M, Bussone G. Brief neurologist-administered behavioral treatment of pediatric episodic tension-type headache. Neurology. 2003;60(7):1215-6.
107. Napier DA, Miller CM, Andrasik F. Group treatment for recurrent headache. Adv Med Psychother. 1997;9:21-31.
108. Ballantyne J, Fishman S, Bonica JJ. Bonica's management of pain. 4th ed. New York: McGraw-Hill; 2009.
109. Sadler J. Pain relief without drugs: A self-help guide for chronic pain and trauma. Rochester, Vt.: Healing Arts Press; 2007.
110. Warfield CA, Fausett HJ. Manual of pain management. Philadelphia: Lippincott Williams & Wilkins; 2002.
111. Bourne, E.J. The anxiety and phobia workbook. 5th ed. Oakland, CA: New Harbinger Publications; 2010.
112. Allen KD, McKeen LR. Home-based multicomponent treatment of pediatric migraine. Headache. 1991;31:467-72.
113. Anbar RD, Zoughbi GG. Relationship of headache-associated stressors and hypnosis therapy outcome in children: A retrospective chart review. Am J Clin Hypn. 2008 Apr;50(4): 335-41.
114. Plotnick AB, O'Grady GJ. Hypnotic responsiveness in children. In: Wester WC, O'Grady DJ, editors. Clinical hynosis with children. New York: Brunner/Mazel; 1991. p. 19-33.
115. Wicksell RK, Melin L, Olsson GL. Exposure and acceptance in the rehabilitation of adolescents with idiopathic chronic pain: A pilot study. Eur J Pain. 2007;11:267-74.
116. Claar RL, Simons LE, Logan DE. Parental response to children's pain: the moderating impact of children's emotional distress on symptoms and disability. Pain. 2008;138(1):172-9.
117. Simons LE, Claar RL, Logan DL. Chronic pain in adolescence: parental responses, adolescent coping, and their impact on adolescent's pain behaviors. J Pediatr Psychol. 2008;33(8): 894-904.
118. Sieberg CB, Williams S, Simons LE. Do parent protective responses mediate the relation between parent distress and child functional disability among children with chronic pain? J Pediatr Psychol. 2011;36(9):1043-51.
119. McGrath P. The multidimensional assessment and management of recurrent pain syndromes in children. Behav Res Ther. 1987;25: 251-62.
120. Chan E, Piira T, Betts G. The school functioning of children with chronic and recurrent pain. Pediatric Pain Letter. 2005;7:11-6.
121. Eccleston C, Crombez G, Scotford A, Clinch J, Connell H. Adolescent chronic pain: Patterns and predictors of emotional distress in adolescents with chronic pain and their parents. Pain. 2004;108:221-9.
122. Sanders MR, Shepherd RW, Cleghorn G, Woolford H. The treatment of recurrent abdominal pain in children: A controlled comparison of cognitive-behavioral family intervention and standard pediatric care. J Consult Clin Psychol. 1994;62(2): 306-14.
123. Eccleston C, Palermo TM, Williams AC, Lewandowski A, Morley S. Psychological therapies for the management of chronic and recurrent pain in children and adolescents. Cochrane Database Syst Rev. 2009(2).
124. Palermo TM, Eccleston C, Lewandowski AS, Williams AC, Morley S. Randomized controlled trials of psychological therapies for management of chronic pain in children and adolescents: An updated meta-analytic review. Pain. 2010 Mar;148(3):387-97.
125. Nash JM, McCrory D, Nicholson RA, Andrasik F. Efficacy and effectiveness approaches in behavioral treatment trials. Headache. 2005 May;45(5):507-12.
126. Penzien DB, Andrasik F, Freidenberg BM, et al. Guidelines for trials of behavioral treatments for recurrent headache, first edition: American headache society behavioral clinical trials workgroup. Headache. 2005 May;45 Suppl 2:110-32.
127. Penzien DB, Rains JC, Lipchik GL, Nicholson RA, Lake AE,3rd, Hursey KG. Future directions in behavioral headache research: Applications for an evolving health care environment. Headache. 2005 May;45(5):526-34.
128. Diener HC, Schorn CF, Bingel U, Dodick DW. The importance of placebo in headache research. Cephalalgia. 2008 Oct;28(10): 1003-11.
129. Enck P, Benedetti F, Schedlowski M. New insights into the placebo and nocebo responses. Neuron. 2008 Jul 31;59(2):195-206.
130. Lewis DW, Winner P, Wasiewski W. The placebo responder rate in children and adolescents. Headache. 2005 Mar;45(3):232-9.
131. Zubieta JK, Stohler CS. Neurobiological mechanisms of placebo responses. Ann N Y Acad Sci. 2009 Mar;1156:198-210.
132. Rains JC, Penzien DB. Behavioral research and the double-blind placebo-controlled methodology: challenges in applying the biomedical standard to behavioral headache research. Headache. 2005;45(5):479-86.
133. McGrath PJ. Commentary: Recurrent headaches: Making what works available to these who need it. J Pediatr Psychol. 1999;24 (2):111-12.
134. Cuijpers P, Straten A, Andersson G. Internet-administered cognitive behavior therapy for health problems: A systematic review. J Behav Med. 2008;31(2):169-77.
135. Kröner-Herwig B, Denecke H. Cognitive-behavioral therapy of pediatric headache: Are there differences in efficacy between a therapist-administered group training and a self-help format? J Psychosom Res. 2002;53(6):1107-14.
136. Hicks CL, von Baeyer CL, McGrath PJ. Online psychological treatment for pediatric recurrent pain: A randomized evaluation. J Pediatr Psychol. 2006 Aug;31(7):724-36.
137. Liu C, Holroyd KA, Zhu Q, Shen K, Zhou W. Design and implementation of a behavioral migraine management iPhone app for adolescents with migraine. 2010 IEEE International Symposium on A World of Wireless, Mobile and Multimedia Networks:1-6. http://portal.acm.org/citation.cfm?id=1916312.
138. Rapoff MA. Adherence to pediatric medical regimens. New York, NY: Kluwer Academic Publishers; 1999.
139. Quittner AL, Modi AC, Lemanek KL, Ievers-Landis CE, Rapoff MA. Evidence-based assessment of adherence to medical treatments in pediatric psychology. J Pediatr Psychol. 2008;33 (9):916-36.
140. Simons LE, McCormick ML, Mee LL, Blount RL. Parent and patient perspectives on barriers to medication adherence in adolescent transplant recipients. Pediatr Transplant. 2009;13: 338-47.
141. Berkovitch M, Papadouris D, Shaw D, Onuaha N, Dias C, Olivieri MF. Trying to improve compliance with prophylactic penicillin therapy in children with sickle cell disease. Br J Clin Pharmacol. 1998;45:605-7.
142. Holzheimer L, Mohay H, Masters IB. Educating young children about asthma: comparing the effectiveness of a developmentally appropriate asthma education video tape and picture book. Child Care Health Dev. 1998;24(1):85-99.
143. Hovell M, Sipan C, Blumberg E, et al. Increasing Latino adolescents' adherence to treatment for latent tuberculosis infection: a controlled trial. Am J Public Health. 2003;93: 1871-7.
144. Kröner-Herwig B. Psychological treatments for pediatric headache. Expert Rev Neurother. 2011 Mar;11(3):403-10.
145. Diener HC, Gaul C, Jensen R, Gobel H, Heinze A, Silberstein S. Integrated headache care. Cephalalgia. 2011 Jul;31(9):1039-47.