

Literature search looking for examples of patient education correlating with improved medication efficacy or improved outcomes

MIGRAINE:

1) Headache. 2010 Apr;50(4):613-25.

Qualities and health of lay trainers with migraine for behavioral attack prevention.

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Abstract

OBJECTIVES: To evaluate the qualities of lay trainers with migraine and to quantify their self-management results.

BACKGROUND: Little is known about the qualities of lay trainers with chronic diseases and the benefits for their own health.

METHODS: Thirteen lay trainers (12 F, 1 M) completed a 3-step program that consisted of self-experience of a behavioral training (BT), providing BT to one fellow patient, and subsequently to a small group at home. Successful mastery of own migraine attacks was required for participation, and lay trainers received intensive guidance. Evaluation of the qualities of trainers took place post-BT by means of a specially constructed questionnaire. Their self-management was measured before self-experience of BT, post-BT, and at 6-month follow-up by a headache diary and questionnaires.

RESULTS: The qualities of the 13 trainers were positively evaluated by 95 trainees, particularly their warmth, expertise, organization, explanation of BT, active control, and advice and guidance. Higher active control of lay trainers during the group sessions was significantly related to improvements on migraine frequency and internal locus of control in their trainees post-BT. Advice and guidance increased the likelihood of less attacks at follow-up and supportive encouragement promoted a higher internal locus of control. However, humor slightly increased the likelihood of more attacks post-BT, while fellowship and individualization negatively influenced internal locus of control. Lay trainers showed significantly more improvement in migraine frequency than their trainees at follow-up, as well as enhanced internal locus of control and quality of life.

CONCLUSIONS: Participation in a stepwise training program can produce capable trainers and may positively influence their own health. Lay trainers may be more motivated to enhance their self-management skills as they have to present the benefits to their trainees.

2) Headache. 2010 Apr;50(4):600-12. Epub 2010 Feb 9.

Migraine education improves quality of life in a primary care setting.

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Abstract

OBJECTIVE: The objective of this study was to evaluate the effectiveness of the Mercy Migraine Management Program (MMMP), an educational program for physicians and patients. The primary outcome was change in headache days from baseline at 3, 6, and 12

months. Secondary outcomes were changes in migraine-related disability and quality of life, worry about headaches, self-efficacy for managing migraines, emergency room (ER) visits for headache, and satisfaction with headache care.

BACKGROUND: Despite progress in the understanding of the pathophysiology of migraine and development of effective therapeutic agents, many practitioners and patients continue to lack the knowledge and skills to effectively manage migraine. Educational efforts have been helpful in improving the quality of care and quality of life for migraine sufferers. However, little work has been performed to evaluate these changes over a longer period of time. Also, there is a paucity of published research evaluating the influence of education about migraine management on cognitive and emotional factors (for example, self-efficacy for managing headaches, worry about headaches).

METHODS: In this open-label, prospective study, 284 individuals with migraine (92% female, mean age = 41.6) participated in the MMMP, an educational and skills-based program. Of the 284 who participated in the program, 228 (80%) provided data about their headache frequency, headache-related disability (as measured by the Headache Impact Test-6 (HIT-6), migraine-specific quality of life (MSQ), worry about headaches, self-efficacy for managing headaches, ER visits for headaches, and satisfaction with care at 4 time points over 12 months (baseline, 3 months, 6 months, 12 months).

RESULTS: Overall, 46% (106) of subjects reported a 50% or greater reduction in headache frequency. Over 12 months, patients reported fewer headaches and improvement on the HIT-6 and MSQ (all $P < .001$). The improvement in headache impact and quality of life was greater among those who had more worry about their headaches at baseline. There were also significant improvements in "worry about headaches," "self-efficacy for managing headaches," and "satisfaction with headache care."

CONCLUSION: The findings demonstrate that patients participating in the MMMP reported improvements in their headache frequency as well as the cognitive and emotional aspects of headache management. This program was especially helpful among those with high amounts of worry about their headaches at the beginning of the program. The findings from this study are impetus for further research that will more clearly evaluate the effects of education and skill development on headache characteristics and the emotional and cognitive factors that influence headache.

3) J Telemed Telecare. 2010;16(1):20-4.

User acceptance of an Internet training aid for migraine self-management.

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Abstract

We have developed an Internet training aid (MyMigraine) for migraine self-management derived from an evidence-based protocol for behavioural attack prevention. Its acceptance was tested in two studies concerning the opinions of new patients ($n = 10$), and the opinions of expert patients acquainted with the protocol ($n = 6$). The questionnaires employed 5-point scales. In study 1, all lessons were rated positively

regarding clarity, instructiveness, importance and easy execution. After training, the patients were positive about user-friendliness and clarity (mean score 3.9), training content (3.5), satisfaction (3.6) and benefits (attack risk detection: 3.7; preventive coping: 3.9). In study 2, the expert patients provided positive ratings for the web application (mean score 4.1), digital support (3.8-4.4) and web adaptation of the protocol (4.1-4.8). The expert patients considered MyMigraine instructive, captivating and fun to work with, but emphasized the necessity of patient-to-patient contact. The training aid was very well accepted by new and experienced patients with chronic migraine.

4) Headache. 2009 May;49(5):687-96.

Rizatriptan 10-mg ODT for early treatment of migraine and impact of migraine education on treatment response.

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Abstract

OBJECTIVE: To examine the efficacy of rizatriptan 10-mg orally disintegrating tablet (ODT) for treating migraines of mild intensity soon after onset, with or without patient-specific migraine education.

BACKGROUND: Studies have shown rizatriptan tablet efficacy in early migraine treatment.

METHODS: In this randomized, placebo-controlled, double-blind, factorial design study, adults with a history of migraine were assigned to rizatriptan 10-mg ODT patient education (personalized summary of early migraine signs and symptoms) or placebo patient education in a 1 : 1 : 1 : 1 ratio. Patients were instructed to treat 1 attack at the earliest time they knew that their headache was a migraine, while pain was mild. During the next 24 hours, patients assessed pain severity, associated symptoms, functional disability, use of rescue medication, and treatment satisfaction. The primary endpoint was pain freedom at 2 hours; a key secondary endpoint was 24-hour sustained pain freedom.

RESULTS: Of 207 patients randomized to treatment, 188 (91%) treated a study migraine. Significantly more patients taking rizatriptan reported pain freedom at 2 hours compared with placebo (66.3% vs 28.1%, $P < .001$). Similarly, significantly more patients taking rizatriptan reported 24-hour sustained pain freedom (52.2% vs 17.7%, $P < .001$). A greater proportion of patients in the rizatriptan + education group reported pain freedom at 2 hours compared with those in the rizatriptan + no education group (71.7% vs 60.9%, $P = .430$). Few adverse events were reported.

CONCLUSION: Rizatriptan 10-mg ODT, when taken early, while headache pain is mild, was superior to placebo at providing pain freedom at 2 hours and 24-hour sustained pain freedom.

5) Holroyd KA, Cordingley GE, Pingel JD, Jerome A, Theofanous AG, Jackson DK, Leard L Headache. 1989 Mar;29(3):148-53. Enhancing the effectiveness of abortive therapy: a controlled evaluation of self-management training..

Research suggests that approximately one half of recurrent headache sufferers fail to adhere properly to drug treatment regimens with as many as two thirds of patients failing to make optimal use of abortive medications such as ergotamine. In spite of these findings there are no controlled studies that have attempted to evaluate methods for improving adherence to drug regimens for the treatment of chronic headache disorders. In an initial effort to address this adherence problem thirty-four recurrent migraine sufferers were randomized to abortive therapy with ergotamine tartrate plus caffeine (standard abortive therapy) or to standard abortive therapy accompanied by a brief educational intervention designed to facilitate the migraine sufferer's effective use of ergotamine. **Patients who received the adjunctive educational intervention attempted to abort a greater percentage of their migraine attacks (70% vs 40%) and showed larger reduction in headache activity** (e.g., 40% vs 26% reduction in month two of treatment). However, patients in both treatment groups used similar amounts of abortive medication when attempting to abort a migraine attack and showed similar reductions in analgesic medication use with abortive therapy. These results suggest that brief educational interventions designed to address the problem of patient adherence may yield significant improvements in standard therapies. **We argue that such educational interventions deserve more attention in the headache treatment literature than they have received to date.**

6) Cady R, Farmer K, Beach ME, Tarrasch J. Nurse-based education: an office-based comparative model for education of migraine patients. *Headache* 2008 Apr;48(4):564-9. Headache Care Center-Health Psychology, Primary Care Network, Springfield, MO 65807, USA.

BACKGROUND: A person with migraine needs to be prepared to make therapeutic decisions on her own. For this reason, patients often need education to understand the nuisances of managing their migraines. In this study an educational CD-ROM/DVD that described the pathophysiology was utilized by nurses in an office-based primary care setting for patient education. Outcomes from this encounter were measured.

OBJECTIVES: (1) Identify educational information that assisted migraine patients feel empowered to more effectively manage migraine; (2) encourage patients to intervene during the mild headache phase of the migraine; (3) measure education related changes in patient satisfaction and confidence regarding management of migraine; (4) measure changes in nurse satisfaction and confidence in educating migraine patients; (5) compare the effectiveness of 3 methods of delivery of nurse-based migraine education.

METHODS: One hundred and eighty migraineurs at 21 primary care practices were divided into 4 groups: group A watched the CD-ROM/DVD in the office with a nurse available to answer questions; group B was given the CD-ROM/DVD by a nurse knowledgeable of the content; group C received the educational CD-ROM/DVD from a nurse without comment; group D received no educational material. The 10 nurses in groups A and B participated in a 45-minute teleconference that reviewed the information on the CD-ROM/DVD. Patients and nurses answered a pre- and post-study migraine questionnaire. Patients filled in a treatment diary online within 24 hours of treating a migraine. Nurses completed a satisfaction questionnaire. **RESULTS:** Of the 17 educational points tested on the pre-test, 75% of patients and nurses already knew about 1/3 of the information. There was significant improvement noted for both patients and

nurses on the post-test in groups A, B, and C but not in group D. The percentage of correct responses by patients and nurses was directly and statistically significantly correlated with the involvement of the nurse in the educational effort. As a result of the education, patients felt more confident in their ability to manage and treat migraine. Likewise, nurses gained increased confidence in teaching patients about migraine. Patients did not intervene with acute therapy during the mild headache phase. Overall, 94% of the nurses were very satisfied or satisfied with the format and information provided. **CONCLUSIONS: All but objective 2 were met for groups A, B, and C compared to control group D. Patients readily accepted nurse-directed education and assimilated information that increased their confidence to manage migraine. This emphasizes the importance of training nurses about materials used to educate patients.**

PMID: 18377379 [PubMed - indexed for MEDLINE]

7) Rothrock JF, Parada VA, Sims C, Key K, Walters NS, Zweifler RM Headache. 2006 May;46(5):726-31. The impact of intensive patient education on clinical outcome in a clinic-based migraine population.

Erratum in:

Headache. 2006 Jul-Aug;46(7):1227.

Comment in:

Nat Clin Pract Neurol. 2006 Oct;2(10):526-7.

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OBJECTIVE: To determine whether the addition of patient education to routine medical management improves the clinical status of migraine patients and reduces their utilization of healthcare resources. **BACKGROUND:** Optimal migraine management typically requires effective patient education. Such education often is difficult to accomplish in the busy clinic setting. **METHODS:** One hundred consecutive patients with migraine presenting to an university-based headache clinic were randomized to receive or not receive a standardized course of didactic instruction regarding migraine biogenesis and management. The course consisted of 3 classes taught by lay migraineurs who themselves previously had undergone intensive training. All patients were evaluated initially and at 1, 3, and 6 months by a neurologist blinded as to the results of randomization. Clinical variables examined included headache frequency/severity, migraine disability assessment (MIDAS) scores, patient compliance, presence versus absence of analgesic use/overuse, and headache-related unscheduled visits or phone calls. Comparisons were made between baseline findings and findings at the 6-month follow-up visit, with the change in mean MIDAS score serving as the primary outcome variable. **RESULTS:** At 6 months the group randomized to receive intensive education exhibited a significantly greater reduction in mean MIDAS score than the group randomized to routine medical management only (24 vs. 14 points; $P < .05$). Those patients also experienced a reduction in mean headache days per month and a greater reduction in functionally incapacitating headache days per month, exhibited less analgesic overuse and need for abortive therapy, were more compliant with prophylactic therapy prescribed, and made fewer headache-related calls to the clinic or unscheduled visits.

CONCLUSION: Intensive education of migraine patients by trained lay instructors

may convey significant benefit to those patients and reduce their utilization of healthcare resources.

8) Weidmann E, Unger J, Blair S, Friesen C, Hart C, Cady R. Clin Ther. 2003 Jan;25(1):235-46. An open-label study to assess changes in efficacy and satisfaction with migraine care when patients have access to multiple sumatriptan succinate formulations. South Austin Medical Clinic, Austin, Texas, USA.

BACKGROUND: Because a patient's migraines often differ in duration, intensity, and accompanying symptoms, as well as the conditions and circumstances at the time of the headache, the mode for treatment also may change. **OBJECTIVE: The goal of this study was to determine whether migraine management is improved by providing 3 formulations of sumatriptan succinate to patients, together with education to assist them in selecting the most appropriate formulation for specific attacks.** **METHODS:** This was an open-label study conducted in 3 family practice settings. Patients were recruited who had at least a 1-year history of migraine meeting International Headache Society criteria and experienced 2 to 6 attacks per month within the previous 3 months. Patients received instructions on oral, intranasal, and subcutaneous (SC) sumatriptan and were provided with all 3 formulations to treat 6 headaches. Migraine features, formulation used, reason for selecting specific formulation, migraine symptom relief, and use of follow-up doses were recorded in diaries. At follow-up, patients completed a questionnaire assessing satisfaction with access to multiple formulations. **RESULTS:** Of the 33 enrolled patients (26 women, 7 men; mean age, 38.5 years [range, 23-54 years]), 25 (75.8%) completed all visits. Of 149 headaches treated, 39 (26.2%) were mild at onset, 70 (47.0%) were moderate, and 40 (26.8%) were severe. Eighty (53.7%) headaches were treated with tablets, 35 (23.5%) with nasal spray, and 34 (22.8%) with SC injection. Primary reasons for selecting specific formulations included "fewer side effects" for tablets, "convenience" for nasal spray, and "quick onset of action" for SC injection. Twenty-one (84.0%) patients reported being either very satisfied or satisfied with their ability to manage their headaches. Physicians reported that 18 of 24 (75.0%) patients had an improved attitude toward managing their headaches. All formulations were well tolerated. Eight (32.0%) patients reported adverse events, the 2 most common being chest pressure and fatigue. **CONCLUSION:** The patients in this study reported greater satisfaction with migraine management when given access to multiple sumatriptan formulations and education regarding their appropriate use.

PMID: 12637123 [PubMed - indexed for MEDLINE]

9) Blumenfeld A, Tischio M. Headache. 2003 May;43(5):431-40. Center of excellence for headache care: group model at Kaiser Permanente. Headache Management Program, Department of Neurology, Kaiser Permanente, San Diego, CA 92120, USA.

OBJECTIVE: To evaluate the effectiveness of a disease management model for primary headache by: (1) assessing improvement in patients' quality of life, (2) decreasing headache-related visits to primary care and emergency departments, and (3) maintaining high levels of patient and physician satisfaction. **BACKGROUND:** Patients with

headache regularly seek health care but, in general, are dissatisfied with the care they receive. Patients with primary headaches utilize resources and cost health plans more than patients with other chronic diseases. Primary care visits are time restricted, prohibiting adequate headache evaluation and management. Practice guidelines are inconsistently followed, and access to headache specialists is limited. This headache management program implemented an alternative means of delivering care to manage large volumes of patients with headache. A multidisciplinary team approach coordinated by a neurologist, utilizing education and a nurse practitioner as the main provider of care, was the central process of the program. **METHODS:** This was a pilot study involving a prospective cohort with defined outcome measures. Inclusion criteria were adult patients with primary headaches. **Patients initially attended an educational session instructed by a neurologist and a nurse practitioner.** The patient was subsequently evaluated by the nurse practitioner who developed and coordinated a comprehensive individual treatment plan. The Migraine-Specific Quality of Life and the Medical Outcomes Study 36-Item Short Form Questionnaires were completed at baseline, at follow-up visits, and 6 months after completion of the program. Subjective patient assessment of improvement in their headaches, chart review for tabulation of headache-related visits, and primary care physician satisfaction surveys were measured. **RESULTS:** Both the Migraine-Specific questionnaire and the Short Form-36 measurements demonstrated a statistically significant improvement at 8 weeks, and this was maintained for 6 months after completing the program. At completion of the program, 92% of patients reported subjective improvement. Patient visits for headaches to primary care and emergency departments showed a significant decrease. High levels of satisfaction for primary care physicians were achieved. **CONCLUSIONS:** A disease management model using a multidisciplinary team improved individualized patient care. **This model increased patient/provider rapport and communication through an educational class. It empowered the patient to take control of their health care by utilizing shared decision making. Patient satisfaction improved and overall health care utilization was reduced.**

PMID: 12752747 [PubMed - indexed for MEDLINE]

10) Manzoni GC, Torelli P. *Neurol Sci.* 2007 May;28 Suppl 2:S130-3. The patient-physician relationship in the approach to therapeutic management. Headache Centre, Department of Neuroscience, University of Parma, Via Gramsci 14, I-43100 Parma, Italy. giancamillo.manzoni@unipr.it

Recent epidemiological investigations have demonstrated that migraine, and more generally primary headaches, are underdiagnosed and poorly treated. To tackle and resolve this problem, in addition to identifying efficient screening means and reliable disability measurement tools, it is crucial to improve communication between physicians and patients. In particular, physicians should be willing and have time to establish a relationship of active and mutual cooperation with their patients and should do so through a number of inescapable steps: listening to patients, understanding their needs, identifying with their condition, giving them explanations and information, reassuring their concerns, advising them on what should be done, making sure that they have correctly understood what they have been told, finding out whether they want to be involved in decision-making and choosing a treatment. Patients must be in a position to

freely express their opinions, with no hurry and without fear. **Indeed, the time spent with patients, as Graham pointed out as early as 40 years ago, is the most important ingredient of migraine therapy.** Proper measures should be taken to overcome the two major obstacles that stand in the way of a good patient-physician relationship: a physician's lack of adequate skills and the organisational absurdities of the health system.

Graham JR (1961) Management of migraine. N Engl J Med 265:1054–1057 First example I can find that notes patient/physician discussion about migraine yields better outcomes.

11) Patient education to enhance compliance with headache treatment Rains JC, Penzien DB, Lipchik GL. Headache. 2006 Oct;46(9):1395-403. Behavioral facilitation of medical treatment for headache--part II: Theoretical models and behavioral strategies for improving adherence.

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This is the second of 2 articles addressing the problem of noncompliance in medical practice and, more specifically, compliance with headache treatment. The companion paper describes the problem of noncompliance in medical practice and reviews literature addressing compliance in headache care (Behavioral Facilitation of Medical Treatment for Headache--Part I: Review of Headache Treatment Compliance). The present paper first summarizes relevant health behavior theory to help account for the myriad biopsychosocial determinants of adherence, as well as patient's shifting responsiveness or "readiness for change" over time. Appreciation of health behavior models may assist in optimally tailoring interventions to patient needs through instructional, motivational, and behavioral treatment strategies. A wide range of specific cognitive and behavioral compliance-enhancing interventions are described, which may facilitate treatment adherence among headache patients. Strategies address patient education, patient/provider interaction, dosing regimens, psychiatric comorbidities, self-efficacy enhancement, and other behavioral interventions.

12) Lenaerts ME. Marc E. Lenaerts, MD Curr Treat Options Neurol. 2008 Jan;10(1):30-5. Update on the therapy of the trigeminal autonomic cephalalgias. Headache Section, University of Oklahoma Health Sciences Center, 711 Stanton L. Young Boulevard, #215, Oklahoma City, OK 73104, USA. marc-lenaerts@ouhsc.edu.

The treatment of trigeminal autonomic cephalalgias requires very careful attention to clinical aspects. It is important to spend enough time assessing the patient to arrive at an accurate diagnosis. Identifying trigger factors (eg, alcohol), when applicable, is part of the therapy, as behavior modifications may be necessary. Cluster headache treatment should never be delayed; patients should be able to visit the clinic within 48 hours to expedite medication initiation. Abortive therapy typically is best achieved with nasal oxygen, sumatriptan injections, or both. Typically, a steroid taper is begun and will be continued for a few days. A prophylactic agent such as verapamil or topiramate also is initiated immediately and will be taken for a period slightly beyond the expected duration of the last cluster period before an attempt is made to taper it off. For chronic cluster headache, lithium carbonate is recommended after a few weeks if these other treatments

have failed. If more than three regimens of medical therapy fail, patients should be considered for neurostimulation procedures. Paroxysmal hemicrania most often responds to indomethacin. Failure may be due to a dosage that is too low. Gastric protection should always be given, because this medication has a high rate of gastric complications. Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) remain very difficult to treat. Lamotrigine is the first recommendation.

Overall, one of the most crucial aspects of the management of patients with these disabling headache syndromes is patient education regarding what their disorder is and the reasoning behind the therapeutic options offered.

13) Skomo ML, Desselle SP, Berdine HJ, O'Neil CK. J Am Pharm Assoc (2003). 2008 Jan-Feb;48(1):32-7; Impact of pharmacist interventions on seeking of medical care by migraineurs.

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OBJECTIVES: To determine the impact of a pharmacist-led educational intervention on the seeking of medical care from physicians by patients with migraine and identify barriers to migraine care and lapsing from this care. **DESIGN:** Prospective, multigroup, quasiexperimental. **SETTING:** Duquesne University in Pittsburgh, November 2004 through June 2005. **PARTICIPANTS:** 100 university employees and students.

Information from the initial interview was used to divide the patients into four groups: (1) not a migraineur, (2) migraineur who is currently consulting a physician for care of headaches (current consulter), (3) migraineur who has not consulted with a physician for more than 12 months concerning headaches (lapsed consulter), and (4) migraineur who has never consulted a physician regarding headache (never consulter).

INTERVENTIONS: Verbal counseling by a pharmacist and written education on migraine, as well as self-administered questionnaires. **MAIN OUTCOME MEASURES:** Participants' physician consultation rates, perceived barriers to physician consultation, and perceived reasons for lapsing from care. **RESULTS:** Of the 100 headache sufferers who participated in the study, 82 met International Headache Society criteria for migraine, of whom 22 were never consulters and 20 were lapsed consulters. Cross-tabulation and chi-square statistics did not reveal any statistically significant differences between the never-consulter control and intervention groups for 3-month physician consultation rates or intention to seek consultation during the next 6 months; however, 64% of never consulters contacted their physician or expressed intentions to do so after the intervention. The top three barriers to physician consultation identified were misidentifying migraines as headaches (50%), satisfaction with current treatment (45%), and inconvenience of physician consultation (41%). The top three reasons for lapsing from care were reduced frequency of headache (40%), self-identification of effective therapy (40%), and physician-directed effective therapy (30%). Cross-tabulation and chi-square statistics revealed one significant difference among student/employee groups in their identification of barriers. **CONCLUSION:** This study identified barriers associated with migraineur physician consultation behavior and reasons for lapses in care. The role of pharmacists in encouraging migraineur physician consultation should be further examined.

14) Furnham A. Soc Sci Med. 1989;29(1):61-7. Overcoming 'psychosomatic' illness: lay attributions of cure for five possible psychosomatic illnesses.
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This semi-replicative study was concerned with lay people's beliefs about the importance of 24 different contributors towards overcoming five relatively common illnesses: hypertension, peptic ulcers, asthma, dermatitis and migraine. These illnesses have frequently been regarded as psychosomatic although there is considerable debate as to whether this is so. One hundred subjects completed a 5-page questionnaire indicating how effective 24 factors were to overcoming the five specified illnesses. Factor analysis revealed almost identical clusters for each problem. These were labelled inner control, social consequences, fate, understanding and receiving help. Items clustering on the first and latter two factors were thought of as generally important and those on fate and, to a lesser extent, understanding, less important, although the perceived relevance of the second and third factors differed significantly between problems. Regression analysis showed that various individual difference factors, age and sex in particular, were related to perceived relevance of the different contributors. The results were discussed in terms of subjects' beliefs concerning the value of self reliance as opposed to professional help, and the importance of understanding lay beliefs about the efficacy of different cures. Comparisons are made with four other studies using basically the same methodology.