

Children with Frequent or Severe Headache: New Data on Population Prevalence, Characteristics, Health Status and Needs and Access to Health Care

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Background and Purpose

Little is known about the population-based prevalence, socio-demographic characteristics, health status and health needs and use of children in America with frequent or severe headache, including migraine. This information is needed to guide the development and implementation of effective care and efforts to target and address the health care service needs of children and adolescents with frequent or severe headache. The purpose of this study is to determine the population prevalence, socio-demographic characteristics, health status and health care service needs and use of all children and children with special health care needs (CSHCN) ages 3-17 who experience frequent or severe headache, as confirmed by a child's health care provider and reported by a child's parent.

Methods

Prevalence and characteristics of children with headache were estimated using data from the 2003 National Survey of Children's Health (NSCH). The NSCH data represents 102,353 children nationally and is weighted to be representative of all children in America and in each state. Bivariate and logistic regression analyses were used to assess associations between health status and health care need, use and access to care variables and the presence or absence of frequent or severe headache in children.

Results: Population Prevalence

Table 1 shows that nationally 5.6% of all children ages 3-17 have parents who report that a doctor confirmed their child had frequent or severe headache, including migraine. This ranges from 3.2-7.7% across states. As can be seen, older children, females, lower income children and those with special health care needs are more likely to experience frequent or severe headache.

Results: Socio-Demographic and Health Related Characteristics

Table 2 reports and compares the socio-demographic characteristics of children ages 3-17 with frequent or severe headache with all children nationally. As can be seen, children with headache are disproportionately represented among older children, black children, lower income children and those with public insurance as well as among children meeting criteria for having a special health care need or moderate to severe socio-emotional difficulties.

Table 2. Characteristics of Children With Frequent or Severe Headache
Source: National Survey of Children's Health, 2003. *Difference from National Figures Significant at p < .05 level of significance.

Child Characteristics	Percentage of Children with Frequent or Severe Headache with Characteristic* (95% CI)	Percentage of Children Nationally with Characteristic* (95% CI)
Sex*		
Male	48.4 (46.8-50.9)	51.2 (50.6-51.8)
Female	51.6 (49.1-54.2)	48.8 (48.2-49.4)
Age (yrs)*		
3-5 years	2.8 (2.1-3.7)	20.5 (20.0-21.0)
6-11 years	33.1 (30.7-35.6)	35.9 (35.3-36.5)
12-17 years	64.1 (61.5-66.6)	40.6 (40.0-41.2)
Race/Ethnicity*		
White, Non-Hispanic	58.9 (56.2-61.8)	61.4 (60.8-62.0)
Black, Non-Hispanic	18.8 (16.5-20.9)	14.6 (14.1-15.0)
Hispanic	19.3 (14.1-19.7)	16.9 (16.4-17.4)
Multiple Race, Non-Hispanic	3.4 (2.6-4.5)	2.9 (2.8-3.1)
Other, Non-Hispanic	2.9 (1.7-4.4)	4.2 (3.9-4.5)
Household Poverty Level**		
<100%	25.0 (22.5-27.8)	17.1 (16.5-17.6)
100-200%	24.9 (22.9-26.9)	22.8 (22.2-23.3)
300-399%	29.9 (27.6-32.4)	33.4 (32.8-34.0)
400% or higher	20.4 (18.6-22.4)	26.8 (26.3-27.3)
Health Status*		
Meets criteria for having a special health care need*	43.2 (40.7-45.7)	19.4 (19.0-19.9)
Parent reports child experiences moderate or severe socio-emotional difficulties*	24.3 (22.1-26.8)	9.1 (8.9-9.5)
Insurance Type*		
Private Sector	56.2 (53.6-58.8)	64.4 (63.8-65.0)
Public Sector	35.3 (32.7-37.9)	26.2 (25.6-26.8)
Uninsured	8.6 (7.3-10.3)	9.4 (9.0-9.7)

* Weighted Percentage; **Based on US DSHS guideline

Results: Health Care Needs, Use and Access to Care

In addition to poorer health status, all children ages 3-17 as well as CSHCN with frequent or severe headache have greater needs for urgent care from their primary care provider (Fig 3) as well as needs for care from a specialist doctor (Fig 4) compared to all children and CSHCN who do not experience such headaches. These children also experience more problems accessing needed care from specialist doctors compared to other children who also need care from a specialist (Fig 5). Perhaps partly as a consequence, children with frequent or severe headache are also more likely to visit the emergency room two or more times (vs. just once) in a 12 month period. These findings remain significant after adjusting for variations in sex, age, race and household income of children (Table 3).

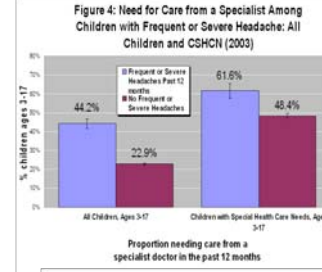
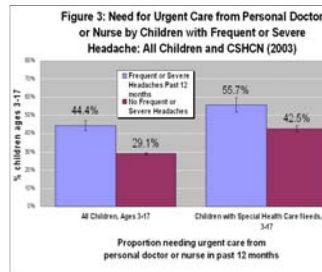


Figure 5: Children with Frequent or Severe Headache who Had Significant Problems Accessing Care from Specialist: All Children and CSHCN (2003)

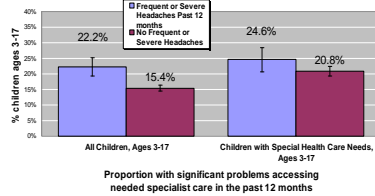
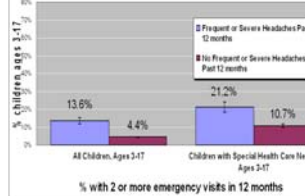


Figure 6: Emergency Room Visits For Children With Frequent or Severe Headache: All Children and CSHCN (2003)



Results: Health Status and Missed School

All children ages 3-17 as well as CSHCN with frequent or severe headache experience poorer overall health status compared to all children and CSHCN who do not experience such headaches (Fig. 1). Likewise, children who experience headache are much more likely to miss two or more weeks of school in a year compared to children not experiencing headache (Fig. 2). These findings are significant after adjusting for the sex, age, race and household income of children (Table 3).

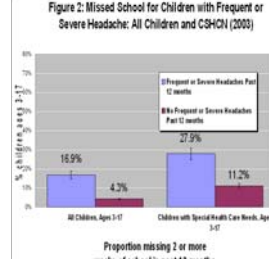
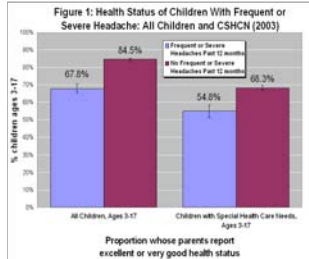


Table 3: Adjusted Odds Ratios Comparing Health Status and Health Care Needs, Use and Access to Care of Children With Frequent or Severe Headache to Children Without Frequent or Severe Headache in the Past 12 Months: All Children and CSHCN. Adjusted for sex, age, race and household income of child.

Variable	Adj. Odds Ratio for All Children Ages 3-17 With Headache (95% CI)*	Adj. Odds Ratio for CSHCN Ages 3-17 With Headache (95% CI)*
Child Missed Two or More Weeks of School in Past 12 Months	4.02 (3.42-4.73)	2.78 (2.26-3.43)
Child's Health is Excellent or Very Good	.40 (.34-.45)	.64 (.53-.76)
Parent needed care right away from personal doctor or nurse	2.26 (2.01-2.54)	2.06 (1.79-2.46)
Doctor said child needed to see a specialist	2.60 (2.31-2.92)	1.75 (1.46-2.09)
Parent reported significant problems accessing needed care from specialist(s)	1.44 (1.16-1.74)	1.32 (1.04-1.67)
Child visited the emergency room 2 or more times in past year (vs. only 1 visit)	3.79 (3.19-4.49)	2.52 (2.03-3.14)

*Data weighted and standard errors adjusted for complex sampling. Reference group = children/CSHCN without headache

Discussion

Studies in other countries and small US cohort studies have suggested that headache significantly impacts the lives of children and adolescents in America, including resulting in school absence and a large number of health care office visits each year (1, 2, 3). This study establishes the population prevalence of headache for all children and many subgroups of children in the US and confirms and further quantifies the health and health need impacts of headache suggested by other studies. We also further elucidate barriers to effective health care that children with frequent or severe headache may experience.

This study finds that frequent or severe headache is commonly experienced by children and adolescents in America, especially impacting older children and exacerbating the health and health care needs consequences of children with special health care needs (CSHCN are those experiencing health or above routine health care needs consequences due to an ongoing health condition). Findings indicate that all children and CSHCN with headache experience greater needs for urgent care and more problems accessing needed specialist care. We conclude that the disproportionate use of the emergency room by children with frequent or severe headache is in part due to these needs for and problems accessing primary and specialty care.

Results from this study point to the need for primary care providers to focus on early identification and treatment of headache and the efficient use of specialist care as well as to ensure response to parent's needs for urgent care for their child with headache. By addressing these issues, reductions in emergency use is expected and will not only yield substantial cost savings but will also reduce the child and family stress and burden associated with emergency room care.

Findings showing increased barriers to accessing needed specialists care for children with headache is likely to reflect many issues, including widespread problems in the supply of neurologists in many geographic areas in the US. Systems that coordinate referrals and access between primary and specialist care may be effective in ensuring that children most needing specialist care receive needed care in a timely manner and resort less to emergency services as well as in attenuating the greater risks these children experience to their health and quality of life.

Findings that CSHCN are both more likely to experience frequent or severe headaches and to also have greater needs for urgent care from their primary care doctors as well as care from specialist doctors point to the importance of expertise in the area of headache for providers caring for CSHCN as well as health insurance coverage for treatments to alleviate symptoms and prevent headache in children. To best act on our findings and these conclusions, the evidence base for effective treatment and prevention of headache in children must be expanded.

Findings are based on parent report of whether a child's doctor(s) determined that their child experienced frequent or severe headache and therefore may underrepresent the extent of this problem for children whose parents who do not recognize their child's headache problem or children with headache who do not receive health care. (4) State level findings for children with frequent or severe headache can be accessed at CAHMI's Data Resource Center for Child and Adolescent Health (www.nschdata.org) (5)

References

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