COLUMN

Scanning the Global Literature

In each issue of Global Advances in Health and Medicine, *we publish summaries of and commentaries on select articles from journals our editors and other contributors to the journal are reading.*

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MASSAGE, MUSIC, AND ART THERAPY IN HOSPICE: RESULTS OF A NATIONAL SURVEY

Despite the widespread use of integrative healthcare in the United States, relatively little is known about its use within hospice care. The authors of this national cross-sectional study surveyed a random sample of 706 hospice facilities to determine the extent to which art, music, and massage therapists are included as members of interdisciplinary hospice teams and how staffing of these practitioners varies by hospice characteristics. With an 84% response rate, results indicated that only 29% of hospices employ such therapists for an average full-time equivalent (FTE) of 1.6, with licensed massage therapists (21% of respondent facilities) making up the majority. Fifteen percent of facilities employed music therapists, and only 6% employed art therapists. Hospices employing these practitioners were more likely to be larger, nonprofit organizations and located in the Mountain Pacific, North Central, and New England/Mid-Atlantic regions of the United States compared to the South Central and South Atlantic regions. It is possible that these numbers overestimate employment levels due to the relatively high rate of nonresponse by sampled for-profit hospices.

Commentary by Martha Brown Menard, PhD, LMT

This survey provides important new information about an under-researched area. We hope that future studies will include a more comprehensive list of integrative disciplines and licensed practitioners. The authors speculate that cost may be the most likely reason for the low numbers of massage, music, and art therapists employed, based on current per diem Medicare reimbursement policies. Given patient demand for therapies such as massage and an evidence base that includes cost-effectiveness data, it is surprising that so few hospices are employing licensed therapists who are expert in nonpharmacological approaches for symptom management at end of life. The authors suggest asking these professionals to volunteer their services as one way to increase patient access. Such a solution is discriminatory and hardly realistic. It will be interesting to see how section 2706, the nondiscrimination provision of the Affordable Care Act, may affect future reimbursement and coverage policies by Centers for Medicare and Medicaid Services and private insurers.

REFERENCE

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ALLERGY PREVENTED BY ALLERGEN EXPOSURE—A RANDOMIZED CONTROLLED TRIAL ON PEANUT ALLERGY

The prevalence of allergies in Western countries is skyrocketing. Peanut allergies affect approximately 1.4% to 3% of all children. They are the leading cause of anaphylaxis and death due to food allergy. Not long ago, it was recommended that at-risk infants as well as pregnant and breastfeeding mothers avoid allergenic food. However, such early avoidance has failed to prevent the occurrence of allergies.

A large British randomized controlled trial investigated the influence of peanut exposure in infants at high risk on the occurrence of peanut allergy. Six hundred forty infants between the ages of 4 and 11 months with severe eczema, egg allergy, or both were randomly assigned to regularly consume or to avoid peanuts until the age of 5 years. They were further stratified on the basis of preexisting sensitivity (mild) to peanuts, determined with a skin-prick test. The primary outcome was the proportion of participants with peanut allergy at 5 years of age.

Of the children with no prior peanut sensitivity who avoided peanut consumption, 13.7% developed peanut allergy, while only 1.9% of the children who regularly ate peanuts developed such an allergy ($P<.001$). Within the group of children with peanut sensitivity, 35.3% of the children avoiding peanut consumption developed peanut allergy, compared to 10.6% of children in the peanut consumption group ($P=.004$). Correspondingly, wheal sizes after peanut-specific skin-prick test increased significantly in the avoidance group. Both groups showed an increase in peanut-specific immunoglobulin (Ig)E titers, with the highest titers in the avoidance group, whereas the consumption group showed a higher increase in peanut-specific IgG and IgG4 antibody titers. This led to an increase of the peanut-specific IgG4 to IgE ratio only in the consumption group—mirroring the immunological changes seen in successful allergen immunotherapy. No significant difference between the two groups in the occurrence of serious adverse events could be found.

Commentary by Gunver Kienle, Dr Med

Allergies and atopic and autoimmune diseases have developed epidemic dimensions in Europe and North America. This well-designed landmark trial shows that early introduction of peanuts into the diet of high-risk infants can successfully prevent the development

of peanut allergy. These results are similar to the widely investigated hygiene hypothesis: ie, exposure to infectious agents, microorganisms, parasites, farming environments, and unprocessed farm milk consumption in early infancy can prevent the development of atopic diseases and support the development of a healthy and competent immune system. This is in contrast to our long-standing belief in and recommendation of cleanliness for the prevention of infections and avoidance of infectious agents and allergens. It also points to the necessity of a science-based comprehensive systems approach to understand the human organism and health.

REFERENCE

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WELL-LOVED MUSIC ROBUSTLY RELIEVES PAIN: A RANDOMIZED, CONTROLLED TRIAL

It has been fairly well established that music has pain-relieving effects, though its mechanisms have remained unclear. Hsieh et al sought to verify previously studied analgesic components and further elucidate the underpinnings of music analgesia. Using a well-characterized conditioning-enhanced placebo model, the team examined whether boosting expectations would enhance or interfere with analgesia from strongly preferred music. A 2-session experiment was performed with 48 healthy, pain experiment–naïve participants. In a first cohort, 36 were randomized into 3 treatment groups, including music enhanced with positive expectancy, nonmusical sound enhanced with positive expectancy, and silence with no expectancy enhancement. A separate replication cohort of 12 participants received only expectancy-enhanced music following the main experiment to verify the results of expectancy-manipulation on music. Primary outcome measures included the change in subjective pain ratings to calibrated experimental noxious heat stimuli, as well as changes in treatment expectations. Without conditioning, expectations were strongly in favor of music compared to nonmusical sound. While measured expectations were enhanced by conditioning, this failed to affect either music or sound analgesia significantly. Strongly preferred music on its own was as pain relieving as conditioning-enhanced strongly preferred music and more analgesic than enhanced sound. These results demonstrate the pain-relieving power of personal music.

Commentary by Mary Jo Kreitzer, PhD, RN, FAAN

Music is offered in clinical settings for patient enjoyment and as a therapeutic approach to reduce anxiety, stress, and pain. Previous studies have documented the importance of patient preference. This study also tested the impact of patient-chosen music, but in addition, the investigators also tested the role of expectations. While the sample size was modest, the finding that music analgesia was not improved by the expectancy-mediated conditioning procedure is quite interesting and significant. From a clinical perspective, encouraging patients to select music that can be used during hospitalizations or procedures or to better manage pain is a low-cost, low-risk and widely accessible intervention. In this study, patients were guided to choose music that they love, are familiar with, and could listen to repeatedly and that does not evoke specific memories. These guidelines could be easily implemented in clinical settings. I was intrigued by the author's conclusion that through studies such as this, we can learn how to create whole new combinations of environments and contextual elements that lead to the alleviation of suffering.

REFERENCE

Hsieh C, Kong J, Kirsch I, et al. Well-loved music robustly relieves pain: a randomized, controlled trial. PLoS One. 2014;9(9):e107390.

USE OF COMPLEMENTARY APPROACHES BY US ADULTS 2002-2012

This report from the US Centers for Disease Control and Prevention analyzes trends from 2002 to 2012 in the use of complementary health approaches among US adults. Every 5 years starting in 2002, the US National Center for Health Statistics in conjunction with the National Center for Complementary and Integrative Health (NCCIH, formerly National Center for Complementary and Alternative Medicine) includes a supplement on complementary approaches to health in the annual National Health Interview Survey (NHIS). At each time point (2002, 2007, 2012), approximately 25 000 to 30 000 non-institutionalized adults are interviewed. Complex adjusted analyses result in nationally representative data in terms of age, sex, race/ethnicity, region, and other sociodemographic factors. Use of any complementary approach in the previous year changed little during the 10-year period (2002, 32.3%; 2007, 35.5%; 2012 33.2%). However, use in 2012 continued to differ by race/ethnicity (non-Hispanic blacks, 19.3%; Hispanics, 22%; non-Hispanic whites, 37.9%); education (less than high school, 15.6% vs college graduate, 42.6%); and income (poor, 20.6% vs non-poor, 38.4%). In 2012, the most common complementary approaches used were dietary supplements (17.7%), deep breathing alone or as part of mind-body practices (10.9%), yoga (9.5%), chiropractic/osteopathic manipulation (8.4%), and meditation alone or as part of other practices (8.0%). Of all approaches, yoga showed the greatest increase (almost doubling from 5.1% in 2002). Increases in yoga use among Hispanics and non-Hispanic blacks were also seen. Among supplements, most commonly used in 2012 were fish oil, glucosamine, probiotics, melatonin, and CoQ10. Use of glucosamine, echinacea, ginkgo, and saw palmetto decreased from previous years.

Commentary by Robert Saper, MD, MPH

Use of complementary approaches by adults in the United States appears to be stable around one-third of the population. Changes in dietary supplement use may reflect emerging evidence about which supplements hold more promise for effectiveness (eg, fish oil and probiotics) and which are less promising (eg, echinacea, saw palmetto). Substantial socioeconomic disparities in complementary therapy use persist, perhaps with the exception of yoga. If specific complementary and alternative medicine therapies are found to be evidence-based with the potential to be helpful to patients, then reasons for disparities in use need to be studied so that potential solutions to reduce them can be attempted.

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GENDER, EXERCISE INTENSITY, AND MORTALITY

While the general benefits of exercise and physical activity for health and lifespan are well established, there is less certainty about the relative benefits of exercise regimens that vary in metabolic intensity and how generalizable specific exercise prescriptions are across gender. The goal of this study, led by researchers based at Brigham and Women's Hospital's Division of Preventive Medicine, Boston, Massachusetts, was to examine whether the proportion of moderate- to vigorous-intensity physical activity affects mortality rate when physical activity volume (total energy expenditure) is controlled for. The study followed approximately 8000 men (Harvard Alumni Health Study) and 40 000 women (Women's Health Study) for an average of 17.3 years, with repeated validated measures of physical activity and all-cause mortality. Not surprisingly, participants who met or exceeded an equivalent of the federal guidelines recommendation of at least 150 minutes of moderate-intensity activity, 75 minutes of vigorous-intensity activity, or a combination of the two each week that expended similar energy experienced significantly lower all-cause mortality rates (men, 19%-36% reduction; women, 26%-55% reduction). The impact of different combinations of moderate- and vigorous-intensity activity on all-cause mortality, however, was gender dependent. For men but not for women, expending a greater proportion of energy during vigorous-intensity activity (while accounting for total energy expenditure) led to a modest but statistically significant additional benefit to all-cause mortality.

Commentary by Peter Wayne, PhD

This study contributes to our understanding of the health benefits of exercise in multiple ways. First, it confirms current guidelines that 150 minutes of exercise, including low-intensity activities (eg, walking, house chores), has marked health benefits for all adults. Second, it illustrates the challenge of applying concepts widely used in pharmacological studies, in this case "dosage," to complex multidimensional therapies like exercise. Simply using time as a proxy for exercise "dosage" may mask insight into important therapeutic processes. Future epidemiological and experimental studies should continue to explore other nuances of exercise's health benefits, including aerobic intensity vs mobility or strength training; diurnal distribution of exercises training (eg, multiple short training sessions vs fewer longer sessions); and of relevance to mind-body exercise, the potential additive or synergistic therapeutic contributions of cognitive training (eg, focused attention, imagery, mindsets) integrated with physical regimens. Finally, the finding that expending a greater proportion of energy during vigorous-intensity activity only impacted men and not women highlights the need to explicitly consider gender in all health research.

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