

16 mindfulness & compassion abstracts **november/december '14 newsletter**

(Bègue, Beauvois et al. 2014; Bergen-Cico and Cheon 2014; Crockett, Kurth-Nelson et al. 2014; Greenberg and Meiran 2014; Johnson, Thom et al. 2014; Kauffman 2014; Kiatpongsan and Norton 2014; Kurdyak, Newman et al. 2014; Mantzios and Wilson 2014; Marazziti, Akiskal et al. 2014; Sundquist, Lilja et al. 2014; Van Dam, Hobkirk et al. 2014; van der Kolk, Stone et al. 2014; Woo, Koban et al. 2014; Zenner, Herrnleben-Kurz et al. 2014)

Bègue, L., J.-L. Beauvois, et al. (2014). "**Personality predicts obedience in a Milgram paradigm.**" *Journal of Personality*: n/a-n/a. <http://dx.doi.org/10.1111/jopy.12104>

This study investigates how obedience in a Milgram-like experiment is predicted by interindividual differences.

Participants were 35 males and 31 females aged 26–54 from the general population who were contacted by phone 8 months after their participation in a study transposing Milgram's obedience paradigm to the context of a fake television game show. Interviews were presented as opinion polls with no stated ties to the earlier experiment. Personality was assessed by the Big Five Mini-Markers questionnaire (Saucier, 1994). Political orientation and social activism were also measured. Results confirmed hypotheses that Conscientiousness and Agreeableness would be associated with willingness to administer higher-intensity electric shocks to a victim. Political orientation and social activism were also related to obedience. Our results provide empirical evidence suggesting that individual differences in personality and political variables matter in the explanation of obedience to authority.

Bergen-Cico, D. and S. Cheon (2014). "**The mediating effects of mindfulness and self-compassion on trait anxiety.**" *Mindfulness* 5(5): 505-519. <http://dx.doi.org/10.1007/s12671-013-0205-y>

Research has found meditation to be associated with improved mental health; however, less is known about how these positive outcomes develop. To better understand the operant effects of meditation on mental health, this study is set forth to examine the potential mediating effects of commonly measured constructs of mindfulness and self-compassion on trait anxiety, a personality trait prevalent in many psychiatric conditions. This longitudinal study uses a meditation treatment (n = 108) and comparative control (n = 94) designed to examine relational changes in mindfulness, self-compassion, and trait anxiety data collected in three waves: (a) baseline, (b) mid-program, and (c) post-program. Structural equation modeling (SEM) revealed significant increases in mindfulness and self-compassion scores among the treatment cohort and cross-lagged regression models that revealed significant reductions in trait anxiety were mediated by preceding increases in mindfulness. SEM model testing found that increases in mindfulness precipitate increases in self-compassion, but neither self-compassion nor anxiety mediated mindfulness. Whereas both self-compassion and mindfulness were associated with reductions in anxiety, the cultivation of mindfulness had the most robust mediating effect on reductions in trait anxiety. These findings reinforce previous studies that have suggested that increases in mindfulness skills may mediate the effects of meditation on mental health outcomes. Among the strengths of the current study are the longitudinal three waves of data, including mid-program data that enables cross-lagged regression. The cross-lagged models indicate the temporal ordering of changes and reveal mindfulness as the key mediating variable preceding substantive changes in self-compassion and trait anxiety.

Crockett, M. J., Z. Kurth-Nelson, et al. (2014). "**Harm to others outweighs harm to self in moral decision making.**" *Proceedings of the National Academy of Sciences*. <http://www.pnas.org/content/early/2014/11/12/1408988111.abstract>

(Available in free full text) Concern for the suffering of others is central to moral decision making. How humans evaluate others' suffering, relative to their own suffering, is unknown. We investigated this question by inviting subjects to trade off profits for themselves against pain experienced either by themselves or an anonymous other person. Subjects made choices between different amounts of money and different numbers of painful electric shocks. We independently varied the recipient of the shocks (self vs. other) and whether the choice involved paying to decrease pain or profiting by increasing pain. We built computational models to quantify the relative values subjects ascribed to pain for themselves and others in this setting. In two studies we show that most people valued others' pain more than their own pain. This was evident in a willingness to pay more to reduce others' pain than their own and a requirement for more compensation to increase others' pain relative to their own. This "hyperaltruistic" valuation of others' pain was linked to slower responding when making decisions that affected others, consistent with an engagement of deliberative processes in moral decision making. Subclinical psychopathic traits correlated negatively with aversion to pain for both self and others, in line with reports of aversive processing deficits in psychopathy. Our results provide evidence for a circumstance in which people care more for others than themselves. Determining the precise boundaries of this surprisingly prosocial disposition has implications for understanding human moral decision making and its disturbance in antisocial behavior. [*MedicalXpress comments interestingly on this research - see <http://medicalxpress.com/news/2014-11-people-profit.html> - saying "A UCL-led experiment on 80 pairs of adults found that people were willing to sacrifice on average twice as much money to spare a stranger pain than to spare themselves, despite the decision being secret ... Their findings provide a surprisingly optimistic view of human nature, in stark contrast with previous economic studies claiming people fundamentally care about their own interests over those of other people. Understanding how people balance financial gains against the suffering of others could help to explain how policymakers and business leaders make spending decisions, for example on policies to improve the welfare of citizens or employees."*]

Greenberg, J. and N. Meiran (2014). "**Is mindfulness meditation associated with "feeling less?"**" *Mindfulness* 5(5): 471-476. <http://dx.doi.org/10.1007/s12671-013-0201-2>

Following previous research which has suggested that mindfulness meditators are less affected by emotional stimuli, the current study examined the hypothesis that mindfulness meditation is associated with decreased emotional engagement, by inducing moods and asking participants to generate as many autobiographical memories opposite in valence as possible. Experienced mindfulness meditators took twice as long as non-meditators to generate the first opposite mood memory yet generated the same total number of memories as non-meditators. Contrary to the initial hypothesis, results indicate that mindfulness may be associated with increased emotional engagement, increased contact with emotions, and rapid recovery from the emotional experience. The effect of mindfulness on implicit and explicit aspects of emotion is discussed, as well as potential implications for treatment of related disorders.

Johnson, D. C., N. J. Thom, et al. (2014). "**Modifying resilience mechanisms in at-risk individuals: A controlled study of mindfulness training in marines preparing for deployment.**" *American Journal of Psychiatry* 171(8): 844-853. <http://ajp.psychiatryonline.org/doi/abs/10.1176/appi.ajp.2014.13040502>

Marines who had first received Mindfulness-Based Mind Fitness Training, which can affect brain structures integral to the body's response to stress, experienced quicker heart rate and breathing rate recovery, improved sleep quality, and lower levels of neuropeptide Y after stressful combat training than a comparison group without the intervention. Objective: Military deployment can have profound effects on physical and mental health. Few studies have examined whether interventions prior to deployment can improve mechanisms underlying resilience. Mindfulness-based techniques have been shown to aid recovery from stress and may affect brain-behavior relationships prior to deployment. The authors examined the effect of mindfulness training on resilience mechanisms in active-duty Marines preparing for deployment. Method: Eight Marine infantry platoons (N=281) were randomly selected. Four platoons were assigned to receive mindfulness training (N=147) and four were assigned to a training-as-usual control condition (N=134). Platoons were assessed at baseline, 8 weeks after baseline, and during and after a stressful combat training session approximately 9 weeks after baseline. The mindfulness training condition was delivered in the form of 8 weeks of Mindfulness-Based Mind Fitness Training (MMFT), a program comprising 20 hours of classroom instruction plus daily homework exercises. MMFT emphasizes interoceptive awareness, attentional control, and tolerance of present-moment experiences. The main outcome measures were heart rate, breathing rate, plasma neuropeptide Y concentration, score on the Response to Stressful Experiences Scale, and brain activation as measured by functional MRI. Results: Marines who received MMFT showed greater reactivity (heart rate [d=0.43]) and enhanced recovery (heart rate [d=0.67], breathing rate [d=0.93]) after stressful training; lower plasma neuropeptide Y concentration after stressful training (d=0.38); and attenuated blood-oxygen-level-dependent signal in the right insula and anterior cingulate. Conclusions: The results show that mechanisms related to stress recovery can be modified in healthy individuals prior to stress exposure, with important implications for evidence-based mental health research and treatment.

Kauffman, S. B. (2014). *"Is kindness physically attractive."* *Scientific American*.

<http://blogs.scientificamerican.com/beautiful-minds/2014/10/09/is-kindness-physically-attractive/>

One of the most robust findings in social psychology is the beauty-is-good stereotype: physically attractive people are perceived and treated more positively than physically unattractive people [1]. But here's the thing: I have definitely met attractive people who went from hot to not the second they opened their mouths! Vice-versa, some people are so kind and awesome that you can't help but be attracted to them, regardless of their score on hornotnot.com. Which has me wondering: I know beautiful is often perceived as good, but isn't good also beautiful? I mean, I know we are an extremely looks obsessed culture, and research does show that the people we initially perceive as physically attractive tend to follow a very predictable pattern: they are average, symmetrical, and have hormone-dependent features [2]. But don't things like character and goodness also factor into our perceptions of physical attractiveness? Enter a new study by Yan Zhang and colleagues. The researchers randomly assigned Chinese participants to one of three groups and had them rate 60 photographs of unfamiliar Chinese female faces. All the photographs were taken from Google, and all of the faces had neutral emotional expressions. After two weeks, the participants rated the same pictures again. But this time, one group of participants were given positive personality descriptors of the people in the photographs (e.g., decent, honest), another group of participants were given negative personality descriptors (e.g., evil, mean), and the third group were given no information about the people in the photographs. During the first rating, there were no significant differences in ratings of attractiveness among the three groups. But after the second rating, the group given positive personality descriptors of the people in the photographs rated them the most attractive, and the group given negative personality descriptors of the people in the photographs gave the lowest ratings to the photographs. These results suggest that having a desirable personality may indeed be a factor when judging physical attractiveness. As the researchers note, "This findings indicates that human interior psychological activity is related to exterior physical feature[s], and that a human is the whole entity of psychology and physiology." But perhaps this study was too artificial. Maybe the same effects wouldn't occur for people who we know intimately. There is a series of really fascinating studies conducted by Kevin Kniffin and David Sloan Wilson, in which they address this very issue. As they note, there are evolutionary reasons why personality traits can inform our perceptions of physical attractiveness. Even though beauty is an assessment of fitness value, there is no reason why assessment of fitness needs to be purely physical. Fitness value of a potential social partner can be influenced by both physical and non-physical traits.

Kiatpongsan, S. and M. I. Norton (2014). *"How much (more) should CEOs make? A universal desire for more equal pay."* *Perspectives on Psychological Science*. <http://www.hbs.edu/faculty/Pages/item.aspx?num=47954>

(Free full text available) Do people from different countries and different backgrounds have similar preferences for how much more the rich should earn than the poor? Using survey data from 40 countries (N = 55,238), we compare respondents' estimates of the wages of people in different occupations—chief executive officers, cabinet ministers, and unskilled workers—to their ideals for what those wages should be. We show that ideal pay gaps between skilled and unskilled workers are significantly smaller than estimated pay gaps, and that there is consensus across countries, socioeconomic status, and political beliefs for ideal pay ratios. Moreover, data from 16 countries reveals that people dramatically underestimate actual pay inequality. In the United States—where underestimation was particularly pronounced—the actual pay ratio of CEOs to unskilled workers (354:1) far exceeded the estimated ratio (30:1), which in turn far exceeded the ideal ratio (7:1). In sum, respondents underestimate actual pay gaps, and their ideal pay gaps are even further from reality than those underestimates.

Kurdyak, P., A. Newman, et al. (2014). *"Impact of mindfulness-based cognitive therapy on health care utilization: A population-based controlled comparison."* *Journal of Psychosomatic Research* 77(2): 85-89.

<http://www.sciencedirect.com/science/article/pii/S0022399914002438>

Abstract Objective Elevated rates of mood and anxiety disorders among high utilizers of health care have been suggested as one driver of increased service use. We compared the impact of Mindfulness Based Cognitive Therapy (MBCT), a structured group treatment, on the rates of health care utilization with matched control participants receiving non-MBCT group therapy. Methods Using Ontario health administrative data, we created a retrospective cohort of population-based patients receiving MBCT and an age- and gender-matched (3:1) cohort of non-MBCT group therapy controls. Subjects were recruited between 2003 and 2010 and stratified according to high/low rates of primary care utilization, with the high utilization cohort being the cohort of interest. The primary outcome was a reduction in an aggregate measure of non-mental health utilization comprising Emergency Department, non-mental health primary care, and non-psychiatrist specialist visits. Results There were 10,633 MBCT recipients, 4851 (46%) of whom were high utilizers. The proportion of high utilizers was 13,274 (45%, N = 29,795) for non-MBCT group therapy controls. Among high utilizers, there was a significant reduction in non-mental health utilization among MBCT recipients compared to non-MBCT group therapy recipients (0.55 (0.21–0.89)) suggesting that for every two MBCT patients treated, there is a reduction in 1 non-mental health visit. Conclusion Among high utilizers of primary care, MBCT reduced non-mental health care utilization 1 year post-therapy compared to non-MBCT, group therapy controls. The reductions suggest that MBCT, an established treatment modality for a variety of mental illnesses, has the added benefit of reducing distress-related high health care utilization.

Mantzios, M. and J. Wilson (2014). **"Exploring mindfulness and mindfulness with self-compassion-centered interventions to assist weight loss: Theoretical considerations and preliminary results of a randomized pilot study."** *Mindfulness*: 1-12. <http://dx.doi.org/10.1007/s12671-014-0325-z>

This research explored whether developing mindfulness and self-compassion through meditation supports weight loss. The research addressed if (a) mindfulness meditation and (b) mindfulness with self-compassion Meditation (through loving kindness meditation and psycho-educational material to develop self-compassion) aid weight loss and maintenance. Sixty-three soldiers followed independent diet plans and were randomly assigned to a control group, or, one of the two meditation interventions for 5 weeks. Participants lost weight in both experimental groups, while the control group gained weight during the initial 5 weeks. Six months of subsequent, self-motivated and unguided meditative practice, revealed that only the mindfulness with self-compassion meditation group continued losing weight, while the mindfulness meditation group showed no significant weight differences. At a 1-year follow-up, both experimental groups regained some weight, while the control group paradoxically lost weight. Overall, however, the mindfulness with self-compassion meditation group lost significantly more weight than either of the two remaining groups (which did not significantly differ). The findings suggest that developing both mindfulness and self-compassion appears more promising for weight loss than developing mindfulness alone or simply dieting; nevertheless, weight maintenance requires more attention in future research.

Marazziti, D., H. S. Akiskal, et al. (2014). **"Dimorphic changes of some features of loving relationships during long-term use of antidepressants in depressed outpatients."** *Journal of Affective Disorders* 166(0): 151-155. <http://www.sciencedirect.com/science/article/pii/S0165032714002377>

The present study aimed at investigating the possible changes of some features of loving relationships during long-term treatment of depression with both selective serotonin reuptake inhibitors (SSRIs) and tricyclics (TCAs), by means of a specifically designed test, the so-called "Sex, Attachment, Love" (SALT) questionnaire. The sample was composed by 192 outpatients (123 women and 69 men, mean age±SD: 41.2±10.2 years), suffering from mild or moderate depression, according to DSM-IV-TR criteria, that were selected if they were treated with one antidepressant only for at least six months and were involved in a loving relationship. The results showed that SSRIs had a significant impact on the feelings of love and attachment towards the partner especially in men, while women taking TCAs complained of more sexual side effects than men. These data were supported also by the detection of a significant interaction between drug and sex on the "Love" and "Sex" domains. The present findings, while demonstrating a dimorphic effect of antidepressants on some component of loving relationships, need to be deepened in future studies.

Sundquist, J., A. Lilja, et al. (2014). **"Mindfulness group therapy in primary care patients with depression, anxiety and stress and adjustment disorders: Randomised controlled trial."** *Br J Psychiatry*. <http://bjp.rcpsych.org/content/early/2014/11/11/bjp.bp.114.150243.abstract>

Background Individual-based cognitive-behavioural therapy (CBT) is in short supply and expensive. Aims The aim of this randomised controlled trial (RCT) was to compare mindfulness-based group therapy with treatment as usual (primarily individual-based CBT) in primary care patients with depressive, anxiety or stress and adjustment disorders. Method This 8-week RCT (ClinicalTrials.gov ID: NCT01476371) was conducted during spring 2012 at 16 general practices in Southern Sweden. Eligible patients (aged 20-64 years) scored 10 on the Patient Health Questionnaire-9, 7 on the Hospital Anxiety and Depression Scale or 13-34 on the Montgomery-Asberg Depression Rating Scale (self-rated version). The power calculations were based on non-inferiority. In total, 215 patients were randomised. Ordinal mixed models were used for the analysis. Results For all scales and in both groups, the scores decreased significantly. There were no significant differences between the mindfulness and control groups. Conclusions Mindfulness-based group therapy was non-inferior to treatment as usual for patients with depressive, anxiety or stress and adjustment disorders.

Van Dam, N., A. Hobkirk, et al. (2014). **"How does mindfulness reduce anxiety, depression, and stress? An exploratory examination of change processes in wait-list controlled mindfulness meditation training."** *Mindfulness* 5(5): 574-588. <http://dx.doi.org/10.1007/s12671-013-0229-3>

The evidence base supporting mindfulness meditation training (MMT) as a potential intervention for anxiety, depression, and stress has grown dramatically in the last few decades. As MMT has grown in popularity, considerable variation has arisen in the way that mindfulness is conceptualized and in the trainings and interventions that have been included under this umbrella term. Increasing popularity has also raised concerns about how MMTs seem to have their effects. While previous studies have examined a wide variety of potential mechanisms, few studies have simultaneously examined these processes, potentially limiting conclusions about how MMTs might best be characterized as having their effects. The present study aimed to compare aspects of mindfulness, self-compassion, and emotion regulation, ascertaining which was most predictive of changes in anxiety, depression, and stress among 58 participants, randomly assigned on a 2:1 basis to MMT training or wait-list in a pre-/post-assessment design. The results indicated that the facets of overidentification and self-judgment (components of self-compassion) were most robustly predictive of changes in outcome variables, though mindfulness and emotion regulation also contributed. The findings suggest that mindfulness, as a process, may be more complicated than some have given credit and that attention and emotional balance may be particularly important aspects related to its effects.

van der Kolk, B. A., L. Stone, et al. (2014). **"Yoga as an adjunctive treatment for posttraumatic stress disorder: A randomized controlled trial."** *J Clin Psychiatry* 75(6): e559-565. <http://www.ncbi.nlm.nih.gov/pubmed/25004196>

BACKGROUND: More than a third of the approximately 10 million women with histories of interpersonal violence in the United States develop posttraumatic stress disorder (PTSD). Currently available treatments for this population have a high rate of incomplete response, in part because problems in affect and impulse regulation are major obstacles to resolving PTSD. This study explored the efficacy of yoga to increase affect tolerance and to decrease PTSD symptomatology. METHOD: Sixty-four women with chronic, treatment-resistant PTSD were randomly assigned to either trauma-informed yoga or supportive women's health education, each as a weekly 1-hour class for 10 weeks. Assessments were conducted at pretreatment, midtreatment, and posttreatment and included measures of DSM-IV PTSD, affect regulation, and depression. The study ran from 2008 through 2011. RESULTS: The primary outcome measure was the Clinician-Administered PTSD Scale (CAPS). At the end of the study, 16 of 31 participants (52%) in the yoga group no longer met criteria for PTSD compared to 6 of 29 (21%) in the control group ($n = 60$, $\chi^2(1) = 6.17$, $P = .013$). Both groups exhibited significant decreases on the CAPS, with the decrease falling in the large effect size range for the yoga group ($d = 1.07$) and the medium to large effect size decrease for the control group ($d = 0.66$). Both the yoga ($b = -9.21$, $t = -2.34$, $P = .02$, $d = -0.37$) and control ($b = -22.12$, $t = -3.39$, $P = .001$, $d = -0.54$) groups exhibited significant decreases from pretreatment to the midtreatment assessment. However, a significant group \times quadratic trend interaction ($d = -0.34$) showed that the pattern of change in Davidson Trauma Scale significantly differed across groups. The yoga group exhibited a significant medium effect size linear ($d = -0.52$) trend. In contrast, the control group exhibited only a significant medium effect size quadratic trend ($d = 0.46$) but did not exhibit a significant linear trend ($d = -0.29$). Thus, both groups exhibited significant decreases in PTSD symptoms during the first half of treatment, but these improvements were

maintained in the yoga group, while the control group relapsed after its initial improvement. DISCUSSION: Yoga significantly reduced PTSD symptomatology, with effect sizes comparable to well-researched psychotherapeutic and psychopharmacologic approaches. Yoga may improve the functioning of traumatized individuals by helping them to tolerate physical and sensory experiences associated with fear and helplessness and to increase emotional awareness and affect tolerance. TRIAL REGISTRATION: ClinicalTrials.gov identifier: NCT00839813.

Woo, C.-W., L. Koban, et al. (2014). "**Separate neural representations for physical pain and social rejection.**" *Nat Commun* 5. <http://dx.doi.org/10.1038/ncomms6380>

Current theories suggest that physical pain and social rejection share common neural mechanisms, largely by virtue of overlapping functional magnetic resonance imaging (fMRI) activity. Here we challenge this notion by identifying distinct multivariate fMRI patterns unique to pain and rejection. Sixty participants experience painful heat and warmth and view photos of ex-partners and friends on separate trials. fMRI pattern classifiers discriminate pain and rejection from their respective control conditions in out-of-sample individuals with 92% and 80% accuracy. The rejection classifier performs at chance on pain, and vice versa. Pain- and rejection-related representations are uncorrelated within regions thought to encode pain affect (for example, dorsal anterior cingulate) and show distinct functional connectivity with other regions in a separate resting-state data set (N=91). These findings demonstrate that separate representations underlie pain and rejection despite common fMRI activity at the gross anatomical level. Rather than co-opting pain circuitry, rejection involves distinct affective representations in humans. [See too commentary in *MedicalXpress* at <http://medicalxpress.com/news/2014-11-pain-physical-similar.html> - nRlv].

Zenner, C., S. Herrnleben-Kurz, et al. (2014). "**Mindfulness-based interventions in schools - a systematic review and meta-analysis.**" *Frontiers in Psychology* 5. http://www.frontiersin.org/Journal/Abstract.aspx?s=346&name=educational_psychology&ART_DOI=10.3389/fpsyg.2014.00603

Mindfulness programs for schools are popular. We systematically reviewed the evidence regarding the effects of school-based mindfulness interventions on psychological outcomes, using a comprehensive search strategy designed to locate both published and unpublished studies. Systematic searches in 12 databases were performed in August 2012. Further studies were identified via hand search and contact with experts. Two reviewers independently extracted the data, also selecting information about intervention programs (elements, structure etc.), feasibility, and acceptance. Twenty-four studies were identified, of which 13 were published. Nineteen studies used a controlled design. In total, 1348 students were instructed in mindfulness, with 876 serving as controls, ranging from grade 1 to 12. Overall effect sizes were Hedge's $g = 0.40$ between groups and $g = 0.41$ within groups ($p < 0.0001$). Between group effect sizes for domains were: cognitive performance $g = 0.80$, stress $g = 0.39$, resilience $g = 0.36$, (all $p < 0.05$), emotional problems $g = 0.19$ third person ratings $g = 0.25$ (both n.s.). All in all, mindfulness-based interventions in children and youths hold promise, particularly in relation to improving cognitive performance and resilience to stress. However, the diversity of study samples, variety in implementation and exercises, and wide range of instruments used require a careful and differentiated examination of data. There is great heterogeneity, many studies are underpowered, and measuring effects of Mindfulness in this setting is challenging. The field is nascent and recommendations will be provided as to how interventions and research of these interventions may proceed.