Headache
ISSN 0017-8748
doi: 10.1111/head.12782
Published by Wiley Periodicals, Inc.

Research Submission

A Survey of Headache Medicine Physicians on the Likeability of Headaches and Their Personal Headache History

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Background.—Two prior studies have shown an increased prevalence of migraine among physicians who are headache medicine specialists (HMS). There have been no studies of the prevalence of other headache disorders among HMS. A prior survey showed that neurologists like to treat some headaches more than others but there has not been a similar survey of HMS.

Objectives.—The aim of the survey was to learn more about the prevalence of headaches among HMS and which headache disorders they like to treat.

Methods.—An email survey was sent to 749 physician members of the American Headache Society who were asked to respond to the following statement using a 5-point Likert scale (from 1, strongly disagree to 5, strongly agree): "I like to treat patients with the following types of headaches or syndromes." They were asked, "Have you personally suffered from any of the following at any time during your life: episodic migraine (EM), chronic migraine (CM), refractory migraine (RM), episodic cluster (EC), chronic cluster (CC), new daily persistent headache (NDPH), and postconcussion syndrome (PCS)."

Results.—The response rate was 15.8% (n = 118) with a mean age of 51.4 years, 64.4% males, and 85.6% neurologists. HMS reported likeability for treating disorders in rank order as follows: EM (mean = 4.69, SD = 0.61); CM (mean = 4.20, SD = 0.94); RM (mean = 3.62, SD = 1.17); EC (mean = 4.37, SD = 0.80); CC (mean = 3.68, SD = 1.10); NDPH (mean = 3.52, SD = 1.21); and PCS (mean = 3.66, SD = 1.18). The lifetime prevalence of disorders was as follows: EM, 69.5% (85.7% in females and 60.5% in males); CM, 13.6% (19% in females and 10.5% in males); RM, .9% (2.4% females and 0% males); EC, 1.7% (0% females and 2.6% males); CC, 0%; NDPH, 0%, and PCS, 4.2% (7.1% females and 2.6% males). HMS with a personal history of EM (mean = 4.73, SD = 0.51) showed a significant preference ($t_{130} = 7.30$, $P < .001$) to treat episodic migraine more than other headaches (mean = 3.90, SD = 0.77).

Conclusions.—HMS preferred to treat some disorders more than others, with EM most liked and NDPH least preferred, which may reflect how well patients with those disorders respond to treatment. The lifetime prevalence of EM among HMS is significantly greater than among neurologists, both significantly greater than EM in the general population. An explanation for the higher prevalence among neurologists is not certain but perhaps migraine is associated with a choice to become an HMS during or after neurology residency. The lifetime prevalence among HMS of CM may be and EC is much greater than among the general population for uncertain reasons.

Key words: headache medicine physician, likeability, headache, migraine, cluster headache, physician–patient relationship

(*Headache* 2016;56:540-546)

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Accepted for publication December 9, 2015.

INTRODUCTION

Prior studies have found a much higher prevalence of migraine among neurologists in the United States,[1] Texas,[1–3] Canada,[4] Taiwan,[5] Germany,[6] Spain,[7] France,[8] and Norway[9] and an even higher prevalence of migraine among neurologist headache

Conflict of Interest: The authors report no conflict of interest.

specialists in the United States[1] and Germany.[6] Although there is one study of other headache disorders among neurologists in Texas,[3] there are no studies of the prevalence of other headache disorders among physicians who are headache medicine specialists (HMS).

Previously, Evans and Evans[3] found that neurologists like to treat migraine more than cluster headache and are neutral in treating chronic daily headache. However, a similar survey has not been performed of HMS.

In order to learn more about the headaches types which HMS personally have and whether they like to treat some types of headaches more than others, we conducted a survey on American Headache Society members.

METHODS

A survey was developed by one of the authors (R.W.E.). With the approval of the executive committee of the American Headache Society, 749 physician members were emailed the survey formatted for SurveyMonkey three times in October and November, 2014 titled, "Headache medicine survey on physician satisfaction."

The survey asked for replies to 68 questions or statements, with some grouped under one question for a total of 25 questions organized into the following six sections: demographics, professional quality of life and satisfaction, future practice plans, burnout, likeability of headache disorders, and personal history of headache disorders. The demographics of the 127 anonymous respondents and results of the first four sections are available in a recent publication.[10]

Statistical Analysis.—Frequency counts (%), range, mean, and standard deviation (S.D.) were used to summarize the data properties. One-sample *t*-tests were performed to investigate whether there is a significant difference between the sample's mean response and "neutral" response. Independent sample *t*-tests were used to compare the difference between mean responses of two different samples. We performed the statistical analyses using Statistical Package for the Social Sciences (SPSS), version 23. All analyses utilized two-tailed hypotheses testing with $P < .05$ as the threshold value of statistical significance.

Table 1.—Demographics (N = 118)

	Percentage	Frequency
Age		
32-41	23.7%	(28)
42-51	20.3%	(24)
52-61	38.1%	(45)
>60	17.8%	(21)
Gender		
Male	64.4%	(76)
Female	35.6%	(42)
Years in practice		
<5	14.4%	(17)
5-10	12.7%	(15)
11-20	27.1%	(32)
21-30	29.7%	(35)
31-42	16.1%	(19)

RESULTS

The present article seeks to investigate the relationships between HMS's likeability of treating headache disorders and their personal history of headache disorders and reports the findings from the respective items measuring the above mentioned variables. One hundred and eighteen physicians, for a response rate of 15.8%, responded to the items presented in this study. Respondents' demographics are presented in Table 1. Seventy-six male physicians (64.4%) with an age range of 34-75 years and 42 female physicians (35.6%) with an age range of 32-68 years responded to the survey. The mean age of respondents is 51.41 years with a range of 32-75 years (S.D. = 10.58). The respondents reported a mean number of years in practice of 18.82 with a range of 0-42 years (S.D. = 11.02). The specialties of respondents with the numbers (n) and percentages of the total were as follows: neurologists, 101 (85.6%); pediatric neurology, 6 (5%); internal medicine, 4 (3.3%); anesthesiology/pain, 3 (2.5%); pediatrics, 2 (1.7%); and family medicine, 2 (1.7%).

Table 2 provides the responses to the statement, "I like to treat patients with the following types of headaches or syndromes" for each of the seven headaches or

Table 2.—Responses to Statement, "I Like to Treat This Disease or Symptom" (N = 118)

Diseases	Mean response (SD)
1. Episodic migraine	4.69 (.61)
2. Chronic migraine	4.20 (.94)
3. Refractory migraine	3.62 (1.17)
4. Episodic cluster	4.37 (.80)
5. Chronic cluster	3.68 (1.09)
6. New daily persistent	3.52 (1.21)
7. Postconcussion syndrome	3.66 (1.18)

1-5 Likert Scale (1 = Strongly Disagree, 3 = Neutral, 5 = Strongly Agree).

syndromes. Physicians' most liked headache is episodic migraine (mean = 4.69, S.D. = 0.61), followed by episodic cluster (mean = 4.37, S.D. = 0.80), chronic migraine (mean = 4.20, S.D. = 0.94), chronic cluster (mean = 3.68, S.D. = 1.09), postconcussion syndrome (mean = 3.66, S.D. = 1.18), refractory migraine (mean = 3.62, S.D. = 1.17), and new daily persistent (mean = 3.52, S.D. = 1.21).

Table 3 provides the results of the 118 respondents to the following question: "Have you personally suffered from any of the following at any time during your life (check all that apply)?" The following number of respondents indicated that they had a lifetime history of more than one headache type: 10 (5 males and 5 females) physicians have episodic migraine (EM) and chronic migraine (CM); 1 (female) physician has EM, CM, refractory migraine (RM), and postconcussion syndrome (PCS); 2 (females) physicians have EM, CM, and PCS; 1 (male) physician has EM, CM, and episodic cluster (EC); 1 (male) physician has EM and PCS; and 1 (male) physician has EM and EC.

Table 3.—Lifetime Personal History of Headache Types or Syndrome

Headache types or disorders	Total (n = 118), n (%)	Male (n = 76), n (%)	Female (n = 42), n (%)
Episodic migraine	82 (69.5)	46 (60.5)	36 (85.7)
Chronic migraine	16 (13.6)	8 (10.5)	8 (19.0)
Refractory migraine	1 (0.9)	0 (0)	1 (2.4)
Episodic cluster headache	2 (1.7)	2 (2.6)	0 (0)
Chronic cluster headache	0 (0)		
New daily persistent headache	0 (0)		
Postconcussion syndrome	5 (4.2)	2 (2.6)	3 (7.1)
None of the above	33 (28.0)	27 (35.5)	6 (14.3)

Table 4 provides the numbers and percentages of male and female physicians who reported their preferences for treating patients for seven types of headaches or syndromes on a 5-point Likert scale, where 1 = strongly disagree, 3 = neutral, and 5 = strongly agree. One-sample *t*-tests testing against a value of 3 (neutral) showed that all seven types of headaches are liked by the HMS even with their different history of headache(s): episodic migraine is liked, $t_{117} = 30.08$, $P < .001$; chronic migraine is liked, $t_{117} = 13.92$, $P < .001$; refractory migraine is liked, $t_{117} = 5.75$, $P < .001$; episodic cluster is liked, $t_{117} = 18.55$, $P < .001$; chronic cluster is liked, $t_{117} = 6.74$, $P < .001$; new daily persistent headache is liked, $t_{117} = 4.64$, $P < .001$; and postconcussion syndrome is also liked, $t_{117} = 6.1$, $P < .001$. However, an analysis of variance with types of headaches as the independent variable shows that there are significant differences in likeability between the seven types of headaches, $F_{6, 819} = 23.33$, $P < .001$.

Episodic migraine was the only disease with enough responses to analyze whether physicians with a personal history of only episodic migraine like to treat episodic migraine more than other headaches. An independent sample *t*-test showed that episodic migraineurs like to treat episodic migraine (n = 66, mean = 4.73, S.D. = 0.51) more than other headaches (n = 66, mean = 3.90, S.D. = 0.77), $t_{130} = 7.30$, $P < .001$. An independent sample *t*-test to examine whether physicians with history of any single type of headache (n = 69, mean = 4.05, S.D. = 0.66) like to treat headaches more than physicians who do not have any history of headache (n = 33, mean = 3.81, S.D. = 0.83) showed that there is no significant difference in likeability to treat headaches between these two groups of physicians, $t_{100} = -1.61$, $P = .11$. Another independent sample *t*-test to examine whether

Table 4.—Numbers and Percentages of Headache Medicine Physicians' Preferences for Treating Patients for Seven Types of Headaches or Syndromes

Diseases	Strongly agree, % (n)	Agree, % (n)	Neutral, % (n)	Disagree, % (n)	Strongly disagree, % (n)	N
Episodic migraine	73.73 (87)	22.88 (27)	2.54 (3)	0 (0)	0.85 (1)	118
Chronic migraine	45.76 (54)	37.29 (44)	10.17 (12)	5.08 (6)	1.69 (2)	118
Refractory migraine	24.58 (29)	38.98 (46)	15.25 (18)	16.10 (19)	5.08 (6)	118
Episodic cluster	54.24 (64)	31.36 (37)	12.71 (15)	0.85 (1)	0.85 (1)	118
Chronic cluster	26.27 (31)	34.75 (41)	22.03 (26)	14.41 (17)	2.54 (3)	118
New daily persistent	21.19 (25)	40.68 (48)	14.41 (17)	16.10 (19)	7.63 (9)	118
Postconcussion syndrome	27.12 (32)	37.29 (44)	15.25 (18)	15.25 (18)	5.08 (6)	118

1-5 Likert Scale (1 = Strongly Disagree, 3 = Neutral, 5 = Strongly Agree).

physicians with a history of any one type of headache (n = 69, mean = 4.05, S.D. = 0.66) like to treat headaches more than physicians with history of multiple types of headaches (n = 16, mean = 4.14, S.D. = 0.84) showed that there is no significant difference in likeability to treat headaches between these two groups of physicians, $t_{83} = -0.46$, $P = .65$.

Physicians with a history of episodic migraine showed a higher level of liking to treat episodic migraine (n = 66, Mean = 4.73, S.D. = 0.51) than physicians without a history of episodic migraine (n = 36, Mean = 4.56, S.D. = 0.81). However, an independent sample *t*-test showed that the difference between these two groups in terms of liking to treat episodic migraine failed to reach the level of statistical significance [$t_{100} = 1.31$, $P = .19$].

DISCUSSION

There were 118 respondents for a response rate of 15.8%, which is comparable to other American Headache Society email surveys that have a range of response rates of 10-20% (personal communication, Elizabeth Frye). Response bias cannot be excluded with those more dissatisfied and with higher degrees of career dissatisfaction or burnout completing the survey. However, response bias for the topics of this survey is unlikely as the results presented here were the last two items and there was no notice from the title of the survey that these items would be of interest.

HMS most liked to treat episodic migraine and least preferred treating new daily persistent headache. Perhaps the best explanation for preferences is that the preferences from most liked to less liked correspond with how well patients with those disorders respond to treatment. Although there are no similar surveys of HMS, for comparison to the Texas neurologist survey, the disorders and mean responses on the same 5-point Likert scale were as follows: migraine, 4.32; cluster headache, 3.90; chronic daily headache, 3.02; and postconcussion syndrome, 3.17.[3]

Respondents with a personal history of episodic migraine like to treat episodic migraine more than other headaches. In the Texas neurologist study, both neurologist migraineurs and nonmigraineurs like to treat migraine.

The lifetime incidence of episodic migraine is 43% in women and 18% in men.[11] The cumulative incidence estimates were derived using methods intended to minimize the influence of forgetting and remission. The respondents report a lifetime prevalence of 69.5%, 85.7% females and 60.5% males, much greater than the general population. A prior smaller study of American neurologist HMS found a similar lifetime prevalence of migraine of 81.5% in females and 71.9% in males.[1] A study of German neurologist HMS found a lifetime prevalence of migraine of 48.8%.[6]

A comparison to neurologists is quite relevant as 85.6% of respondents are neurologists (and 5%

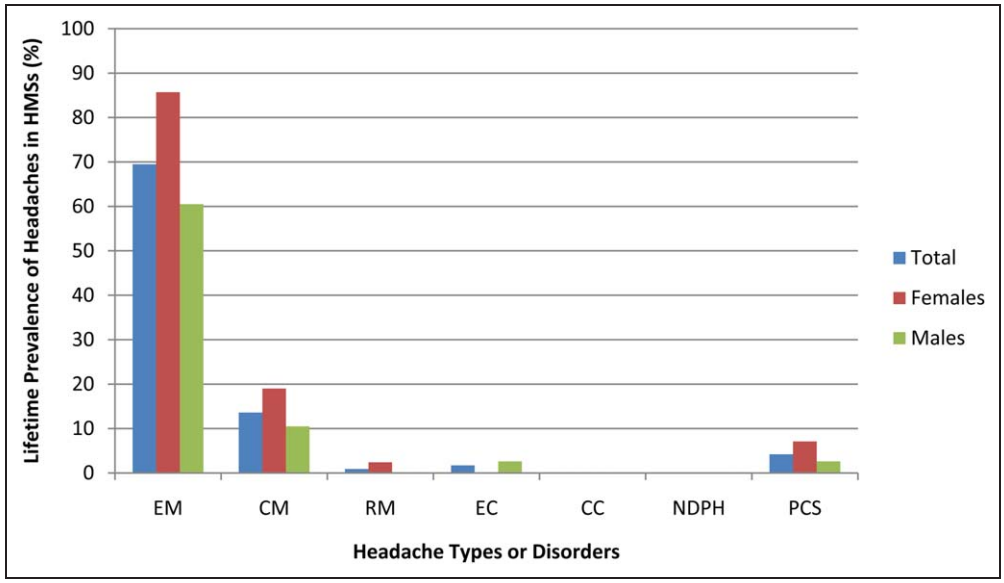

Fig. 1.—The lifetime prevalence of headaches in HMS.

are pediatric neurologist but little is known about their prevalence of migraine). The lifetime prevalence is even greater than among American neurologists (62.8% females, 46.6% males)[1] as well as those in many other countries.[6,12] Evans et al explore the following three explanations that may account for the increased prevalence among neurologists: neurologists are better able to self-diagnose or better able to remember headaches with particular features; migraine is associated with a choice to become a neurologist; and occupational stress increases the risk of developing migraine.[13] So perhaps migraine is also associated with a choice to become a headache medicine specialist during or after neurology residency.

Anecdotally, many of the co-author's (R.W.E.) patients ask about his own history of migraine and then take great interest and satisfaction when told that their doctor is a migraineur. There are no studies to suggest additional benefit to patients when treated by a HMS who is also a migraineur. Interestingly, in a French study of 711 general practitioners (325 with migraine, 227 without migraine but with a close family member with migraine, and 159 with neither), migraineurs' self-reported quality of life and feeling about medical support were highest when their doctors also had migraine and lowest among patients treated by doctors with no close family members suffering from migraines.[14] However, another study of French neurologists found that perceptions of migraine were similar between neurologists who were migraineurs compared to those who were not suggesting that the neurologist being a migraineur did not influence patient care.[8]

The one year prevalence of chronic migraine in the United States has been estimated as 0.91%, 1.29% in females and 0.48% in males.[15] The lifetime prevalence is not known. The respondents report a lifetime prevalence of chronic migraine of 13.6%, 19% in females (including one with refractory migraine) and 10.5% in males, which we suspect may be much greater than in the general population.

There are no prior studies of chronic migraine among HMS. However, this is much greater than the 2.3% lifetime prevalence of chronic daily headaches among Texas neurologists.[3] It is not certain whether chronic migraineurs are attracted to headache medicine as a specialty or whether occupational stress of the field may be responsible for an increased rate of transformation from episodic migraine.

A meta-analysis of population-based studies showed the lifetime prevalence of cluster headache

of 124 per 100,000.[16] Episodic cluster headache was reported by two males only (2.6% of males and 1.7% of all respondents) and no chronic cluster headaches were reported. It is not certain why HMS would have much greater episodic cluster headache than the general population. Interestingly, 2/84 Texas neurology respondents or 2.3% also reported a lifetime prevalence of cluster headaches.[3] Since cluster headache is often misdiagnosed with long diagnostic delays typical[17] and a neurologist could correctly diagnose their own, is it possible that cluster headache is more common than prevalence studies suggest? Alternatively, neurologists and HMS may have a greater prevalence of cluster headaches although the reason is not known.

One of the respondents with episodic cluster headache also had episodic migraine and the other also had chronic migraine which may be rare. Although migraine and cluster have been reported as co-existent,[18] the lifetime prevalence of having both has not been reported.

The 4.2% lifetime prevalence of postconcussion syndrome may not be greater than the general population although there are limited data on the lifetime incidence. Postconcussion syndrome develops in more than 50% of those who have mild head injuries,[19] with headaches present in 91% one month after the injury.[20] The Centers for Disease Control estimates that 1.4 to 3.8 million concussions occur per year in the United States. A New Zealand study found that 31% of the population had at least one traumatic brain injury by age 25.[21] In the Texas neurologist study, 3.6% reported a lifetime history of postconcussion syndrome.[3]

CONCLUSION

HMS like to treat some disorders more than others, with episodic migraine most liked and new daily persistent headache least liked, which may reflect how well patients with those disorders respond to treatment. Since it is not known whether likeability of a headache type or an HMS's personal history of migraine has an effect on patient satisfaction or outcome, additional study may be of interest. The lifetime prevalence of episodic migraine among HMS is significantly greater than among neurologists, both significantly greater than in the general population. The lifetime prevalence among HMS of chronic migraine may be and episodic cluster is much greater than among the general population for uncertain reasons. The low response rate, although similar to other American Headache Society surveys, is a limitation of this study. However, the lifetime prevalence of those with episodic migraine is similar to other studies.

Acknowledgments: The authors would like to thank Elizabeth Frye, Project Manager, of the American Headache Society for her outstanding work in formatting for SurveyMonkey and sending out the survey, and Marcelo E. Bigal, MD, PhD, for discussing the results. The authors thank and are much appreciative of their colleagues who completed the survey.

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