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Articles

Art and Migraine: Researching the Relationship Between Artmaking and Pain Experience

Randy M. Vick, Chicago, IL, and Kathy Sexton-Radek, Elmhurst, IL

Abstract

This research project extends a previous study (Vick & Sexton-Radek, 1999) in examining the relationship between artmaking and pain among 127 migraine sufferers. A basic overview of migraine symptoms and treatment is presented along with a discussion of concepts relating to "migraine art" in order to provide a context for this project. Surveys dealing with headache history, pain experience, and artmaking practices were mailed to 371 participants in a national migraine art competition; both quantitative and qualitative data were analyzed. Participants reported that artmaking was more likely to trigger headaches than to alleviate them and that both the quantity and quality of studio work declined during headache episodes. In addition, participants identified numerous art materials and practices that they felt precipitated migraines and noted avoidance strategies they used to manage their headaches. The implications of these counterintuitive findings for art therapy practice are discussed.

Introduction

This survey research project involves the exploration of the interplay of artmaking practices and headache pain in the lives of migraine sufferers. Our investigation was inspired in large part by a conversation the first author had with artist and migraineur Steve Perrault at the opening for the 1998 "Migraine Masterpieces" exhibit.[1] When asked if he found his artmaking helped his migraines, he responded that this was not particularly the case, and in fact, the opposite was sometimes true (Vick, 1998). Steve works in a style using very subtle gradations of color from pale to deep tones within distinctly defined, hard-edged portions of the painting (Figure 1). Due to the quick-drying nature of the acrylic paint he uses, it is necessary for him to work with speed and precision. Steve has identified this intense concentration as occasionally causing a migraine.

Because migraine is a clinical specialization not familiar to most art therapists and the area of migraine art relates to several disciplines, a significant portion of the literature review is an overview of this complicated neurological syndrome and related topics. Diagnostic features, terminology, and demographic information are covered with particular attention to psychological and visual aspects of the illness. The use of art as an assessment, treatment, and research tool in the areas of headache and pain will be surveyed in order to establish a theoretical foundation for this study.

Literature Review

Migraine Description

Migraine is a neurovascular disease marked by severe, frequently one-sided headaches in combination with physical, neurological, and physiological features (Ferrari, 1998). Sometimes known as a "sick headache," the International Headache Society (HIS) (1988) broadly defines migraine by this combination of symptoms that co-occur with frequent, severe headache. It has been estimated that in the United States, 6% of men and 18% of women suffer from this disorder, creating an economic burden of approximately $13 million a year in absenteeism and reduced productivity (Hu, Markson, Lipton, Stewart, & Berger, 1999). Lipton, Hamelsky, Kolodner, Steiner, and Stewart (2000) found that migraineurs experience a diminished health-related quality of life (HRQoL) as well as a higher incidence of depression and that these figures worsen with increases in headache frequency and severity.

In addition to the cardinal features of head pain and nausea, migraine sufferers also experience a wide array of neurological symptoms including vertigo, hypersensitivity to sound and light, and visual disturbances. These last phe-

Editor's note: Randy M. Vick, MS, ATR-BC, LCPC, is Chair of the Department of Art Therapy at the School of the Art Institute of Chicago in Chicago, Illinois. Kathy Sexton-Radek, PhD, is a professor of psychology at Elmhurst College in Elmhurst, Illinois. The authors wish to thank the National Headache Foundation for its approval to conduct this study and the School of the Art Institute of Chicago for its financial support in the copying and postage for the surveys. Correspondence concerning this article may be sent to Mr. Vick via e-mail at rvick@artic.edu.

[1] **Note:** To see art from the 1998, 2001, and 2003 contests go to www.headaches.org/consumer/eventsindex.html#migraine masterpieces and look under "Gallery of Winners."

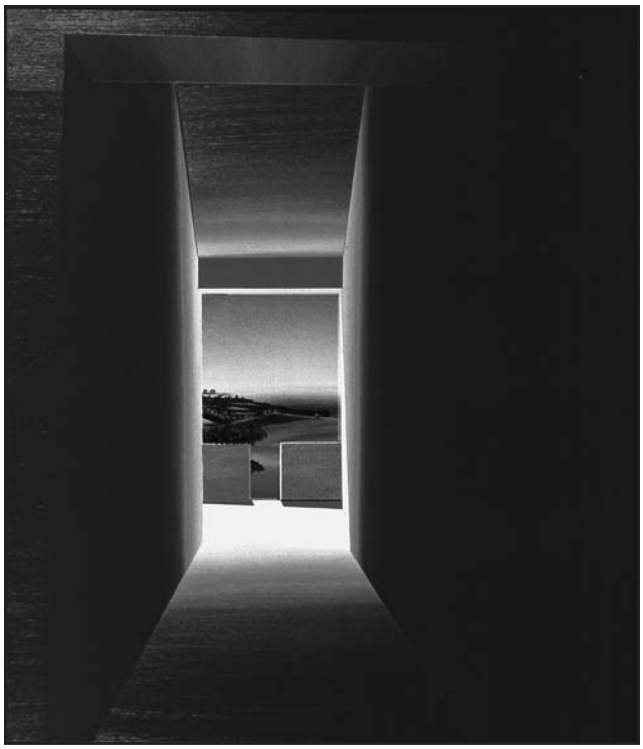

Figure 1 "Emerging Remission" by Steve Perrault (acrylic on canvas, 20" x 24")

nomena include blurred vision or blindness in all or part of the visual field (hemianopia), seeing scintillating flashes of light (scotoma), seeing serrated circles or arcs of light (fortification spectra), seeing objects as larger or smaller than normal (metamorphopsia), seeing objects up-side-down (inversion), and distorted perceptions of motion as well as more elaborate visual hallucinations (Hachinski, Porchawka, & Steele, 1973). Also reported are double or multiple images (visual perseveration) and changes in color, contrast, or depth perception (Klee & Willanger, 1966). Other more rare neurological phenomena include the illusion of split (Podoll & Robinson, 2000b) or mosaic-like (Podoll & Robinson, 2000e) images or the sense that one is split in half (Podoll & Robinson, 2002b), perceiving additional outlines or "corona" around objects (Podoll & Robinson, 2001a), out-of-body experiences (Podoll & Robinson, 1999b), blurring between auditory and visual sensations (synesthesia) (Podoll & Robinson, 2002a), and the experience of highly idiosyncratic bodily sensations that differ markedly from previous perceptions (cenesthesias) (Podoll, Bollig, Vogtmann, Pothmann, & Robinson, 1999). The so-called "Alice in Wonderland" syndrome makes reference to the bizarre experiences of the title character, which, it has been speculated, were experienced by that book's author and migraineur Lewis Carroll (Podoll & Robinson, 1999a). This syndrome includes dramatic distortions in bodily awareness, depersonalization experiences, and visual disturbances that include the Cheshire Cat-like tendency for objects to fade from view when looked upon. In fact, the presence or absence of visual phenomena marks the difference between the two main subtypes of migraine. "Classic" migraine features an "aura" consisting of visual and other neurological symptoms (such as numbness in the arms and face and expressive dysphasia) that precede the onset of pain (Blau, 2004). The "common" migraine, experienced by 75% of sufferers, occurs without the aura (Ferrari, 1998).

As might be imagined, the progression of such a chronic and variable disorder from normal through acute phases is complex. Blau (1992) documents a five-phase pathogenesis of the classic migraine. The prodromal phase features slow, subtle changes in behavior, mood, and bodily functions followed by the aura experience (phase 2). The third phase of headache features the pain experience accompanied by nausea, pallor, sleepiness, and hypersensitivity to light, sound, and odors. The next phase of resolution may feature vomiting and deep sleep, and the final recovery phase is frequently marked by a "hangover" experience of physical and mental fatigue, limited food tolerance, and a mood shift. Although highly variable, the progression of migraine is well documented, yet the precise cause is less well understood—though most authorities recognize the combined influences of hereditary, physiological, psychological, dietary, behavioral, social, and environmental factors (Kraaimaat & Van Schevikhoven, 1988).

With such a vast array of influences, a great deal of study has been devoted to migraine "triggers" (circumstances that apparently cause or worsen headaches). Some factors, such as diet, can be controlled by the headache sufferer whereas others, such as genetics, cannot. A study of the confidence participants had in their ability to prevent headaches (self-efficacy) identified over 75 such influences. The researchers found that individuals who scored higher on an assessment of self-efficacy experienced less depression and anxiety and manifested fewer somatic symptoms and maladaptive behaviors (Martin, Holroyd, & Rokicki, 1993). Levor, Cohen, Naliboff, McArthur, and Heuser (1986) found an increase in stressful events, a drop in physical activity, and a tendency toward emotional arousal prior to the onset of migraine.

Perhaps of greatest interest to art therapists is the relationship between psychological issues and migraine, particularly depression. As one author pointed out, "Chronic pain almost always leads to depression" (Hendler, 1984, p. 30). Most authorities, however, see a more subtle relationship between the two because it is difficult to establish a true cause-and-effect relationship between psychological and pain symptoms. Andrasik, Blanchard, Arena, Teders, and Teevan (1982) observed a "slight to moderate psychological disturbance" (p. 180) among the headache sufferers they studied. Scharff, Turk, and Marcus (1995a) noticed that pain was reported as more frequent and intense among headache sufferers with higher psychological-distress scores. Knight and Camic (1998) advocate a psychophysiological model that considers the influence of psyche and soma as bidirectional. This approach employs the concept of healing rather than curing wherein a person in a chronic pain situation may be able to achieve improved life satisfaction even if the complete elimination of pain is not possible.

Of additional psychological significance is the individual's response to headache pain. Scharff, Turk, and Marcus

(1995b) found that "migraine patients were significantly more likely to avoid noise, light, social activity, and physical activity" (p. 397) than other types of headache sufferers. This factor is important because fear of pain and the marked tendency to avoid activities and circumstances (even pleasurable ones) associated with it can contribute to a cycle of disability (Hursey & Jacks, 1992). The impact of life events, daily hassles, coping style, and social support in relationship to the frequency and severity of pain is also important (Fernandez & Sheffield, 1996). Marlowe (1998) reports that avoidance-coping and emotional-discharge coping are more common among individuals experiencing increased levels of psychological distress, whereas individuals using problem-solving and affect management skills feel less distress. Similarly, French et al. (2000) reported, "Individuals with low levels of self-efficacy will be less likely than individuals with high self-efficacy to take actions to prevent or manage headache episodes" (p. 653).

Migraine Assessment and Treatment

Although diagnosis by physicians in the United States is on the rise, according to a 2001 study (Lipton, Diamond, Reed, Diamond, & Stewart) only 48% of migraine sufferers are estimated to have been formally diagnosed. Accurate diagnosis is necessary so that the most effective course of treatment can be selected. A careful diagnostic evaluation includes a detailed history and examination of physical, neurological, mental, sensory, and motor functions (Diamond & Delessio, 1986). When indicated, extensive psychological assessment and treatment are recommended (Camic, 1989).

Though many preventive or abortive medications are available, often an optimal pharmacological regimen is discovered only after considerable trial and error (Ferrari, 1998). In addition, many migraine sufferers also seek nonpharmacological treatments as alternatives or complements to their medical care. Assessment and intervention by mental health professionals can play a vital role in the care plan. Psychodynamic, cognitive, behavioral, and family systems approaches can all contribute valuable perspectives in migraine care (Diamond & London, 2000). Key to a true biopsychosocial understanding of patients with long histories of migraine is the cumulative impact of their pain experience. Over time, a pattern of avoiding even pleasurable activities as a strategy for preventing and managing pain can exacerbate feelings of depression and isolation (Turk, 1996). The use of alternative and complementary therapeutic approaches is on the rise in the area of pain management with biofeedback, imagery, EMDR, relaxation, meditation, and hypnosis being among the most widely used (Knight & Camic, 1998).

But what is the role of art therapy in the assessment and treatment of migraine and other pain syndromes? A health psychologist writes of his practice:

> I have come to rely on the use of visual arts to help distract patients from pain, to help them make meaning of the pain, to relax, to mourn the loss of physical functioning. Unfortunately, at the time of this writing, there are few reported studies using art therapy with chronic pain patients; I find this astonishing. (Camic, 1999, p. 47)

Several years later, we find the situation is little changed.

Art in the Assessment and Treatment of Headache Pain

Our search of the literature turned up six articles documenting the use of drawing to diagnose or assess headache pain—all involving children. Cady, Farmer, Griesemer, and Sable (1996) used a combination of headache drawings and questionnaires to assess the prevalence of headache among children in a general population. Hachinski et al. (1973) collected drawings over an 11-year period from children who were hospitalized for migraine and concluded that 41% experienced visual symptoms. Unruh, McGrath, Cunningham, and Humphreys (1983) asked patients with migraine or chronic musculoskeletal pain to "draw a picture of your pain" and "draw a picture of you when you are in pain" (p. 387). They categorized the drawings by dominant color and content and found frequent use of red and black, and developed a set of specific pictorial categories that could be identified for each type of drawing requested. Kurylyszyn, McGrath, Cappelli, and Humphreys (1987), hoping to identify universal features that depicted pain intensity, looked for correlations between drawings by pediatric headache patients and scores on a six-point pain scale completed by the same children. They found (not surprisingly, perhaps) that independent raters could more easily discriminate between drawings of "no pain" and "high pain" than between moderate levels of pain. Lewis et al. (1996) conducted a study in which drawings of participants' headache experiences were assessed for their value in helping determine what patients wanted to receive from their visit to the clinic. They concluded that such drawings were a "powerful tool" (p. 229) in helping clinicians identify the unspoken expectations and fears of their clients. Stafstrom, Rostasy, and Minster (2002) tested the usefulness of drawings to assist in making differential diagnoses between migraine and nonmigraine headaches in children. Blind raters received the drawings, and it was determined that such drawings were highly specific and sensitive in differentiating among the various headache types. The authors concluded that this use of drawing was an accurate and useful diagnostic aid.

Only a few published studies on the use of art therapy as a treatment modality with headache were found. In an early example, Landgarten (1981) presented a case study of a man who experienced "severe chronic head pains located in the frontal lobe" (p. 349). In this instance, depictions of the headaches were used along with a four-part "autogenic training" that consisted of a relaxation exercise, imagery induction, pleasant feeling reinforcement, and comparative assessment as the basis of the treatment (p. 352). Long (1998) published two case studies of migraine patients (one child and one adult). Techniques she used included drawings depicting the headache as well

as a "self-hypnotic method" involving a patient-produced graphic pain scale and guided imagery that focused on the reduction of pain on this scale (p. 550). In all three cases, psychological aspects of the individual's life became a central focus of the treatment.

Artists and Migraine

Due, in part, to the curious assortment of visual phenomena experienced during a migraine episode, the particular experience of artist-migraineurs has received a fair amount of attention from professionals and the general public. Articles documenting or speculating on the impact of migraines on artistic output have been written about a diverse collection of artists including Hildegard of Bingen (Sacks, 1992), Giorgio de Chirico (Diamond, 1999; Fuller & Gale, 1988; Podoll, Robinson, & Nicola, 2001), Pablo Picasso (Ferrari & Haan, 2000; Podoll, Robinson, & Nicola, 2003), Georgia O'Keefe (Cadenhead, 1985; Lisle, 1980), and the contemporary artist Sarah Raphael (Greig, 1998; Podoll & Ayles, 2002) and others (Podoll & Robinson, 2000d; Podoll & Robinson, 2001d). Migraine as an artistic theme has even inspired art exhibits (Nova, 2002; Wickelgren, 1989) including those that have served as the basis for this research.

The term "migraine art," attributed to Derek Robinson, refers to the visual representations of both the symptoms and experience of migraine (Podoll, 2001). It was Robinson who initiated the process that eventually lead to the British Migraine Association sponsoring four national competitions for migraine sufferers in the 1980s (Podoll, 2001; Wilkinson & Robinson, 1985). An archive of 562 works from these events has been the basis of numerous research articles by Podoll and Robinson and their associates. Two main methodologies characterize this research. One method involves a systematic review of artworks from the collection and discussion of how selected artworks might represent particular migraine symptoms as experienced by the artists. In the earliest of these studies, Wilkinson and Robinson documented the suggested presence of visual loss, distortions, and other illusory phenomena. Subsequent projects focused on specific visual symptoms that included out-of-body experiences (Podoll & Robinson, 1999b), visual splitting (Podoll & Robinson, 2000b), disturbances in body schema (Podoll & Robinson, 2000c), mosaic vision (Podoll & Robinson, 2000e), corona phenomenon (Podoll & Robinson, 2001a), and split body image (Podoll & Robinson, 2002b). A limitation of these studies is that years had passed between the time the art was produced and the time of the studies. When attempts to reach the artists were made, many could not be found, and if they were found, recall of details was almost certainly a critical issue. Without such direct input from the artists, speculation on which symptoms a particular artist experienced or whether the depictions were literal or symbolic could not be confirmed.

A second methodology used a modified case-study format with artist-migraineurs from the contests or other sources. These projects were strengthened by the inclusion of both the examination of artwork *and* clinical interviews with the artists, making confirmation of symptomatological hypotheses possible. Topics studied were unusual pain sensations (Podoll & Robinson, 2000a), "Alice in Wonderland" phenomena (Podoll & Robinson, 2000f), "Lilliputian" hallucinations (Podoll & Robinson, 2001b), the sense of a "presence" standing near the patient during the migraine (Podoll & Robinson, 2001c), and auditory-visual synesthesia (Podoll & Robinson, 2002a). Other studies within this case-study group focused more specifically on the impact of migraine and migraine-related imagery on the careers of a sample of professional artists (Podoll et al., 1999; Podoll & Robinson, 2000d; Podoll & Robinson, 2001d).

As impressive as this array of studies is, probably the most in-depth treatment of the topic of artist-migraineurs and their art to date has been conducted by an art therapist. Cadenhead[2] (1985) designed a qualitative research project based on "the belief that the artist can transform the experience of his suffering or the suffering of others into art forms which 'speak' to a universal audience" (p. 2). Ten participants responded to detailed structured interviews on topics relating to their headache history, artmaking, and relationships between these two areas of their lives. As an artist and migraine sufferer herself, Cadenhead brought two pieces of her own art as a "visual interview probe" (p. 133) to stimulate discussion and asked participants to share art pieces of their own that related to the research topic. Her role as participant-observer was intended to build connections with participants and add depth to the study. She concluded there was not only a commonly shared experience of migraine as a frustrating, disruptive force, but also a belief that the tension that created the headaches can serve as a source of artistic creation. Many participants had mental and visual images that were later incorporated into their work. Imagery commonalities were observed as well.

Method

Background

Though focused on by only a handful of authors (unknown to us when we began our research), elements from this subspecialty of migraine-art research found their way into our project. Taking a cue from the British project, the National Headache Foundation (NHF) cosponsored (with a pharmaceutical company) the first "Migraine Masterpieces" contest in 1989 as a way to raise public awareness of migraine diagnosis and treatment. The nationwide contest gave migraine sufferers the opportunity to submit original art that depicted their headache experience. Works by the top 25 finalists were gathered in an exhibit for public education purposes (Webb, 1989). Nearly a decade later, the call went out again for a second

[2] **Note:** The authors are indebted to Karen Cadenhead, who by coincidence was a finalist in a 1998 migraine art contest and a participant in our current research, for bringing her doctoral dissertation to our attention.

exhibit (NHF, 1997). This time, the first author served on the exhibition jury, and by the time of the opening, was formulating the idea of approaching the contestants as a pool of potential research participants. In conversations with the exhibitors, it was learned that art was not always "therapeutic," and sometimes even *triggered* migraines (Vick, 1998, 1999)!

With permission from the sponsoring organization, a survey was developed and mailed to all contestants asking questions about both artmaking and headache experiences. The results from this initial survey were published in a national headache journal (Vick & Sexton-Radek, 1999). When the first author was asked to judge the 2001 contest, the decision was made to replicate the study, and a slightly modified version of the survey was sent to all contestants after the judging was complete. In each incidence, the winners of the contests were announced prior to the mailing of the surveys.

Participants

Contestants from the 1998 and 2001 NHF art competitions were invited to participate in a study of the impact of migraine headache pain and art performance. In the 1998 sample (Cohort 1), 151 surveys were sent with a return of 62 respondents (41.05%), and in the 2001 sample (Cohort 2), 166 surveys were sent with a return of 65 respondents (39.15%). The demographic data from the two sample groups (Table 1) reflect the age range of migraine sufferers as well as the disproportionate representation of women that is typical of this clinical population.

Instrument

A two-page questionnaire (Appendix A) was mailed to members of each cohort shortly after the contest judging was complete, along with a cover letter explaining the project. Participants were given 4 weeks to reply, addressed stamped envelopes were provided, and return of the survey was considered consent to participate. Both qualitative and quantitative items were included relating to migraine history, headache activity, art materials and practices, and pain triggers and coping. All participants were asked questions that focused on whether they noticed if their artmaking practices, materials, processes, or working conditions either alleviated (or lessened) or triggered (or worsened) their headaches. Six questions required a brief write-in answer, five featured a 5-point rating scale, and 11 items used an open-ended format.

Results

Statistical Data

There was a high degree of consistency between the two cohorts. This occurred throughout the findings and began with similar response rates of 41.05% and 39.15% for Cohorts 1 and 2, respectively. The gender demographics were also close (86% and 87% female; 14% and 13% male). The age spread was similar in both cohorts with one distinction, Cohort 2 had 46-64 years (51%) as their modal age group, and Cohort 1 had 27-45 years (48%) as their modal age group. Thus, respondents in Cohort 2 were middle-aged whereas Cohort 1 had more young adults (Table 1). Further, the majority of respondents in Cohort 1 worked full-time as artists whereas the majority in Cohort 2 engaged in artmaking as a hobby. In both cohorts, the majority identified a painting medium (oil, acrylic, or watercolor) as their primary medium.

Table 1
Demographics of Sample

	Cohort 1	Cohort 2
Total Surveys Mailed	151	166
Number/Response Rate	62 / 41.05%	65 / 39.15%
Females	87.1%	86.2%
Males	12.9%	13.8%
< 25 Years Old	8.04%	16.92%
27-45	48.38%	26.15%
46-64	35.48%	50.76%
> 65	8.10%	6.15%

Table 2
Migraine Headache Variables

Headache Variable	Cohort 1	Cohort 2
Severity Rating "Severe" (%)	70	42.9
Median Duration (hours)	22.98	18.6
Frequency (days/month)	9.4	5.19
History of Headache (years)	(not asked)	1-60, Median = 16
Mean # School/Work Days Missed (days/month)	2	1
Mean # Leisure Activity Days Missed (days/month)	10	5
Treatment (top 3 mentioned)	(not asked)	Imitrex®, aspirin, ergotamines

Valuable clinical data were obtained from responses to the survey items dealing with migraine history and headache activity. Table 2 presents the migraine headache severity, duration, frequency, history, and life-disruption variables experienced by our participants. In general, the respondents in Cohort 1 reported a higher degree of impact on their lives. The concurrence of headache experience and visual symptomatology was particularly relevant to our study of artist-migraineurs. Respondents were asked if they experienced visual disturbances as part of the headache profile and what form these symptoms took. In Cohort 1, 75.8% of participants acknowledged experiencing visual symptoms, and 86.2% responded "yes" in Cohort 2 (Table 3). For the second survey, we also asked more specifically if these symptoms occurred before or during the headache episode. These data are reflected in Figures 2 and 3.

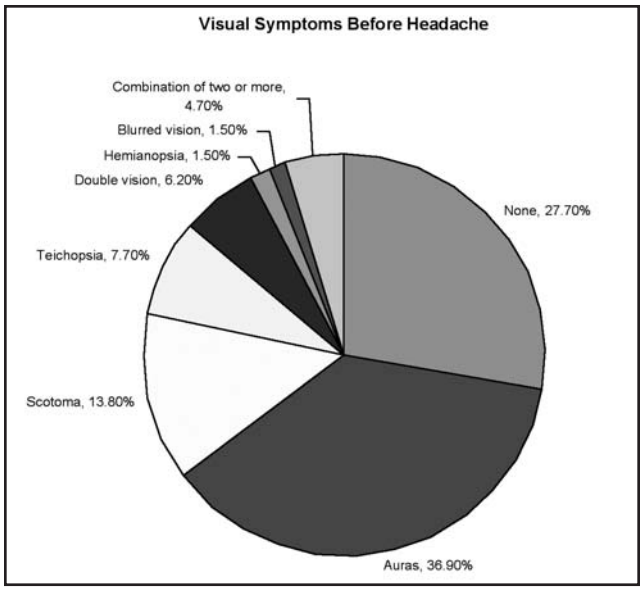

Figure 2
Visual Symptoms Before Migraine

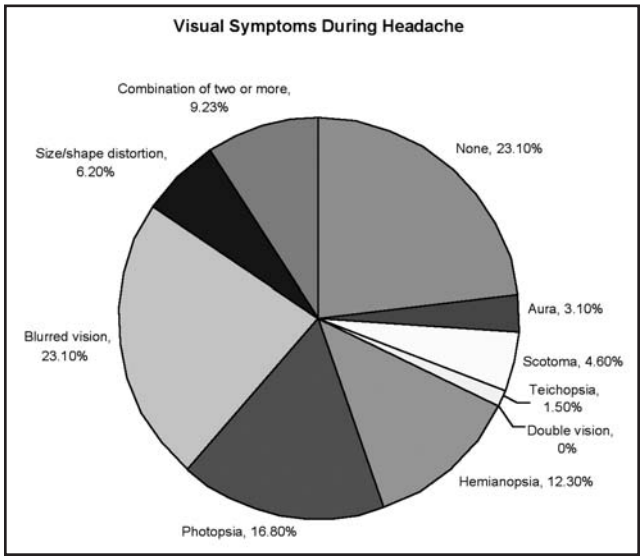

Figure 3
Visual Symptoms During Migraine

When asked if they thought their visual symptoms were ever "spontaneously reflected" in their artwork, 27.4% of Cohort 1 and 36.9% of Cohort 2 responded "yes." We also asked if participants ever "deliberately depicted" their visual symptoms in their art with the result being 24.2% and 43.1% "yes" responses in Cohorts 1 and 2, respectively. Although the "reflect" and "depict" findings were inversely related in the two sample groups (Table 3), this trend did not achieve significance.

Our results indicated that 77.4% of Cohort 1 and 52.3% of Cohort 2 affirmed that they selected alternative artmaking materials or practices and took other steps to manage their pain. In examining data from the two cohorts

Table 3
Visual Symptoms

	Cohort 1	Cohort 2
Experienced	75.8%	86.2%
Reflected in Art	27.4%	36.9%
Depicted in Art	24.2%	43.1%

Table 4
Migraine Headache (MH) Impact on Artmaking

	Cohort 1	Cohort 2
Quality		
Worsen	48.4%	36.9%
Enhanced	14.6%	11.9%
Productivity		
Work w/ MH	17.8%	9.3%
Don't Work w/ MH	59.6%	66.1%
Relationship		
No Relation	51.6%	47.7%
Direct Relation	17.8%	23.1%

regarding the relationship of artmaking to headache, more participants indicated that artmaking was more likely to trigger (or worsen) headaches rather than to alleviate (or lessen) their pain. The magnitude of response on these items was greater for Cohort 1 (38.3% pain alleviated; 53.66% pain triggered) than for Cohort 2 (10% pain alleviated; 19.2% pain triggered). Perhaps the demographic differences reflected in Cohort 1 (generally younger with a higher percentage of professional artists) and Cohort 2 (older and mostly hobbyists) in some way accounts for these differences.

Finally, we compared the participants' responses to the ways in which their artmaking was impacted by their headaches (Table 4). Consistencies in responses were found regarding the decline in art quality, loss of productivity during the migraine experience, and views on the relationship between migraines and artmaking. Although both cohorts made strong endorsements of statements indicating that the quality of their work worsened during migraines and that they avoided or stopped working during headaches, the majority of respondents, in apparent contradiction, also reported seeing no relationship between their artmaking and migraine experience. This finding suggests that whereas migraine headaches cause significant impact on studio effectiveness and productivity, this connection may not always be apparent to sufferers.

Content Analysis

In addition to the purely statistical data, a content analysis was performed on the various narrative items included in the surveys. Among the points dealt with in these items were connections between and alterations in artmaking practices and materials. Careful analysis of the

written responses to these items revealed a fair amount of crossover between this focus and general lifestyle conditions, which highlighted important parallels. The largest single headache trigger reported (23.62%) was odor. Although agreement was strong that avoiding certain odors was important to circumvent migraines, there was little agreement on *which* odors were to blame. Turpentine, mineral spirits, and oil paints were among the art materials most frequently cited.

Other suspect studio materials mentioned were moist watercolors, spray adhesives, rubber cement, gum spirits, varnish, latex, premixed painting medium, vinyl screen-printing inks, molds in clay, sulfur fumes (from firing ceramics), permanent markers, crayons, darkroom chemicals, certain papers, and "toxic" materials. Other nonstudio trigger odors indicated were smoke, pollution, diesel fumes, perfumes, eucalyptus, lavender, laundry soap, body odor, foods, and coffee.

Whereas it can be assumed that many of these people who identified the odor of a specific material as a migraine trigger would stop using that material, only 8.66% of the respondents stated they altered their artmaking practices in an attempt to avoid headaches. The trend for this small group was to discontinue techniques that required volatile solvents. Similarly, 6.3% mentioned color selection (soft, cool, or dark colors) or avoidance (of bright, high contrast, or color in general) was essential for their comfort. Adapting processes (reducing intricacy, slowing down, reducing work hours, and so on) was a strategy adopted by 5.51%, and 4.72% of respondents avoided the pressure of commission deadlines. Several people also identified as problematic what might be characterized as optically dazzling patterns like strong black and white contrast, wavy lines, and flame stitch embroidery.

Light conditions were identified as an important factor in triggering, preventing, and moderating a migraine as well. Altering studio lighting conditions was identified by 22.04% of the participants who specified that avoiding fluorescent lights, working by incandescent or daylight, reducing glare or reflections, and dimming or increasing light was helpful. Another 8.66% stated that moving to a darkened room was essential when a migraine occurred. Other studio conditions mentioned as important were improving ventilation (12.6%), eliminating noise (6.3%), using scented oils or potpourri (4.72%), playing soft music (4.72%), and wearing tinted or magnifying glasses (2.36%). Other preventive lifestyle changes endorsed were yoga, meditation, or biofeedback techniques (3.94%), rest or relaxation (3.94%), increasing physical activity (3.94%), career change or self-employment (3.94%), improving posture (3.15%), and changes in diet (3.15%).

On a related theme, a number of respondents commented on what they saw as a relationship between migraines and creativity. The poignant state of having highly creative ideas but being physically unable to execute them was a circumstance commented on more than once. For example, one respondent stated, "My creativity seems to increase while having a headache, but my ability to put pen to paper must wait for the pain to subside."

Discussion

As observed by other authors (Scharrf et al., 1995b), we found a marked tendency among our participants to try to manage the pain through avoidance. Not working in the studio during the acute phase of a migraine is the most obvious example, but time and again, participants in our study cited avoidance of specific art materials, processes, and studio conditions as a means of circumventing headaches. In many cases, these appear to be practical and healthy adaptations, yet these limitations in the studio are almost certainly part of larger patterns of self-imposed restrictions many migraineurs place on their lives in an attempt to avoid pain. Such limitations on the activities of living, even when self-selected, affect an individual's quality of life. Although the disruptive impact of migraine on artmaking was well documented, many participants also strongly endorsed the more general distracting, relaxing, or focusing aspects of artmaking as positive elements in their lives. This position was summarized by one respondent who wrote, "[Art] is a 'tonic,' not a headache medication."

An important limitation of this study was that the participants were *not* in art therapy treatment with the researchers. In addition, we made no attempts to explore the personal meaning of the images, their psychological significance to the artists, or in any way intervene in their studio practices. For this reason, no direct conclusions can be drawn regarding the use of art therapy as a treatment intervention with migraine patients. We did feel, however, that the circumstances around this contest presented a naturally occurring opportunity for researching broader art therapy questions. Research concerning the role art can play in contributing to or relieving migraines, the relationship between migraines and creativity, and strategies for adapting studio practices within an actual clinical context are worth further investigation.

This study also raises doubts about a basic truism of art therapy. Contained in the popular statement "art heals" is the implication that *all* art is healing to *all* people under *all* conditions. *Our findings strongly suggest otherwise.* The fact that participants reported that art activities were more likely to trigger than alleviate headaches and that they stopped working or the quality of their work declined during their migraine episodes calls into question the notion that artmaking is universally beneficial. At least in the case of some portion of migraine sufferers, certain art materials and processes seem to actually aggravate their symptoms. This finding raises some intriguing possibilities. If, indeed, art can be healing, then deeper investigations are needed into the questions of why, how, when, and with whom this healing occurs. Even though this study was limited to individuals with migraine, we feel it can be safely assumed that this subtle interplay of artmaking and symptomatology merits further study with other clinical populations.

Conclusions

Given the frequency of migraines in the general population, the often dramatic effect this illness can have on

quality of life, and the degree of overlap between migraine and certain psychological conditions, particularly depression, we feel it is essential that mental health professionals have at least a basic familiarity with the features of the migraine syndrome. In all likelihood, even if migraine is not the primary reason for referral, many art therapists have clients whose health and well-being are negatively impacted by this disorder. Studies such as Marlowe (1998) and French et al. (2000) suggest that headache sufferers who employ problem-solving and affect management and who exhibit high levels of self-efficacy tend to experience lower levels of distress when compared with their less empowered peers.

How can art therapy be used as a complementary treatment to address issues such as these to help empower clients experiencing migraine or other chronic pain syndromes? The highly variable and often contradictory responses participants in this study had to various art materials and processes suggest inconclusive findings, yet the contradictions can be viewed as a challenge rather than a problem. As Turk (1990) points out when writing about chronic pain patients, "It no longer seems sufficient simply to identify differences among patients in response to treatment; rather, there is a critical need to make use of these results in designing treatments and evaluating their differential efficacy" (p. 267). How best can we as a field not only document but also decipher complex research data to best serve our clients?

Finally and perhaps most broadly, in light of the reported sensitivity to a wide range of art materials and the suggested tendency for certain art practices or studio conditions to trigger migraine episodes, art therapists must be particularly aware that for some individuals, the modalities we see as health-producing may be harmful. It is well known that components of certain art materials (pigments, binders, solvents, and so on) are linked to serious health concerns among the regular users of these products. These components can be absorbed into the body through the skin as well as by inhalation or ingestion (McCann, 1992). Although it appears that migraineurs are particularly sensitive to numerous material odors, it is essential that we protect our clients and ourselves by being informed and careful consumers of art materials and take steps to establish safe studio practices.

This study raises very real questions about the universal benefits of artmaking; nonetheless, it also demonstrates that individuals will at times persist in their studio work in spite of significant hardship. It must be recognized that any treatment with the power to help also bears the potential to harm if misapplied. Although seemingly counterintuitive from an art therapy perspective, we feel these findings underscore the need for further research concerning the subtle and complex role art can play in healing.

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Calendar of Events

November 15-18, 2006
American Art Therapy Association, Inc. (AATA) 37th Annual Conference
Hilton Riverside, New Orleans, LA
Contact: 1-888-290-0878 or e-mail: info@arttherapy.org

November 14-17, 2007
American Art Therapy Association, Inc. (AATA) 38th Annual Conference
Hyatt Albuquerque, Albuquerque, NM
Contact: 1-888-290-0878 or e-mail: info@arttherapy.org

Appendix A
Migraine/Art Connection Survey

1) Age: _____ years Gender: Female ___ Male ___

2) Which one of the following statements best describes you:
"I am a full-time, professional artist." ___
"I work part-time as an artist." ___
"Art is my main hobby." ___
"I make art occasionally." ___
"I rarely make art." ___

Additional Comments:

3) On average, how many hours per week do you make art? _____
4) What is your medium of choice? _____
_____

5) Please describe your typical migraine headache pain when it is at its worst by placing an X on this scale.
0 ___ 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___ 8 ___ 9 ___ 10 ___
No pain Mild Moderate Severe Very severe

6) When you experience a migraine, how long does it typically last? _____ hours
7) How long have you experienced migraine headaches? _____ years
8) How would you categorize your typical migraine? Common___ Classic___ Mixed___
Menstrual___ Hemiplegic___ Other (please list)

9) Do you experience any of the following sleep disturbances in conjunction with your migraines?
Can't fall asleep___ Wakes me up___ Causes me to sleep too much___
10) On average, how many days per month do you experience migraine? _____ days
11) On average, how many days per month do you miss work or school due to migraine? _____ days
12) On average, how many days per month do you have leisure or daily living activities disrupted by migraine? _____ days Comments:

13) Which medical and/or alternative treatments do you currently find most helpful?

14) Have you ever noticed a tendency for your artmaking activities to alter the frequency, duration, or severity of your migraines in any of the following ways:
Triggering a migraine___ Worsening a migraine___
Comments:
Alleviating a migraine___ Lessening a migraine___
Comments:
15) Have you noted any particular art materials (color, odor…), artmaking processes (physical or mental), or related studio working conditions (lighting, ventilation…) that:
Trigger your migraine___ Worsen your migraine___
Comments:
Alleviate your migraine___ Lessen your migraine___
Comments:
16) In light of these observations, what steps, if any, have you taken to alter your artmaking conditions?
Comments:

Appendix A (continued)
Migraine/Art Connection Survey

17) Which of the following statements best describes the quality of your art in relation to your migraines:
"My art gets noticeably better when I work with a migraine"___
"My art gets somewhat better when I work with a migraine"___
"My art gets somewhat worse when I work with a migraine"___
"My art gets noticeably worse when I work with a migraine"___
"My art appears unaffected by my migraines"___
Comments:

18) Which of the following statements best describes your art production in relation to your migraines:
"I always work on my art with migraines"___
"I usually work on my art with migraines"___
"I sometimes work on my art with migraines"___
"I rarely work on my art with migraines"___
"I never work on my art with migraines"___
Comments:

19) Which one of the following statements best describes the relationship between your artmaking and migraine experiences:
"I see no relationship between my artmaking and migraines"___
"I see a slight relationship between my artmaking and migraines"___
"I see some relationship between my artmaking and migraines"___
"I see a strong relationship between my artmaking and migraines"___
"I see a direct relationship between my artmaking and migraines"___
Comments:

20. Which of the following visual symptoms, if any, do you experience in association with your migraines (indicate with B for symptoms occurring before the pain and D for during):

Auras ___	Hemianopsia (half blindness)___
Scotomata (blind spots)___	Photopsia (flashes of light)___
Teichopsia or "Fortification spectra" (zigzag lines)___	Size/shape distortions___
Double vision___	Blurred vision___
	Other (describe):

21) Have you ever noticed any of these reflected in your art? Yes___ No___
22) If yes, have you ever deliberately depicted any of these in your art?
Comment:
23) Would you be willing to be called with follow-up questions to this survey? Yes___ No___
If yes, please list your name, phone or e-mail and best times at which you may be reached:

Additional comments are welcome; please attach a separate sheet if needed.
Please put the completed survey in the enclosed envelope and return by November 1, 2001.
Thank you for your participation.