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Commentary

Stress, coping, and psychiatric comorbidity in pediatric chronic daily headache

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Chronic daily headache (CDH) is a type of headache occurring more than 15 days per month in the absence of a serious underlying medical condition (Silberstein, Lipton & Sliwinski, 1996). As yet, there is no internationally accepted classification for chronic daily headache. For example, the International Headache Society (2004) recognizes new daily persistent headache and chronic forms of primary headache disorders, such as chronic tension-type and chronic migraine, while Koenig et al. (2003) have recently conceptualized CDH in children and adolescents as a single syndrome. Although an extensive literature exists regarding adult CDH and pediatric recurrent headache (less than 15 days per month), a paucity of research exists regarding pediatric CDH and especially concerning associated psychological factors, such as psychiatric comorbidity, stress, and coping.

Prevalence and impact

Incidence and prevalence rates of children with CDH are difficult to estimate due to researchers' inconsistent use of classification criteria. CDH accounts for 35 (Hershey et al., 2001) to 60 percent (Gladstein et al., 1993) of children and adolescents reporting to headache clinics. Twelve-month prevalence rates of childhood CDH in community samples are estimated to range from 0.2 (Sillanpaa & Antilla, 1996) to 0.9 percent (Abu-Arefeh & Russell, 1994). However these approximations may

be understated due to use of inaccurate classification criteria (Holden et al., 2001).

Children with CDH experience significant functional disability, especially in school attendance (Carlsson et al., 1996; Holden et al., 1994) and school performance (Wang et al., 2006). Headache frequency, intensity, and duration have been found to be negatively related to life satisfaction, health satisfaction, cheerful mood/good humor, quality of sibling social interactions, and activity participation (Langeveld et al., 1997). Furthermore, headaches in adulthood are predicted by those in childhood (Fearon & Hotopf, 2001). Given the work absenteeism (Lipton et al., 1995) and health care (Von Korff et al., 1992) costs of adult headache, research is needed to identify effective and cost-efficient headache treatment for pediatric chronic headache sufferers so that their headaches do not continue into adulthood.

Psychiatric comorbidity

Psychiatric disorders, mostly depression and anxiety, are more prevalent in adult headache clinic patients with CDH than those with recurrent headache (Holroyd et al., 2000; Puca et al., 1999). Prevalence estimates of psychiatric comorbidity range from 64 (Juang et al., 2000) to 90 percent (Verri et al., 1998) of adults with CDH in headache clinics. This trend has also been found in children and adolescents suffering from CDH (Guidetti et al., 2000). Holden et al. (1994) found psychiatric co-

morbidity in 46 percent of pediatric CDH patients of a headache clinic as compared with 17 percent of pediatric migraine patients. Further research is needed to ascertain the prevalence of psychiatric comorbidity in pediatric CDH populations. Also, since psychiatric comorbidity, particularly anxiety disorders, predicts headache persistence (Guidetti et al., 1998) and poorer treatment response (Curioso et al., 1999; Pakalnis et al., 2001) in children and adolescents, research is needed to assess whether assessment and treatment of anxiety, depression, and other problems would help relieve headache in some pediatric CDH patients.

Stress

Children with more frequent and severe headaches have been shown to experience more stress than children with less frequent and severe headaches (Carlsson et al., 1996; Fearon & Hotopf, 2001; Bandell-Hoekstra et al., 2002). School, peer, or family related stressors have been reported in 42 percent of children presenting to a headache clinic with CDH (Seshia, 2004), but no control data are offered. In pediatric headache clinic patients with CDH not overusing analgesics, 86 percent reported severe school/achievement-related stress and 14 percent reported severe interpersonal stress (Chakravarty, 2005).

Few studies have been done of the relationship between stress and the intensity, duration, frequency, or triggers of pediatric CDH; however, assessment of stressors is recommended in treatment of pediatric CDH (Lipchik & Nash, 2002; Gladstein & Mack, 2005). Adult CDH patients frequently identify stress as a factor in headache precipitation or exacerbation (De Benedittis & Lorenzetti, 1992; Srikiatkachorn & Phanthurachinda, 1997; Holroyd et al., 2000). Abu-Arefeh and Russell (1994) noted that over half of students with CDH recruited from primary and secondary schools retrospectively reported experiencing one or more significant health problems, family illnesses, or stressful family events occurring before or with CDH onset. Controlled prospective studies are needed to assess the role of stress in the onset, maintenance, and worsening of pediatric CDH.

Coping

Adults with headache may use coping strategies such as internalizing more often and seeking social support less often than adults without headache (Holm et al., 1986; De Benedittis & Lorenzetti, 1992; Ehde & Holm, 1992). Some adults with CDH overuse analgesics, which is not an effective coping tool as it can lead to rebound headaches (Mathew et al., 1990). Children with CDH also frequently apply ineffective pain coping strategies including overuse of analgesics (Moore & Shevell, 2004). Holden et al. (1994) found that children and adolescents with CDH were more likely than those with recurrent headache to report externalizing (e.g. yelling, blaming others) as a pain coping strategy. Bandell-Hoekstra et al. (2002) found that children with more frequent, intense, and lengthy recurrent headaches reported using less distraction and more catastrophizing and internalizing than children with less frequent, intense, and lengthy recurrent headaches.

Researchers have not yet investigated whether treatment using coping training reduces pain or stress that may trigger, intensify, or maintain children's chronic headaches. Nor have researchers assessed the effectiveness of relaxation or biofeedback training in helping children with CDH to better cope with stress and pain. Coping training (Bakal et al., 1981), biofeedback and relaxation training (Blanchard et al., 1989), and home-based behavioral training (Holroyd et al., 1988) have shown limited success for adults with more severe and frequent CDH. However, Holroyd et al. (2001) found that CDH patients receiving anti-depressants and relaxation/coping training were more likely (64%) to show a 50 percent headache reduction than those receiving medication (38%) or relaxation/coping training (35%) alone. Furthermore, more intensive treatment involving 15 hours of instruction over four months regarding relaxation, medication abuse, coping, posture, and exercise delivered by multidisciplinary teams (physicians, physical and occupational therapists, psychologists) has shown to result in at least 50 percent reduction in headache frequency in more than one-half (Nash et al., 2004) to one third (Scharff & Marcus, 1994) of adult CDH patients. However, these findings are limited by the absence of control groups and the lack of assess-

ment of participants' learning and application of instructional material. Research is needed to contrast the effectiveness of individual, combined, and intensive interdisciplinary therapies for pediatric CDH sufferers.

Future research

CDH is conceptualized as a biological disorder with many physical, environmental, social, and psychological factors playing a role in its onset, maintenance, and exacerbation (Lipchik & Nash, 2002). Patients with CDH may suffer from a combination of headache-related issues including analgesic and caffeine overuse, psychiatric comorbidity, stress and ineffective coping. Research is needed to evaluate the effectiveness of intensive combination treatments involving factors important to individual patients. Also, researchers might consider whether adopting a group format for these treatments would decrease costs while retaining success, given the effectiveness of group treatment in adults with CDH (Scharff & Marcus, 1994) and other chronic pain populations (Rowan & Andrasik, 1996; Napier et al.,

1997). It is hoped that research in these areas will provide new insights for the treatment of pediatric CDH.

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Editor's note, 10 Oct 2006

After the above commentary was accepted for publication, a Supplement comprising articles on the topic of psychiatric comorbidity was published by *Headache: The Journal of Head and Face Pain* (2006, Vol 46 Suppl 3, Oct 2006). The Table of Contents can be seen on the following web page: <http://www.blackwell-synergy.com/toc/hed/46/s3>

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