

RESEARCH AT A GLANCE



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Research at a Glance

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PREFACE

Introduction

The library of the Central Council for Research in Homoeopathy has been circulating "Research at a Glance". The main objective is to disseminate precise information/citation about scientific articles published in various journals/magazine other than the journals subscribed by this Council.

Scope

This volume covers articles on Homeopathy, Ayurveda, Unani, Yoga.

Arrangement of Entries

The articles are indexed under the name of the authors, arranged in alphabetical order. The entries have been made in the following order:

Author
Title
Name of Journal
year of publication; Volume (issue no.): pagination
Abstract

Acknowledgement

We are grateful to Dr. R.K. Manchanda, Director General, CCRH for his encouragement and valuable suggestions from time to time. We sincerely acknowledge the cooperation of Mrs. Nisha Adhikari, DEO in compiling this bulletin.

(Meenakshi Bhatia)
Librarian

HOMOEOPATHY

Braillon A, Taiebi F. Prescription in oncology: Homeopathy or psychotherapies and nicotine substitutes? Bull Cancer. 2018 Jun 20. pii: S0007-4551(18)30180-2. doi: 10.1016/j.bulcan.2018.05.013.

Dyer C. Homeopathy: challenge to prescription ban is rejected by High Court. BMJ. 2018 Jun 6;361:k2513. doi: 10.1136/bmj.k2513.

Hock N, Juckel G. Homeopathy for psychiatric patients-for and against. Nervenarzt. 2018 Jun 1. doi: 10.1007/s00115-018-0540-2

Abstract:

The application of homeopathic treatment quickly becomes a matter of ideological confrontation; however, homeopathy is steadily gaining in sympathy in the population. Although the possible effectiveness and the modes of action are currently not scientifically elucidated and the study situation regarding homeopathic treatment in psychiatry is still manageable, there is a whole series of positive evidence for the effects of homeopathic remedies for mental disorders, such as depression, anxiety disorders and addiction. The most important studies are presented and the most important arguments are weighed up with respect to the pros and cons. It is clear that homeopathic remedies can only be used as an add-on and not alone. These remedies belong in the hands of physicians experienced in homeopathic and psychiatric psychopharmacology. It would be advisable to at least try out homeopathy for the well-being of the patient not only in the case of very mild disorders but also in severe chronic cases, since due to the generally good tolerability, no avoidable disadvantage should result.

Kwakye GF, Jiménez J, Jiménez JA et al. Atropa belladonna neurotoxicity: Implications to neurological disorders. Food Chem Toxicol. 2018 Jun;116(Pt B):346-353.

Abstract:

Atropa belladonna, commonly known as belladonna or deadly nightshade, ranks among one of the most poisonous plants in Europe and other parts of the world. The plant contains tropane alkaloids including atropine, scopolamine, and hyoscyamine, which are used as anticholinergics in Food and Drug Administration (FDA) approved drugs and homeopathic remedies. These alkaloids can be very toxic at high dose. The FDA has recently reported that Hyland's baby teething tablets contain inconsistent amounts of *Atropa belladonna* that may have adverse effects on the nervous system and cause death in children, thus recalled the product in 2017. A greater understanding of the neurotoxicity of *Atropa belladonna* and its modification of genetic polymorphisms in the nervous system is critical in order to develop better treatment strategies, therapies, regulations, education of at-risk populations, and a more cohesive paradigm for future research. This review offers an integrated view of the homeopathy and neurotoxicity of *Atropa belladonna* in children, adults, and animal models as well as its implications to neurological disorders. Particular attention is dedicated to the pharmac/toxicodynamics, pharmac/toxicokinetics, pathophysiology, epidemiological cases, and animal studies associated with the effects of *Atropa belladonna* on the nervous system. Additionally, we discuss the influence of

active tropane alkaloids in *Atropa belladonna* and other similar plants on FDA-approved therapeutic drugs for treatment of neurological disorders.

Samuels N, Freed Y, Weitzen R et al. Feasibility of Homeopathic Treatment for Symptom Reduction in an Integrative Oncology Service. Integr Cancer Ther. 2018 Jun;17(2):486-492.

Abstract:

Background: Homeopathy has the potential to reduce symptoms related to cancer treatment. The present study examined the feasibility of a homeopathic consultation and treatment program, provided as part of an integrative oncology service.

Methods: The electronic medical files of patients undergoing a homeopathic consultation in an integrative oncology service clinic were examined retrospectively. Adherence to the homeopathic treatment regimen and perceived response to the treatment were evaluated.

Results: The files of 124 patient (34 males, 90 females) were examined, of which two-thirds reported acquiring and self-administering the homeopathic remedy as prescribed, and nearly three-quarters reporting a beneficial effect. Adherence to the homeopathic treatment regimen was greatest among patients attending a second visit, as opposed to having only telephone/e-mail follow-up ($P < .005$). An association was found between a perceived beneficial effect of treatment with attending a follow-up visit ($P = .04$), female gender ($P = .02$), younger age ($P = .048$), diagnosis of breast cancer ($P = .014$), and current radiation treatment (vs chemotherapy; $P = .003$). Patients reporting chemotherapy-induced peripheral neuropathy were also more likely to report a beneficial effect ($P = .004$), as were female patients reporting hot flashes ($P = .005$) and those referred by an oncologist ($P = .046$). No adverse effects were attributed to the homeopathic treatment.

Conclusions: Homeopathy can be successfully incorporated within a supportive care integrative oncology service. In addition to demographic and cancer-related characteristics, as well as symptoms, patients attending a second visit (vs only telephone/e-mail follow-up) were more likely to adhere to and perceive a beneficial effect from the homeopathic regimen.

AYURVEDA

Agarwal V. Reconceptualizing Pain through Patient-Centered Care in the Complementary and Alternative Medicine Therapeutic Relationship. J Adv Nurs. 2018 Jun 5. doi: 10.1111/jan.13734.

Abstract:

Aims: The study aim was to understand the patient description of the therapeutic relationship with their CAM provider in the context of pain self-management.

Background: Because pain is a subjective state, its assessment depends on patient perception of and response to pain. For nurses to provide empathetic and compassionate care, there is a need to explicate patient perceptions of the therapeutic relationship to (re)conceptualize models of patient-centered care.

Design: Inductive qualitative content analysis of patient interviews was conducted to identify how patients described therapeutic relationship themes and understand self-management of pain.

Methods: Participants were individuals working with a CAM practitioner and solicited through purposive and snowball sampling in collaboration with the practitioners from the mid-Atlantic region of the United States in 2016 (N=13). Verbatim transcriptions of audio-recorded semi-structured in-depth interviews (430 single-spaced pages approximately) were content analyzed.

Findings: Patients described the therapeutic relationship with the provider as a (a) giver, who was "in-tune" with their sense of self to support self-affirmation through empathetic listening and (b) guide, who connected the mind and body through their practice to support self-reflective learning.

Conclusion: This description of the CAM therapeutic relationship advances understandings of readjustment of patient relationship with pain through the provider's empathetic listening and connecting the mind and the body to support patient self-affirmation of pain experiences and self-reflective learning. The findings illuminate how a feminist standpoint contributes to understandings of the therapeutic relationship that centers patient subjectivity and co-construction of meaning-making processes to support self-management of pain. This article is protected by copyright. All rights reserved.

Ahmad Hidayat AF, Chan CK, Mohamad J et al. Dioscorea bulbifera induced apoptosis through inhibition of ERK 1/2 and activation of JNK signaling pathways in HCT116 human colorectal carcinoma cells. Biomed Pharmacother. 2018 Aug;104:806-816.

Abstract:

Dioscorea bulbifera, also known as air potato, has been cultivated as food crop mainly in tropical countries in Asia and Australia. The tubers are edible and have often been used in Traditional Chinese Medicine (TCM) and Ayurvedic medicine to treat cancer,

diabetes, thyroid disease, and inflammation. This study aimed to investigate the effects of *D. bulbifera* on HCT116 human colorectal carcinoma cells and to unravel the plausible mechanisms underlying its apoptotic effects. The ethanol crude and fractions (hexane, ethyl acetate and water) of *D. bulbifera* were subjected to cell viability MTT assay against various cancer cell lines. The lowest IC₅₀ of the extract and fractions on selected cancer cells were selected for further apoptosis assay and western blot analysis. HCT116 cancer cells were treated with *D. bulbifera* and stained with Annexin/PI or Hoechst 33342/PI for preliminary confirmation of apoptosis. The dissipation of mitochondria membrane potential (MMP) was determined by flow cytometry. The protein expressions of apoptosis-related proteins such as Bcl-2 family, caspases, Fas, PARP, ERK1/2 and JNK were detected by western blot analysis. Moreover, the HCT116 cells were treated with UO126 and SP600125 inhibitors to verify the involvement of ERK1/2 and JNK protein expressions in inducing apoptotic cell death. Based on the result, *D. bulbifera* ethyl acetate fraction (DBEAF) exhibited the most compelling cytotoxicity on HCT116 cells with an IC₅₀ of $37.91 \pm 1.30 \mu\text{g/mL}$. The induction of apoptosis was confirmed by phosphatidylserine externalization and chromatin condensation. Depolarization of MMP further conferred the induction of apoptosis was through the regulation of Bcl-2 family proteins. Activation of caspase cascades (caspase-3, -9, -8 and -10) was elicited followed by the observation of cleaved PARP accumulation in DBEAF-treated cells. Furthermore, death receptor, Fas was activated upon exposure to DBEAF. Collective apoptotic evidences suggested the involvement of intrinsic and extrinsic pathways by DBEAF in HCT116 cells. Interestingly, the attenuation of ERK1/2 phosphorylation accompanied by the activation of JNK was detected in DBEAF-treated cells. In conclusion, the findings revealed that DBEAF induced apoptosis through intrinsic and extrinsic pathways involving ERK1/2 and JNK.

Bhatt UP, Sati SC, Bahuguna RP et al. Two antidiabetic constituents from *Roylea cinerea* (D.Don) Baill. Nat Prod Res. 2018 Jun;32(11):1281-1286.

Abstract:

Two antidiabetic compounds named 4-methoxybenzo[b]azet-2(1H)-one (1) and 3 β -hydroxy-35-(cyclohexyl-5'-propan-7'-one)-33-ethyl-34-methyl-bacteriohop-16-ene (2) together with stigmasterol and β -sitosterol were isolated from the aerial part of *Roylea cinerea* (D.Don) Baill. The structures of these compounds were elucidated by advanced spectroscopic methods, including two-dimensional NMR and MS techniques. These compounds were evaluated for their antidiabetic efficacy using in vitro and in vivo methods. Both compounds (1 and 2) showed a significant decline in blood glucose level of alloxan-induced diabetic rats at 10 mg/kg, p.o. when compared with glibenclamide at a similar dose. The in vitro studies revealed that compound 1 reduced α -amylase and α -glucosidase by 83.0 and 78.5%, respectively, whereas compound 2 reduced the same by 58.2 and 58.4%, respectively, at 100 μM . The present study supports the role of *R. cinerea* in Ayurvedic medicine for diabetes.

Damodaran T, Tan BWL, Liao P et al. *Clitoria ternatea* L. root extract ameliorated the cognitive and hippocampal long-term potentiation deficits induced by

chronic cerebral hypoperfusion in the rat. J Ethnopharmacol. 2018 Jun 16. pii: S0378-8741(17)32886-6.

Abstract:

Ethnopharmacological Relevance: Clitoria ternatea L. (CT), commonly known as Butterfly pea, is used in Indian Ayurvedic medicine to promote brain function and treat mental disorders. Root of CT has been proven to enhance memory, but its role in an animal model of chronic cerebral hypoperfusion (CCH), which has been considered as a major cause of brain disorders, has yet to be explored.

Aim of the Study: To assess the motor and cognitive effects of acute oral administration of CT root methanolic extract and hippocampal long-term plasticity in the CA1 region of the CCH rat model.

Materials and methods: Male Sprague Dawley rats (200-300g) were subjected to permanent bilateral occlusion of common carotid arteries (PBOCCA) or sham operation. Then, these rats were given oral administration of CT root extract at doses of 100, 200 or 300mg/kg on day 28 post-surgery and tested using behavioural tests (open-field test, passive avoidance task, and Morris water maze) and electrophysiological recordings (under urethane anaesthesia).

Results: Treatment with CT root extract at the doses of 200 and 300mg/kg resulted in a significant enhancement in memory performance in CCH rats induced by PBOCCA. Furthermore, CCH resulted in inhibition of long-term potentiation (LTP) formation in the hippocampus, and CT root extract rescued the LTP impairment. The CT root extract was confirmed to improve the glutamate-induced calcium increase via calcium imaging using primary cultured rat neurons. No significance difference was found in the CaMKII expression. These results demonstrated that CT root extract ameliorates synaptic function, which may contribute to its improving effect on cognitive behaviour.

Conclusions: Our findings demonstrated an improving effect of CT root extract on memory in the CCH rat model suggesting that CT root extract could be a potential therapeutic strategy to prevent the progression of cognitive deterioration in vascular dementia (VaD) and Alzheimer's disease (AD) patients.

Gupta RA, Motiwala MN, Mahajan UN et al. Protective effect of Sesbania grandiflora on acetic acid induced ulcerative colitis in mice by inhibition of TNF- α and IL-6. J Ethnopharmacol. 2018 Jun 12;219:222-232.

Abstract:

Ethnopharmacological Relevance: The plant Sesbania grandiflora (Linn) belonging to the family Fabaceae is commonly known as sesbania, agathi, and katurai. The plant is accredited for alleviating a spectrum of ailments including inflammation, colitis, diarrhea, dysentery, leprosy, gout, rheumatism, jaundice, bronchitis, convulsion and anxiety. It is also used as antitumour, anthelmintic, and laxatives in Ayurveda and Siddha system of Indian traditional medicine.

Aim: To reveal protective effect of *Sesbania grandiflora* in acetic acid induced ulcerative colitis in mice.

Materials And Method: Polyphenol, flavonoid and flavanone contents of different extracts of *S. grandiflora* leaves were quantified and correlated with their antioxidant capacity in-vitro (DPPH assay) for identification of potential fraction. In further studies hydroalcoholic extract (HASG, 100 and 200 mg/kg) was evaluated for protective effect towards acetic acid induced ulcerative colitis (UC) animals administered with 150 μ l of 5% acetic acid once, intrarectally. The colonic mucosal injury was assessed by estimating disease activity index (DAI), which took into account weight loss, stool consistency and occult/gross bleeding. Macroscopic changes like colon length, spleen weights, ulcer area and ulcer index were determined. Haematological parameters like WBC count, RBC count, Hb (g/dL), HCT (%), PLT count and FFA level were determined. Biochemical analysis was carried out for asserting the levels of tissue myeloperoxidase (MPO) accumulation, SOD concentrations, reduced GSH and lipid peroxidation in UC induced and treated animals. The cardinal inflammatory biomarkers like nitric oxide (NO), tumor necrosis factor- α (TNF- α) and interleukin (IL-6) were determined. Histopathological investigation was carried out and scores were calculated.

Results: HASG showed presence of highly polymerized polyphenols and flavonoids amongst other extracts of *S. grandiflora*, which is correlated to its rich antioxidant potential (IC₅₀ =19.21). HPLC fingerprinting quantifies the presence of quercetin in concentration of 81.7 μ g/mg of HASG. HASG (200 mg/kg) and Prednisolone (2 mg/kg) significantly reduced DAI and macroscopic scores. The haematological changes in experimental animals were restored upon treatment with HASG and Prednisolone. HASG showed potent antioxidant activity (In-vivo) by restoring the levels of SOD, GSH, MPO, MDA and NO. HASG was found to inhibit FFA levels, which may indicate inhibition of TLR4 receptor mediated inflammation. The levels of serological biomarkers like TNF- α and IL-6 were found to be suppressed. Histopathological investigation reveals decrease signs of ulceration, necrosis, cellular infiltration, hyperaemia in HASG treated animals. The results of HASG (200 mg/kg) were found to be comparable with Prednisolone (2 mg/kg) significantly.

Conclusion: The protective action of HASG against acetic acid induced UC is attributed to the antioxidant like action (In-vitro and In-vivo) of highly polymerized polyphenols and flavonoids especially quercetin. Also HASG was found to reduce the levels of TNF- α and IL-6, thereby suppressing their inflammatory response in UC.

Huang HZ, Zhao SY, Ke XM et al. Study on the stability control strategy of Triphala solution based on the balance of physical stability and chemical stabilities. J Pharm Biomed Anal. 2018 Jun 4;158:247-256.

Abstract:

Triphala is a well-known prescription in Indian Ayurveda and TCM medicine for its great effect on gingivitis and hyperlipidemia. However, its solution is unstable for the containing of excessive polyphenol, leading to the production of sediment in the short

term and the decrease of efficacy. Based on the analysis of sediment formation, a novel control strategy is proposed. To conduct the analysis, the sediment formation was recorded for a consecutive five days. The changes in the composition of the supernatant and the sediment were studied by the HPLC profile analysis. The main components of the sediment were identified as corilagin, ellagic acid and gallic acid, and the amount of ellagic acid sediment increased with the storage time. Then, with a series of pH status adjustments of the Triphala solution, the physical and chemical stabilities were acquired by Turbiscan and HPLC respectively. The results showed that as the pH value increased, so did the physical stability, but the particle size and TSI of the association decreased. While the fingerprint of chemical profile similarity decreased, so did the chemical stability. Combining physical and chemical stability parameters, an equilibrium point was found out. When the pH value was adjusted to 5.0, both the physical and chemical stabilities were better: the verification test showed that the sedimentation inhibition rates on the 3rd, 5th, 10th and 15th days were 41%, 55%, 41%, and 23%, respectively. This manuscript provided a new control strategy that will pique pharmaceutical and food development engineers' interest and trigger research ideas controlling the quality of decoction.

Husain I, Ahmad R, Chandra A et al. Phytochemical characterization and biological activity evaluation of ethanolic extract of *Cinnamomum zeylanicum*. J Ethnopharmacol. 2018 Jun 12;219:110-116.

Abstract:

Ethnopharmacological relevance: India being a multicultural nation, every region of the country offers a distinct culinary flavor and taste. These flavors are attributed to spices and condiments which form the mainstay of Indian cuisine. Most of these spices and condiments are derived from various biodiversity hotspots in India and form the crux of India's multidiverse and multicultural cuisine. Apart from their varying aromas, flavors and tastes, these spices and condiments are known to possess several medicinal properties also. Most of these spices find considerable mention in Ayurveda, the indigenous system of medicine, as panaceas for several ailments. *Cinnamomum zeylanicum* (CZ), belonging to family Lauraceae and commonly known as cinnamon is one such spice known to have diverse medicinal properties since time immemorial.

Aim Of The Study: In the present study, apoptotic and anti-microbial activity of ethanolic extract of CZ was evaluated against human breast cancer cell line MDA-MB-231 and compared for its effect on normal kidney epithelial cell line Vero.

Materials and Methods: Ethanolic extract of tree bark of CZ was used to determine the cytotoxic effect on MDA-MB-231 using Trypan blue dye exclusion method and cytometry. The tested dose of the extract was 10-100 µg/mL. Antibacterial activity was determined using disc diffusion method against *Staphylococcus aureus* and *Escherichia coli* in the range 2-10 mg/mL. Apoptotic activity was determined using DNA fragmentation assay.

Results: Ethanolic extract of CZ was found to have an IC50 value of 25 µg/mL against MDA cell line. On the other hand, CZ extract did not have any significant effect on Vero cells even at 100 µg/mL (IC50 > 100 µg/mL). The ethanolic extract of CZ bark showed significant antibacterial activity against *S. aureus* at 10 mg/mL while no appreciable activity was detected against *E. coli*. DNA isolated from extract treated cancer cells showed a fragmentation pattern characteristic of apoptosis. However, no DNA fragmentation was observed in DNA isolated from extract treated Vero cells.

Conclusion: Ethanolic bark extract of CZ could be potentially beneficial in treating breast cancer and may be of interest for future studies in developing integrative cancer therapy against proliferation, metastasis, and migration of breast cancer cells.

Juckel G, Hoffmann K. The Indian Ayurveda medicine-a meaningful supplement to psychiatric treatment? *Nervenarzt*. 2018 Jun 6. doi: 10.1007/s00115-018-0538-9

Abstract:

Ayurveda is a traditional Indian system of medicine that is more than 3000 years old, consisting mostly of a specific diet, oily infusions mainly in the area of the head, enemas, medicinal plants and yoga. It is based on a naturopathic and anthropological belief in association with the hinduistic religion. Ayurveda has been practiced very successfully in India but so far it has only been insufficiently appreciated by western medicine, especially psychiatry. An exception is Scharfetter from Zürich who wrote a review article on this topic in 1976. Nevertheless, it is probable that particularly the immunological mechanisms of psychotic and affective disorders can be influenced by the application of ayurvedic methods; however, the empirical data source, particularly with respect to randomized controlled trials and meta-analyses regarding psychiatric disorder symptoms is limited. Even if Ayurveda is applied in a highly individualized manner, this should be rapidly improved for further evidential assessment. First positive experiences in the neuropsychiatric field in Germany are already available.

Kim S, Chang L, Weinstock Guttman B et al. Complementary and Alternative Medicine Usage by Multiple Sclerosis Patients: Results from a Prospective Clinical Study. *J Altern Complement Med*. 2018 Jun;24(6):596-602.

Abstract:

Objectives: To investigate the factors associated with complementary and alternative medicine (CAM) usage by multiple sclerosis (MS) patients. Design, Setting/Location: Single-center, prospective clinical study at an academic MS center in the northeastern United States.

Methods: This study included CAM data from 524 MS patients and 304 healthy controls (HC) enrolled in a prospective study of clinical, neuroimaging, and environmental risk factors in MS at an academic MS Center. Clinical, neuroimaging, and disease-modifying treatment data were obtained. In addition, data on usage of CAM modalities, including acupuncture, aromatherapy, Ayurveda, Chinese herbal

medicine, chiropractor, electromagnetic therapy, homeopathy, hypnosis, massage, naturopathy, Qi gong, Reiki, therapeutic touch, and bee stings were collected in an in-person interview.

Results: The percentages of HC reporting usage of any CAM (32%) was similar to that in MS patients after diagnosis (30.5%). The usage of any CAM was higher in MS patients after MS diagnosis compared to before MS diagnosis ($p < 0.001$). The three most frequently used CAM for MS patients after MS diagnosis and HC were chiropractor, massage, and acupuncture. The most frequent reasons for CAM use were MS symptom relief, back problems, and pain. In multivariate analysis, female gender, higher education level, MS disease course, and not currently on disease-modifying therapies (DMT) treatment status were associated with CAM usage.

Conclusions: Gender, education level, DMT treatment status, and MS disease course are associated with CAM usage in MS patients. Ever-CAM usage patterns in MS patients are similar to those in HC.

Razack S, Kandikattu HK, Venuprasad MP et al. Anxiolytic actions of Nardostachys jatamansi via GABA benzodiazepine channel complex mechanism and its biodistribution studies. Metab Brain Dis. 2018 Jun 22. doi: 10.1007/s11011-018-0261-z

Abstract:

Nardostachys jatamansi has profound applications against pharmacological interventions and is categorized as a hypno-sedative drug according to Ayurveda. In the present study probable mechanism of anxiolytic action of Nardostachys jatamansi extract (NJE) was studied using behavioral anxiolytic tests (Elevated plus maze, Open field test, Light dark box test, and Vogel's conflict test) in mice. Mice were treated orally with NJE (250 mg/kg) for 3, 7 and 14 days or diazepam (1 mg/kg) followed by behavioral assessment and estimation of monoamine neurotransmitters, GABA, and antioxidant enzymes. Treatment of mice for 7 days caused an increase in time spent in open arms in elevated plus maze, number of line crossings in open field test, increased time spent in lit compartment of light-dark box test, an increase in number of licks made and shocks accepted in Vogel's conflict test, with results comparable to diazepam and this treatment also caused a significant increase in monoamine neurotransmitters and GABA in brain and tissue antioxidant parameters. Co-treatment of NJE with flumazenil (GABA-benzodiazepine antagonist; 0.5 mg/kg i.p) or picrotoxin (GABA_A gated chloride channel blocker; 1 mg/kg i.p) caused a blockage/antagonised anxiolytic actions of NJE by causing a significant reduction in time spent in open arms of elevated plus maze, an decrease in number of line crossing in open field test and also number of shocks and licks accepted in Vogel's conflict test. Further, NJE was radiolabelled with technetium^{99m} at their hydroxyl groups following which purity as well as in vivo and in vitro stability of radiolabelled formulations was evaluated. The blood kinetics and in vivo bio-distribution studies were carried out in rabbits and mice respectively. Labeled formulation was found to be stable in vitro (96 to 93% stability) and in vivo (96 to 92% stability). The labeled compound was cleared rapidly from blood (within 24 h) and accumulated majorly in kidneys (11.65 ± 1.33),

liver (6.07 ± 0.94), and blood (4.03 ± 0.63) after 1 h. However, a small amount was observed in brain (0.1 ± 0.02) probably because of its inability to cross blood-brain barrier. These results highlight biodistribution pattern of NJE, and also indicated that a 7-day treatment with NJE produced significant anxiolytic effects in mice and also a significant increase in brain monoamine and GABA neurotransmitter levels and suggests that anxiolytic effects of NJE are primarily and plausibly mediated by activating GABAergic receptor complex.

Reddy K, Kearns M, Alvarez-Arango S et al. YouTube and food allergy: An appraisal of the educational quality of information. *Pediatr Allergy Immunol.* 2018 Jun;29(4):410-416

Abstract:

Background: Food allergy affects an estimated 8% of children and 3% of adults in the United States. Food-allergic individuals increasingly use the web for medical information. We sought to determine the educational quality of food allergy YouTube videos.

Methods: We performed a YouTube search using keywords "food allergy" and "food allergies". The 300 most viewed videos were included and analyzed for characteristics, source, and content. Source was further classified as healthcare provider, alternative medicine provider, patient, company, media, and professional society. A scoring system (FA-DQS) was created to evaluate quality (-10 to +34 points). Negative points were assigned for misleading information. Eight reviewers scored each video independently.

Results: Three hundred videos were analyzed, with a median of 6351.50 views, 19 likes, and 1 dislike. More video presenters were female (54.3%). The most common type of video source was alternative medicine provider (26.3%). Alternative treatments included the following: water fast, juicing, Ayurveda, apple cider, yoga, visualization, and sea moss. Controversial diagnostics included kinesiology, IgG testing, and pulse test. Almost half of the videos depicted a non-IgE-mediated reaction (49.0%). Videos by professional societies had the highest FA-DQS (7.27). Scores for videos by professional societies were significantly different from other sources ($P < .001$). There was a high degree of agreement among reviewers ($ICC = 0.820$; $P < .001$).

Conclusion: YouTube videos on food allergy frequently recommend controversial diagnostics and commonly depict non-IgE-mediated reactions. There is a need for high-quality, evidence-based, educational videos on food allergy.

Sano K, Someya T, Hara K et al. Effect of traditional plants in Sri Lanka on skin keratinocyte count. *Data Brief.* 2018 Mar 15;18:727-730.

Abstract:

This article describes the effects of extracts of several plants collected in Sri Lanka on the number of human skin keratinocytes. This study especially focuses on the plants traditionally used in indigenous systems of medicine in Sri Lanka, such as Ayurveda,

as described below (English name, "local name in Sri Lanka," scientific name). Neem plant, "kohomba," *Azadirachta indica* (Sujarwo et al., 2016; Nature's Beauty Creations Ltd., 2014) [1,2], emblic myrobalan plant, "nelli," *Phyllanthus emblica* (Singh et al., 2011; Nature's Beauty Creations Ltd., 2014) [3,4], malabar nut plant, "adhatoda," *Justicia adhatoda* (Claeson et al., 2000; Nature's Beauty Creations Ltd., 2014) [5,6], holy basil plant, "maduruthala," *Ocimum tenuiflorum* (Cohen et al., 2014; Nature's Beauty Creations Ltd., 2014) [7,8]. The expression profiles are provided as line graphs

Shelar M, Nanaware S, Arulmozhi S et al. Validation of ethnopharmacology of ayurvedic sarasvata ghrita and comparative evaluation of its neuroprotective effect with modern alcoholic and lipid based extracts in β -amyloid induced memory impairment. J Ethnopharmacol. 2018 Jun 12;219:182-194.

Abstract:

Ethnopharmacological Relevance: Sarasvata ghrita (SG), a polyherbal formulation from ayurveda, an ancient medicinal system of India, has been used to improve intelligence and memory, treat speech delay, speaking difficulties and low digestion power in children.

Aim of the study: Study aimed to validate the ethno use of SG in memory enhancement through systematic scientific protocol. The effect of SG and modern extracts of ingredients of SG was compared on cognitive function and neuroprotection in amyloid- β peptide 25-35(A β 25-35) induced memory impairment in wistar rats. Further the underlying mechanism for neuroprotective activity was investigated.

Materials and Methods: SG was prepared as per traditional method, ethanolic extract (EE) was prepared by conventional method and lipid based extract was prepared by modern extraction method. All extracts were standardised by newly developed HPLC method with respect to marker compounds. SG, EE and LE were administered orally to male Wistar rats at doses of 100,200 and 400 mg/kg Body Weight by feeding needle for a period of 21 days after the intracerebroventricular administration of A β 25-35 bilaterally. Spatial memory of rats was tested using Morris water maze (MWM) and Radial arm maze (RAM) test. The possible underlying mechanisms for the cognitive improvement exhibited by SG, EE and LE was investigated through ex-vivo brain antioxidant effect, monoamine level estimation, acetylcholine esterase (AChE) inhibitory effect and Brain-derived neurotropic factor (BDNF) levels estimation.

Results: SG, EE and LE were analyzed by HPLC method, results showed that EE extract has high percent of selected phytoconstituents as compared with SG and LE. SG and LE decrease escape latency and searching distance in a dose dependant manner during MWM test. In case of RAM significant decrease in number of errors and increase in number of correct choices indicate an elevation in retention and recall aspects of learning and memory after administration of SG an LE. SG and LE extract can efficiently prevent accumulation of β -amyloid plaque in hippocampus region. There was increase in SOD, GSH, CAT and NO level and decrease in MDA levels in SG

and LE administered animals. SG and LE have found to exhibit AchE inhibitory activity and significant dose-dependant increase in BDNF level in the plasma. SG and LE significantly increased the levels of noradrenaline, dopamine and 5-hydroxytryptamine in the brain.

Conclusion: The study validated the neuroprotective activity of SG. The study concludes the extraction efficiency of SG for selected phytoconstituents is less than modern methods. However the neuroprotective activity of SG and LE was found to be greater than EE.

Srivastava PL, Shukla A, Kalunke RM. Comprehensive metabolic and transcriptomic profiling of various tissues provide insights for saponin biosynthesis in the medicinally important *Asparagus racemosus*. Sci Rep. 2018 Jun 14;8(1):9098.

Abstract:

Asparagus racemosus (Shatavari), belongs to the family Asparagaceae and is known as a "curer of hundred diseases" since ancient time. This plant has been exploited as a food supplement to enhance immune system and regarded as a highly valued medicinal plant in Ayurvedic medicine system for the treatment of various ailments such as gastric ulcers, dyspepsia, cardiovascular diseases, neurodegenerative diseases, cancer, as a galactagogue and against several other diseases. In depth metabolic fingerprinting of various parts of the plant led to the identification of 13 monoterpenoids exclusively present in roots. LC-MS profiling led to the identification of a significant number of steroidal saponins (33). However, we have also identified 16 triterpene saponins for the first time in *A. racemosus*. In order to understand the molecular basis of biosynthesis of major components, transcriptome sequencing from three different tissues (root, leaf and fruit) was carried out. Functional annotation of *A. racemosus* transcriptome resulted in the identification of 153 transcripts involved in steroidal saponin biosynthesis, 45 transcripts in triterpene saponin biosynthesis, 44 transcripts in monoterpenoid biosynthesis and 79 transcripts in flavonoid biosynthesis. These findings will pave the way for better understanding of the molecular basis of steroidal saponin, triterpene saponin, monoterpenoids and flavonoid biosynthesis in *A. racemosus*.

UNANI MEDICINE

Cunningham AB, Ingram W, Brinckmann JA et al. Twists, turns and trade: A new look at the Indian Screw tree (*Helicteres isora*). J Ethnopharmacol. 2018 Jun 23. pii: S0378-8741(17)33886-2.

Abstract:

Ethnopharmacological Relevance: This is the first study of global trade in fruits of the widely used traditional medicine, *Helicteres isora* L.. It is used in Ayurvedic, Siddha, Unani medical systems and/or local folk traditional medicines in Bangladesh, India and Pakistan. The roots are used in Traditional Chinese Medicines in China and the fruits in jamu products in Indonesia, Malaysia and Thailand. In addition, *H. isora* fruits are also used in "traditional" medical systems far beyond the natural distribution of this species, for example in Zulu herbal medicine (South Africa) and Kurdish herbal medicines (Iraq) AIMS OF THE STUDY: This study had three aims: (i) to assess the global trade in *H. isora* fruits; (ii) to study the *H. isora* trade from West Timor to Java in terms of actors and prices along the value chain and (iii) to get a better understanding of the potential of this species to improve household income in eastern Indonesia MATERIALS AND METHODS: This study uses historical records, a contemporary analysis of global trade data (2014-2016) and field assessments of value chains and the biological factors influencing *H. isora* fruit production.

Results: Globally, the major exporter of *H. isora* fruits is India, which exports *H. isora* fruits to 19 countries, far beyond the natural geographical distribution of this species. Over a 36-month period (January 2014 - December 2016), India exported 392 t of *H. isora* fruits, with a Free-On-Board (FOB) value of Indian rupiah (INR) 18,337,000 (US\$ 274,055). This represents an average annual export quantity of about 130,526kg/year. Over this three year period, most of these exports (85.5%) were to Indonesia (346.58 t), followed by Thailand (6.85%). Indian *H. isora* exports are also used in many other medical systems, including Kurdish and Zulu "traditional" medicines in Iraq and South Africa. Formation of an Indian diaspora in Bahrain, Mauritius, South Africa, Tanzania and Trinidad and Tobago over the past 130 years is one of the drivers of *H. isora* fruit trade outside the natural geographic distribution of the species. In Indonesia, demand for *H. isora* fruits is supplemented by an intra-island trade in Java and an inter-island trade from East Nusa Tenggara. West Timor, for example, exports around 31-37 t of air-dried *H. isora* fruits per year to Java. At the farm gate, local harvesters in West Timor get 4000 IDR (c. 0.3 US\$) per kg, with businesses in Java paying 25000 IDR (c.US\$2) per kg for *H. isora* fruits. This is similar to the price paid for *H. isora* fruits imported from India to Java.

Conclusions: India is the major exporter of whole dried *H. isora* fruits, including to countries where this species has never been in traditional use. In Indonesia, *H. isora* fruit extracts are used in the cosmetic industry as well as in jamu herbal medicines, including "Tolak Angin", the country's most popular commercial "jamu" preparation. Indonesia also is the major importer of *H. isora* fruits from India. In eastern Indonesia, improved income to local villagers from the *H. isora* fruit trade could come from improved *H. isora* fruit quality due to better drying techniques. This would also reduce health risks along the supply chain from to mycotoxins that have been recorded on poorly dried *H. isora* fruits. There also is an opportunity for cultivation of *H. isora* in

small-holder teak plantations in Indonesia, with harvest of *H. isora* fruits as well as the medicinal bark.

YOGA

Adrados M, Myhre LA, Rubin LE. Late total hip arthroplasty dislocation due to yoga. *Arthroplast Today*. 2018 Mar 21;4(2):180-183

Abstract:

Yoga has become a popular form of exercise, recreation, and meditation for adults in the United States. As the popularity of both yoga and the incidence of hip replacements have both coincidentally increased over the last 2 decades, we imagine that the number of total hip replacement patients partaking in the practice of yoga has also increased. There are no clear guidelines available for yoga practice following hip replacement. To date, there have been no published reports of prosthetic hip dislocations during yoga. We present 2 cases of late total hip dislocations during yoga and provide a review of the available orthopaedic literature and our recommendations on patient restrictions and education with respect to practicing yoga after a hip replacement.

Carter JE, Pyati S, Kanach FA et al. Implementation of Perioperative Music Using the Consolidated Framework for Implementation Research. *Anesth Analg*. 2018 Jun 12. doi: 10.1213/ANE.0000000000003565.

Abstract:

Background: Complementary integrative health therapies have a perioperative role in the reduction of pain, analgesic use, and anxiety, and increasing patient satisfaction. However, long implementation lags have been quantified. The Consolidated Framework for Implementation Research (CFIR) can help mitigate this translational problem.

Methods: We reviewed evidence for several nonpharmacological treatments (CFIR domain: characteristics of interventions) and studied external context and organizational readiness for change by surveying providers at 11 Veterans Affairs (VA) hospitals (domains: outer and inner settings). We asked patients about their willingness to receive music and studied the association between this and known risk factors for opioid use (domain: characteristics of individuals). We implemented a protocol for the perioperative use of digital music players loaded with veteran-preferred playlists and evaluated its penetration in a subgroup of patients undergoing joint replacements over a 6-month period (domain: process of implementation). We then extracted data on postoperative recovery time and other outcomes, comparing them with historic and contemporary cohorts.

Results: Evidence varied from strong and direct for perioperative music and acupuncture, to modest or weak and indirect for mindfulness, yoga, and tai chi, respectively. Readiness for change surveys completed by 97 perioperative providers showed overall positive scores (mean >0 on a scale from -2 to +2, equivalent to >2.5 on the 5-point Likert scale). Readiness was higher at Durham (+0.47) versus most other VA hospitals (range +0.05 to +0.63). Of 3307 veterans asked about willingness to receive music, approximately 68% (n = 2252) answered "yes." In multivariable

analyses, a positive response (acceptability) was independently predicted by younger age and higher mean preoperative pain scores (>4 out of 10 over 90 days before admission), factors associated with opioid overuse. Penetration was modest in the targeted subset (39 received music out of a possible 81 recipients), potentially reduced by device nonavailability due to diffusion into nontargeted populations. Postoperative recovery time was not changed, suggesting smooth integration into workflow.

Conclusions: CFIR-guided implementation of perioperative music was feasible at a tertiary VA hospital, with moderate penetration in a high-risk subset of patients. Use of digital music players with preferred playlists was supported by strong evidence, tension for change, modest readiness among providers, good acceptability among patients (especially those at risk for opioid overuse), and a protocolized approach. Further study is needed to identify similar frameworks for effective knowledge-translation activities.

Clark CS. Radical RN- BS Nursing Class: Outcomes from an Integrative Yoga Elective. Int J Nurs Educ Scholarsh. 2018 Jun 13;15(1). pii: /j/ijnes.2018.15.issue-1/ijnes-2017-0073/ijnes-2017-0073.xml

Abstract:

With the knowledge of psychoneuroimmunological responses and the known high stress levels of nursing students, as caring nurse educators, we have become ethically obligated to revise and re-vision our current nursing educational practices. Nurse educators should be motivated to create innovative and radical caring science curricular approaches, so that our nurses of the future are in turn supported in creating caring- healing sustainable bedside practices. This paper details the outcomes from an upper level yoga elective in an RN- BSN program. The course is just one within an innovative holistic-integral nursing curriculum that supports nurses in practicing self-care as a way to support their ability to create caring-healing moments and spaces for patients, implement change in the workplace, and avoid the perils of burn-out related to low stress resilience, which is so common within the nursing profession.

Gebauer JE, Nehrlich AD, Stahlberg D et al. Mind-Body Practices and the Self: Yoga and Meditation Do Not Quiet the Ego but Instead Boost Self-Enhancement. Psychol Sci. 2018 Jun 1;956797618764621. doi: 10.1177/0956797618764621.

Abstract:

Mind-body practices enjoy immense public and scientific interest. Yoga and meditation are highly popular. Purportedly, they foster well-being by curtailing self-enhancement bias. However, this "ego-quieting" effect contradicts an apparent psychological universal, the self-centrality principle. According to this principle, practicing any skill renders that skill self-central, and self-centrality breeds self-enhancement bias. We examined those opposing predictions in the first tests of mind-body practices' self-enhancement effects. In Experiment 1, we followed 93 yoga students over 15 weeks, assessing self-centrality and self-enhancement bias after yoga practice (yoga condition, n = 246) and without practice (control condition,

n = 231). In Experiment 2, we followed 162 meditators over 4 weeks (meditation condition: n = 246; control condition: n = 245). Self-enhancement bias was higher in the yoga (Experiment 1) and meditation (Experiment 2) conditions, and those effects were mediated by greater self-centrality. Additionally, greater self-enhancement bias mediated mind-body practices' well-being benefits. Evidently, neither yoga nor meditation fully quiet the ego; to the contrary, they boost self-enhancement.

Kraan RB, Beers L, van de Pol D et al. Systematic review on posterior circumflex humeral artery pathology: sports and professions at risk and associated risk factors. J Sports Med Phys Fitness. 2018 Jun 7. doi: 10.23736/S0022-4707.18.08579-1

Abstract:

Introduction: Posterior circumflex humeral artery (PCHA) aneurysm formation and thrombosis as overuse injury in the dominant shoulder can result in ischemia of the forearm, hand and digits due to arterial embolisms. Increased awareness among physicians is necessary as PCHA pathology (PCHAP) might be underdiagnosed. Knowledge of sports and professions at risk and risk-factors for obtaining PCHAP is essential for the development of future preventive measures. This study aims to identify sports and professions at risk as well as risk factors for PCHAP.

Evidence acquisition: The databases of MEDLINE, EMBASE, BIOSIS, CINAHL and SPORTDiscus were systematically searched.

Evidence synthesis: Twenty-seven papers fulfilled the inclusion criteria and described 67 patients with PCHAP involved in seven sports and three professions. The sports (number of cases) were volleyball (41), baseball (13), swimming (1), tennis (3), American football (2), canoeing (1) and yoga (1) (2 unknown). The professions included a baseball coach, a circus trapeze artist and a mechanic. Apart from expert opinions, no studies have identified risk factors for PCHAP. An anatomic variation of the PCHA origin is suggested to be protective for PCHAP.

Conclusions: PCHAP is reported in seven overhead sports and three professions. No risk factors for PCHAP were identified. An anatomic variant of the PCHA origin was found to be a potential protective factor for PCHAP. Physicians should be cautious for distal embolization as a result of PCHAP in athletes and workers, both adult and adolescent, involved in repetitive powerful overhead movements.

Lyman GH, Greenlee H, Bohlke K et al. Integrative Therapies During and After Breast Cancer Treatment: ASCO Endorsement of the SIO Clinical Practice Guideline. J Clin Oncol. 2018 Jun 11;JCO2018792721. doi: 10.1200/JCO.2018.79.2721.

Abstract:

Purpose The Society for Integrative Oncology (SIO) produced an evidence-based guideline on use of integrative therapies during and after breast cancer treatment that was determined to be relevant to the American Society of Clinical Oncology (ASCO)

membership. ASCO considered the guideline for endorsement. Methods The SIO guideline addressed the use of integrative therapies for the management of symptoms and adverse effects, such as anxiety and stress, mood disorders, fatigue, quality of life, chemotherapy-induced nausea and vomiting, lymphedema, chemotherapy-induced peripheral neuropathy, pain, and sleep disturbance. Interventions of interest included mind and body practices, natural products, and lifestyle modifications. SIO systematic reviews focused on randomized controlled trials that were published from 1990 through 2015. The SIO guideline was reviewed by ASCO content experts for clinical accuracy and by ASCO methodologists for developmental rigor. On favorable review, an ASCO Expert Panel was convened to review the guideline contents and recommendations. Results The ASCO Expert Panel determined that the recommendations in the SIO guideline-published in 2017-are clear, thorough, and based on the most relevant scientific evidence. ASCO endorsed the guideline with a few added discussion points. Recommendations Key recommendations include the following: Music therapy, meditation, stress management, and yoga are recommended for anxiety/stress reduction. Meditation, relaxation, yoga, massage, and music therapy are recommended for depression/mood disorders. Meditation and yoga are recommended to improve quality of life. Acupressure and acupuncture are recommended for reducing chemotherapy-induced nausea and vomiting. Acetyl-l-carnitine is not recommended to prevent chemotherapy-induced peripheral neuropathy because of a possibility of harm. No strong evidence supports the use of ingested dietary supplements to manage breast cancer treatment-related adverse effects. Additional information is available at: www.asco.org/supportive-care-guidelines .

Mak C, Whittingham K, Cunnington R et al. Effect of mindfulness yoga programme Mi Yoga on attention, behaviour, and physical outcomes in cerebral palsy: a randomized controlled trial. Dev Med Child Neurol. 2018 Jun 4. doi: 10.1111/dmcn.13923.

Abstract:

Aim: To investigate the efficacy of an embodied mindfulness-based movement programme (MiYoga), targeting attention in children with cerebral palsy (CP).

Method: Total number of participants 42, with 24 boys (57.1%) and 18 girls (42.9%); mean age 9y 1mo, SD 3y; Gross Motor Function Classification System levels I=22, II=12, III=8) and their parents were randomized to either MiYoga (n=21) or waitlist comparison (n=21) groups. The primary outcome was attention postintervention measured by the Conners' Continuous Performance Test, Second Edition (CCPT). Secondary outcomes included parent and child mindfulness, child quality of life, parental well-being, child executive function, child behaviour, child physical measures, and the parent-child relationship.

Results: Children in the MiYoga group demonstrated significantly better attention postintervention than the waitlist comparison group, with lower inattention scores on the hit reaction time standard error ($F_{1,33} = 4.59$, $p = 0.04$, partial eta-squared [η^2]=0.13) variable and fewer perseveration errors ($F_{1,33} = 4.60$, $p = 0.04$, $\eta^2 = 0.13$)

on the CCPT. Intention-to-treat analysis also revealed that sustained attention in the MiYoga group was significantly better than in the waitlist comparison group postintervention ($F_{1,37} = 5.97$, $p = 0.02$, $\eta^2 = 0.14$). Parents in the MiYoga group demonstrated significantly decreased mindfulness (Mindfulness Attention Awareness Scale; $F_{1,33} = 10.130$, $p = 0.003$, $\eta^2 = 0.246$).

Interpretation: MiYoga offers a lifestyle intervention that improves attention in children with CP. MiYoga can be considered as an additional option to standard rehabilitation to enhance attention for children with CP.

What this paper adds: MiYoga, an embodied mindfulness-based movement programme, can enhance attention (more attentive and consistent performance) in children with cerebral palsy. MiYoga had no significant effect on physical functioning.

McGovern CE, Cheung C. Yoga and Quality of Life in Women with Primary Dysmenorrhea: A Systematic Review. J Midwifery Womens Health. 2018 Jun 14. doi: 10.1111/jmwh.12729

Abstract:

Introduction: Primary dysmenorrhea is a prevalent condition causing quality of life (QOL) reduction for many women, resulting from pain as well as parallel social and psychological distress. Yoga reduces pain and sympathetic reactivity, thus promoting QOL. This article reports a systematic review of the evidence for the effectiveness of yoga as a QOL improvement method for women with primary dysmenorrhea.

Methods: The PRISMA guidelines were used in preparation of this review. Ovid MEDLINE, PsycINFO, CINAHL, Scopus, PubMed, ScienceDirect, Cochrane Database of Systematic Reviews (CDSR), and Cochrane Central Register of Controlled Trials (CENTRAL) were screened through January 2017 using the keywords yoga, meditation, menstrual cycle, dysmenorrhea, pelvic pain, and prostaglandins. English-language randomized controlled trials (RCTs) and quasi-experimental studies regarding yoga, primary dysmenorrhea, and QOL were eligible; all yoga styles were included. Two independent reviewers rated the methodological quality of each study selected for review using the Downs and Black checklist; possible scores ranged from 0 to 32. Ratings were established through consensus.

Results: The search yielded a total of 378 articles, of which 14 (age range 13-45 years, $N = 1409$) met the criteria for final review: 8 RCTs and 6 quasi-experimental studies. Downs and Black ratings were predominantly moderate in quality with moderate risk of bias, ranging from 15 to 23 (RCTs) and 10 to 17 (quasi-experimental studies). Statistically significant improvements along most QOL domains, including physical pain, sleep, concentration, negative feelings, social relationships, work capacity, and overall QOL, were identified after a yoga intervention. Results indicate preliminary evidence for yoga as a safe and effective QOL improvement method for women with primary dysmenorrhea.

DISCUSSION: Practitioners may consider yoga for management of primary dysmenorrhea. However, future research using larger RCTs of high methodological quality is needed to ascertain the magnitude of yoga's clinical significance.

Meister K, Becker S. Yoga for mental disorders. Nervenarzt. 2018 Jun 1. doi: 10.1007/s00115-018-0537-x.

Abstract:

Background: The demand for complementary clinically efficacious, safe, patient acceptable, and cost-effective forms of treatment for mental illness is growing. Yoga has beneficial effects on somatic and mental health factors; therefore, yoga has preventive and therapeutic capabilities to improve mental dysfunction.

Objective: In this overview of the current literature, the evidence of the effects of yoga on selected major psychiatric disorders is summarized.

Results: The strongest evidence base for yoga exists in reducing depressive symptoms but its use in major depressive disorders is less clear. The evidence for the efficacy of yoga for anxiety disorders, and posttraumatic stress disorder (PTSD) is encouraging, but not definitive due to only a few randomized controlled trials and methodological problems.

Conclusion: There is preliminary evidence that meditation-based yoga interventions may be helpful for depression, anxiety and PTSD; however, there may also be the risk of engaging in extreme yoga practices. The value of integrating yoga into a treatment plan for patients with psychiatric disorders needs to be evaluated on an individual basis. Healthcare providers can motivate and help patients evaluate whether a given yoga class is helpful and safe for them. Methodological problems and the unclear risk-benefit ratio preclude definitive recommendations for yoga as an adjunct treatment.

Nair SP, Kotian S, Hiller C et al. Survey of Musculoskeletal Disorders Among Indian Dancers in Mumbai and Mangalore. J Dance Med Sci. 2018 Jun 15;22(2):67-74.

Abstract:

Classical Indian dance has earned recognition across the globe; however, the health of dancers who are carrying forth this heritage has not received due attention. Therefore, this study aimed to explore musculoskeletal pain and injury prevailing among Indian dancers in Mumbai and Mangalore. A secondary aim was to compare pain tolerance levels between dancers and non-dancers. Fifty-one dancers trained in different traditional Indian and Western dance forms and 164 recreational dancers were recruited as participants. An indigenous questionnaire was designed and validated by physical therapists across various levels of experience and dancers across various training levels. The questionnaire recorded dance, pain, and injury profiles. Additionally, pain tolerance was evaluated using the Pain Sensitivity Questionnaire among dancers and healthy age- and gender-matched controls (N = 200). Descriptive statistical analysis was performed to present results of the site of

current pain, site of past injury, perceived causes of injury, and exercise routine. The Student's t-test was used to compare Pain Sensitivity Questionnaire scores between dancers and non-dancers, and independent one-way ANOVA was used to compare scores among dancers practicing different dance forms. For both current pain and past injury, dancers reported the back (42.5%) followed by the knee (28.3%) and ankle (18.6%) as the most common sites. Stress was the most commonly perceived cause of injury (34.4%), followed by over work (24.7%), tiredness (17.2%), and falls (13.5%). Warm-up exercises were always performed by 43.30% of dancers, whereas only 20% performed stretching after dance. Almost 60% of dancers participated in forms of exercise other than dance, e.g., swimming, yoga, and aerobics. Pain sensitivity was not significantly different between dancers and non-dancers ($p = 0.159$). Level of training and gender did not influence pain.

Panchik D, Masco S, Zinnikas P et al. Effect of Exercise on Breast Cancer-Related Lymphedema: What the Lymphatic Surgeon Needs to Know. J Reconstr Microsurg. 2018 Jun 23. doi: 10.1055/s-0038-1660832.

Abstract:

Background: Breast cancer-related lymphedema (BCRL) affects many areas of daily living. Individuals with lymphedema may experience chronic and progressive swelling, recurrent skin infections, and decreased self-image and quality of life. For many years, it was considered best practice for this population to avoid exercise; however, in recent years, research has begun to challenge this belief. This systematic review and meta-analyses examined the recent literature on the effects of exercise for patients with, or at risk for, BCRL to inform best practice.

Methods: A total of 807 articles were retrieved from CINAHL, Academic Search Complete, Medline, and PubMed. Results were systematically filtered to 26 articles through inclusion criteria, exclusion criteria, and the Effective Public Health Practice Project quality assessment tool for quantitative studies. Data were pooled from studies containing relative and absolute volume measurements of limb volume, as well as upper extremity function measured by the Disabilities of Arm, Shoulder, and Hand (DASH) questionnaire; meta-analyses were conducted using SAS software.

Results: The literature was reviewed and statistically analyzed. Results have indicated aerobic exercise, resistance exercise, stretching, yoga, qigong, and pilates can be safe and effective in the management of symptoms for those with, or at risk for, BCRL.

Conclusion: Several forms of exercise appear to be safe interventions for clinicians to use when treating this population and offer benefits such as improved quality of life, strength, body mass index, and mental health and decreased pain and lymphatic swelling. Additional research should be conducted to further examine the efficacy and safety of nontraditional forms of exercise in the treatment of BCRL.

Pandey A, Hale D, Das S et al. Effectiveness of Universal Self-regulation-Based Interventions in Children and Adolescents: A Systematic Review and Meta-analysis. JAMA Pediatr. 2018 Jun 1;172(6):566-575.

Abstract:

Importance: Childhood and adolescence self-regulation (SR) is gaining importance as a target of intervention because of mounting evidence of its positive associations with health, social and educational outcomes.

Objective: To conduct a systematic review and meta-analysis of rigorously evaluated interventions to improve self-regulation in children and adolescents.

Data Sources: Keyword searches of the PsycINFO, PubMed, EMBASE, CINAHL Plus, ERIC, British Education Index, Child Development and Adolescent Studies, and CENTRAL were used to identify all studies published through July 2016.

Study Selection: To be eligible for this review, studies had to report cluster randomized trials or randomized clinical trials, evaluate universal interventions designed to improve self-regulation in children and adolescents aged 0 to 19 years, include outcomes associated with self-regulation skills, and be published in a peer-reviewed journal with the full text available in English.

Data Extraction and Synthesis: A total of 14 369 published records were screened, of which 147 were identified for full-text review and 49 studies reporting 50 interventions were included in the final review. Results were summarized by narrative review and meta-analysis.

Main Outcomes and Measures: Self-regulation outcomes in children and adolescents.

Results: This review identified 17 cluster randomized trials and 32 randomized clinical trials evaluating self-regulation interventions, which included a total of 23 098 participants ranging in age from 2 to 17 years (median age, 6.0 years). Consistent improvement in self-regulation was reported in 16 of 21 curriculum-based interventions (76%), 4 of the 8 mindfulness and yoga interventions (50%), 5 of 9 family-based programs (56%), 4 of 6 exercise-based programs (67%), and 4 of 6 social and personal skills interventions (67%), or a total of 33 of 50 interventions (66%). A meta-analysis evaluating associations of interventions with self-regulation task performance scores showed a positive effect of such interventions with pooled effect size of 0.42 (95% CI, 0.32-0.53). Only 24 studies reported data on distal outcomes (29 outcomes). Positive associations were reported in 11 of 13 studies (85%) on academic achievement, 4 of 5 studies on substance abuse (80%), and in all studies reporting on conduct disorders (n = 3), studies on social skills (n = 2), studies on depression (n = 2), studies on behavioral problems (n = 2), and study on school suspensions (n = 1). No effect was seen on 2 studies reporting on academic achievement, 1 study reporting on substance abuse, and 1 additional study reporting on psychological well-being.

CONCLUSIONS AND RELEVANCE: A wide range of interventions were successful in improving self-regulation in children and adolescents. There was improvement in distal academic, health, and behavioral outcomes in most intervention groups compared with controls.

Schürger N, Klein E, Hapfelmeier A et al. Demand for integrative medicine among women in pregnancy and childbed: a German survey on patients' needs. BMC Complement Altern Med. 2018 Jun 15;18(1):187.

Abstract:

Background: Although integrative medicine is gaining increasing attention and is claiming more and more its place in modern health care, it still plays a marginal role in conventional maternity care. The present study aims to examine the patterns of Complementary and Alternative Medicine (CAM) use and the demand for integrative therapies, including CAM, relaxation therapies, nutritional counseling, and psychological assistance, among women in pregnancy and childbed.

Methods: The survey was conducted from April 2017 to July 2017 by means of a pseudo-anonymous 38-item questionnaire at the Department of Gynecology and Obstetrics, Klinikum rechts der Isar, Technical University of Munich. Eligible participants were women hospitalized due to pregnancy related complications and women in childbed. Descriptive statistics were generated to determine patterns of CAM use and demand for integrative therapeutic approaches. Univariate analysis was used to detect associations between patients' characteristics and their interest in the different integrative therapies. Furthermore, binary logistic regression was used to estimate the odds ratio of demand for CAM.

Results: A total of 394 out of 503 patients participated in the survey (78%). 60% declared using CAM in general, 45% specifically in relation to their pregnancy or childbed. Most commonly used modalities were vitamins (31% of all patients), yoga (24%), and herbal supplements (23%). Most popular sources of recommendation of CAM use were midwives and gynecologists. Integrative therapy options patients would have wanted alongside conventional maternity care were CAM (64%), relaxation therapies (44%), dietary counseling (28%), and psychological counseling (15%). Furthermore, associations between patients' sociodemographic characteristics and their demand for integrative therapies were identified.

Conclusions: The results of this study demonstrate that there is a considerable demand for integrative medicine and widespread use of CAM among women during pregnancy and childbed in Germany. Maternity health care providers should be aware of these findings in order to be able to better address patients' needs and wishes. Our study findings should be interpreted with regard to patients in an hospital setting.

Taylor SM, Cheung EO, Sun R et al. Applications of complementary therapies during rehabilitation for individuals with traumatic Spinal Cord Injury: Findings from the SCIRehab Project. J Spinal Cord Med. 2018 Jun 8:1-8.

Abstract:

Objective: Evaluate the use of complementary therapies during rehabilitation for patients with traumatic spinal cord injury (SCI).

Design: Secondary analyses were conducted to identify the use and associated outcomes of complementary therapies provided by occupational therapists (OTs) and physical therapists (PTs) during rehabilitation from a public dataset.

Setting: Inpatient rehabilitation.

Participants: A public dataset composed of 1376 patients with SCI that were enrolled in a five-year, multi-center investigation, the SCIR rehab Project. Secondary analyses focused on a subset of 93 patients (47 who received complementary therapy during treatment and 46 case-matched controls who received no complementary therapy).

Interventions: OTs and PTs recorded use of complementary therapies during sessions, including yoga, Pilates, tai chi, aromatherapy, relaxation techniques, imagery and other.

Outcome measures: Pain interference, pain severity, mobility, and social integration.

Results: Three percent of participants received any complementary therapies. Patients who received complementary therapies showed greater reductions in pain severity from 6 months to 12 months relative to matched controls. Furthermore, the amount of time that patients received complementary therapies during physical therapy sessions was associated with reduced pain interference at 6 months and with reduced pain severity at the 6-month and 12-month follow-ups. Complementary therapy use was not associated with mobility or social integration.

Conclusion: The current study provides preliminary evidence documenting the limited use of complementary therapies in rehabilitation settings and highlights the opportunity for further research, particularly regarding pain-related outcomes.

Tiedemann A, O'Rourke S, Sherrington C. Is a yoga-based program with potential to decrease falls perceived to be acceptable to community-dwelling people older than 60? Public Health Res Pract. 2018 Jun 14;28(2). pii: 28011801.

Abstract:

Objectives and importance of study: Yoga improves balance and mobility, and therefore has potential as a fall prevention strategy, yet its validity for preventing falls has not been established. The Otago Exercise Programme (OEP) and tai chi are proven to prevent falls. This study aimed to evaluate the perceptions and preferences of older people towards a yoga-based program with potential to decrease falls, to compare these perceptions to the views expressed about the OEP and tai chi, and to identify participant characteristics associated with a preference for the yoga program.

Study Type: Survey.

Methods: Participants were 235 community-dwellers aged 60 years or older who were not participating or had not previously participated (within the past 10 years) in yoga-based exercise. Participants completed a self-report survey measuring demographics, physical activity level and attitude. They then viewed explanations of the yoga-based program, the OEP and tai chi. Participants completed the Attitudes to Falls-Related Interventions Scale (AFRIS) to measure program acceptability and identified their preferred program. Acceptability scores and preference were compared between the programs, and factors associated with yoga preference were identified with analysis of variance.

Results: The mean age of participants (69% female) was 69.4 years (standard deviation 7.4). All programs were rated as equally acceptable ($p = 0.17$), with AFRIS scores ranging from 28.1 to 29.4. Eighty-two people (35%) preferred yoga, 32% chose the OEP and 33% chose tai chi. Overall, people who preferred yoga were significantly younger, healthier, less fearful of falling, and perceived exercise more positively than people who preferred the OEP (p values ranged from 0.03 to <0.001). The characteristics of people who preferred yoga and those who preferred tai chi did not vary significantly.

Conclusions: Yoga was perceived to be appropriate and was as popular as two validated fall prevention programs. Yoga warrants further investigation as a fall prevention strategy, particularly for 'younger' and healthier people aged 60 years or older.

Uebelacker LA, Weinstock LM, Battle CL et al. Treatment credibility, expectancy, and preference: Prediction of treatment engagement and outcome in a randomized clinical trial of hatha yoga vs. health education as adjunct treatments for depression. J Affect Disord. 2018 Jun 2;238:111-117. doi: 10.1016/j.jad.2018.05.009.

Abstract:

Background: Hatha yoga may be helpful for alleviating depression symptoms. The purpose of this analysis is to determine whether treatment program preference, credibility, or expectancy predict engagement in depression interventions (yoga or a control class) or depression symptom severity over time.

Methods: This is a secondary analysis of a randomized controlled trial (RCT) of hatha yoga vs. a health education control group for treatment of depression. Depressed participants ($n = 122$) attended up to 20 classes over a period of 10 weeks, and then completed additional assessments after 3 and 6 months. We assessed treatment preference prior to randomization, and treatment credibility and expectancy after participants attended their first class. Treatment "concordance" indicated that treatment preference matched assigned treatment.

Results: Treatment credibility, expectancy, and concordance were not associated with treatment engagement. Treatment expectancy moderated the association between treatment group and depression. Depression severity over time differed by expectancy level for the yoga group but not for the health education group. Controlling for baseline

depression, participants in the yoga group with an average or high expectancy for improvement showed lower depression symptoms across the acute intervention and follow-up period than those with a low expectancy for improvement. There was a trend for a similar pattern for credibility. Concordance was not associated with treatment outcome.

Limitations: This is a secondary, post-hoc analysis and should be considered hypothesis-generating.

Conclusions: Results suggest that expectancy improves the likelihood of success only for a intervention thought to actively target depression (yoga) and not a control intervention.

Yip BHK, Li X, Leung CHY et al. Trial Protocol: The use of mindfulness-based intervention for improving bracing compliance for adolescent idiopathic scoliosis patients: protocol for a randomised, controlled trial. J Physiother. 2018 Jun 12. pii: S1836-9553(18)30042-0. doi: 10.1016/j.jphys.2018.02.019.

Abstract:

Introduction: Adolescent idiopathic scoliosis (AIS) is the most prevalent deforming orthopaedic condition; it causes significant disability when spinal curves progress beyond 45deg. Bracing is the primary treatment prescribed for adolescents with an immature skeleton who have spinal curves between 25 and 45deg. New evidence suggests that compliance with bracing significantly decreases the progression of high-risk curves to the threshold for surgery. Nonetheless, bracing is a stressful experience. Therefore, interventions that mediate health-related quality of life for AIS patients are of great interest. In the past few decades, numerous studies have documented the benefits of mindfulness training on chronic pain, stress management, anxiety and emotional disorders. Mindfulness might additionally provide AIS patients with psychosocial support.

Research Questions: This study will investigate the effects of a mindfulness-based intervention on bracing compliance and quality of life among AIS patients with poor bracing compliance. The study also plans to evaluate if the mindfulness-based intervention effect is sustained after the intervention period. The potential mechanism by which mindfulness affects bracing compliance will be explored.

Design: Single-blind, two-arm, randomised, controlled trial.

Participants and setting: The study will recruit 120 AIS patients aged between 10 and 15 years with non-satisfactory bracing compliance. Patients who have previously practised or are currently practising meditation or mindful yoga or who cannot finish the whole intervention will be excluded. The study will take place at the Jockey Club School of Public Health and Primary Care building.

Intervention: Patients in the mindfulness-based intervention group will join weekly sessions for 8 weeks. This program is a short version of a mindfulness-based stress

relaxation program to address the specific issues of AIS patients. Two to three experienced instructors will deliver the program.

Control: Control group patients will participate in an 8-week physiotherapy exercise program as recommended in the International Scientific Society on Scoliosis Orthopaedic and Rehabilitation Treatment (SOSORT) 2011 guideline.

Measurements: The primary outcome is the 6-month post-intervention total score of bracing compliance. Secondary measures are non-bracing-specific quality of life, bracing-specific quality of life, self-compassion, emotional regulation, mindful awareness and acceptance, self-efficacy, perception of stress, and general measure of health outcome.

Procedure: 120 participants will be assigned to either an intervention or control arm by simple randomisation, and the randomisation result will only be revealed once participants have confirmed availability to attend intervention classes. Clinicians of the scoliosis clinic and research staff will be blinded to the treatment allocation.

Analysis: ANCOVA will be conducted to compare the effect of mindfulness-based intervention versus physiotherapy exercise on the outcome measures. To investigate significant change over time, linear mixed models analyses will be conducted following the intention-to-treat principle. The R-package lavaan will be used to conduct structural equation modelling to study the potential mechanism of mindfulness.

Discussion/significance: This will be the first psychosocial intervention study conducted on braced AIS patients with the aim of improving patients' bracing compliance and quality of life. The results from this study will potentially carry significant impact on future AIS treatment by emphasising psychosocial care for braced AIS patients.

Zou L, Yeung A, Li C et al. Effects of Mind-Body Movements on Balance Function in Stroke Survivors: A Meta-Analysis of Randomized Controlled Trials. Int J Environ Res Public Health. 2018 Jun 20;15(6).

Abstract:

Objective: We performed a systematic review with meta-analysis and meta-regression to determine if mind-body movements (MBM) could be effective in rehabilitating balance function among stroke survivors.

Methods: A literature search was conducted using major Chinese and English electronic databases from an inception until January 2018. Randomized controlled studies were included in our meta-analysis. Data was independently extracted by two review authors using a pre-developed table and confirmed by a third party to reach a consensus. Pooled effect size (Hedge's g) was computed while the random-effect model was set.

Results: The meta-analytic results showed a significant benefit of the MBM intervention on increased balance function compared to the control groups (Hedge's $g = 1.59$, $CI 0.98$ to 2.19 , $p < 0.001$, $I^2 = 94.95\%$). Additionally, the

meta-regression indicated that the total number of sessions ($\beta = 0.00142$, 95% CI 0.0039 to 0.0244, $p = 0.0067$) and dose of weekly training ($\beta = 0.00776$, 95% CI 0.00579 to 0.00972, $p = 0.00$) had significantly positive effects on balance function. *Conclusions:* The study encouraging findings indicate the rehabilitative effect of a MBM intervention for balance function in stroke survivors. However, there were significant limitations in the design among several of the included trials. Additional studies with more robust methodologies are needed to provide a more definitive conclusion.