



# Research Watch

From the Counseling Program

November 2015

The seventh edition of *Research Watch* contains eight research articles covering an array of salient and timely counseling topics. Thanks to the WCU counseling graduate students who reviewed twenty-three recent articles and deemed the following studies pertinent to their future work as school and clinical mental health counselors. I thank them for their efforts and I hope you find the following reviews informative and practical.

Russ Curtis, PhD, LPC  
and Fabian Moreno  
WCU Counseling

## Contents

1. FMRI Neurofeedback Training & Depression
2. Multisystemic Therapy and Antisocial Behaviors in Youth
3. Group Art Therapy and War Veterans
4. EFT and Traumatic Memories in Abused Adolescents
5. Animal Assisted Therapy and Substance Abuse
6. Peer Support Intervention and Autistic Students
7. Yoga Interventions, Youth, and Depression
8. Family Therapy and On-line Game Addictions

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1. Virgin Young, K. D., Zotev, V., Phillips, R., Misaki, M., Yuan, H., Drevets, W. C., & Bodurka, J. (2014). Real-time FMRI neurofeedback training of amygdala activity in patients with major depressive disorder. *Plos One*, 9(2), e88785. doi:10.1371/journal.pone.0088785

**Purpose:** To utilize non-invasive techniques for isolating neural activity within the amygdala that corresponds with individuals with Major Depressive Disorder (MDD). This study explores real-time functional magnetic resonance imaging (rtfMRI), and accompanying tools (neurofeedback), so that individuals may observe their own brain activity and adapt and ultimately control their own brainwave activity. This study seeks to observe and prove that aided self-regulation, using technology and the individuals themselves, can enable brain-driven relief from the more severe levels of MDD.

**Population:** The Laureate Institute for Brain Research in Tulsa, Oklahoma performed this study on a sample of 23 adults, both male and female, ages 18–55. All of the subjects were right-handed and unmedicated. Subjects gave written consent to participate in the study. This study was considered experimental, and not medical, by the Institute. The subjects met symptom and other criteria in the Statistical Manual of Mental Disorders (DSM-IV-TR) for MDD. The subjects were recruited through advertisements in the local community. Subjects also underwent screening for other factors that may affect the MRI, such as pregnancy, drug/alcohol abuse within the last year, suicidal behaviors, exposure

to medications, and any major medical or psychological disorders. The subjects were unfamiliar with neurofeedback technology at the time of the study. Two subjects reported falling asleep during the study, therefore their results were removed from the study's findings, reducing the official sample size to 21 subjects. The subjects were assigned to receive imaging data from the left amygdala (experimental group, n=14) or the intraparietal sulcus (control group, n=7).

**Treatment Administered:** Real-time functional magnetic resonance imaging (rtfMRI) was used to measure blood-oxygen levels which fluctuate with activity in the amygdala region of the brain. This information is then presented on a screen, viewable by the subject who can then watch their own brainwave activity and learn how to affect their neuro-plasticity. In addition to the amygdala, subjects focused on individual emotional feelings, emotional processing within other regions including the insula and ventrolateral prefrontal cortex. Subjects were asked to recall autobiographical memories (AMs), as either negative or positive memories. Subjects were instructed to focus on and retrieve positive memories as they focused on two specific regions of the brain on the nf image screen. The emotional, positive signals coming from the amygdala region, and the non-emotional signals coming from the ventrolateral prefrontal cortex. Subjects were interviewed before the study to ensure high arousal responses to positive memories, taking into account most depressed individuals' impairment when recalling AMs. Subjects were instructed to recall happy or positive AMs while attempting to increase their blood-oxygen levels within the other region of interest (non-emotional ROI). This level being represented by a blue bar which the subjects could manipulate. The subjects were instructed not to exceed the target level which was assigned by the authors of the study and based on levels attempted by previous brain imaging results after a practice run before the actual study. This target level was primarily established so as not to cause added stress, fatigue and overexertion of subjects. Each section of neurotherapy contained the following: Happy Memories, Count, and Rest. The subjects were given the option of red or blue bars that corresponded to the cue "Happy." The red bar represented the actual neurofeedback signal, which fluctuated throughout the study, corresponding with blood-oxygen levels in the brain, thereby directly influencing the rtfMRI results on the screen. There was also a numerical indicator above the red bar showing changes (up or down) as related to the target level. Subjects were instructed to retrieve positive memories while simultaneously attempting to increase the level of the red bar to the level of the assigned target (the blue bar). The goal here was to retrieve memories (particularly happy ones) in the short amount of time it takes to recall a memory, any memory, without the subject having time to ruminate on those memories and forming opinions or ideas about them.

**Results:** Study showed no significant differences in age, gender, time since last medications administered or duration of individual depressive episode(s). There did, however, seem to be a significant difference between those in the experimental group and the control group where multiple (or comorbidity) diagnosis was concerned. Those subjects in the experimental group showed a higher comorbid diagnosis than the control group. Subjects in the experimental group showed increased feelings of well-being and happiness during their self-regulation of the amygdala emotional responses. The results also showed increased brain activity and decreased anxiety in the experimental group when compared to the control group in other regions (not ROIs) of the brain (left superior temporal gyrus, temporal polar cortex, and right thalamus).

**Counseling implications:** With the aid of technology (rtfMRI-nf), individuals can influence their own thoughts and regulate emotional responses using thinking techniques and brain training. This study shows the empowerment of the client to take control of their own thoughts once they are aware of their abilities (results seem to increase exponentially in some cases). Depressive thoughts, once believed to be chemical reactions beyond the realm of individual client control, can be accessed via neurofeedback imaging. Results of this study also indicate the strengthening, manipulating and increased activity in

other regions of the brain within the same process, indicating a greater need for individual-based control over brain region strengthening and regulation.

**Reviewed by:** Ethan Morris

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2. Tiernan, K., Foster, S. L., Cunningham, P. B., Brennan, P., & Whitmore, E. (2014). Predicting early positive change in multisystemic therapy with youth exhibiting antisocial behaviors. *Psychotherapy, 52*(1), 93-102.

**Purpose:** To examine if there was a reduction of antisocial behaviors in adolescents using Multisystemic Therapy (MST). The study explored whether antisocial behaviors were reduced early in treatment and if there was a continuous reduction until successful completion of MST. The researchers examined predictors that were associated with early positive change in behavior.

**Population:** One hundred and eighty-five adolescents and caregivers from a licensed MST program, located in the western United States, participated in the study. Adolescent participants were referred to the licensed MST program due to demonstrating extreme antisocial behaviors. The adolescents were primarily male (65.4%) and ranged from 12 to 17 years of age, with the average age being 15. Adolescents were required to be living with their caregiver one month prior to participating in MST. Many adolescents reported illegal activity prior to treatment, with the average number of arrests being 2.16. Over half of the adolescents had one sole caregiver ranging in age from 25 to 73, with the average age being 43. The caregiver population was primarily female (85.9%) and Caucasian (26%). Almost half of the caregivers received financial support, with 60% of all the caregivers having no more than a high school education. Forty-nine therapists with an average of 9.51 experience in MST, were obtained for the study. Eighty percent of the therapists treating minority families were Caucasian.

**Treatment Administered:** The families were treated with Multisystemic Therapy throughout the course of this study. Treatment was family-based and anti-social behaviors were addressed by focusing on each individual aspect of life that had an effect on the adolescent. Adolescents and their families participated in MST within a natural based setting (e.g., family home). Sessions varied by frequency and duration depending on the needs of the adolescent and their family. Nine standardized treatment principles were followed during treatment and goals were set by the adolescent and their family. Adolescents received additional care from other sources. Sixty-eight percent of adolescent's received treatment from facilities such as residential schools. Thirty-three percent of adolescents met with professionals, such as psychiatrists, who were not affiliated with their licensed MST program.

**Assessment Instruments:** The families were assessed five different times throughout treatment with data being analyzed from the first four. To assess the reduction in antisocial behaviors early in MST, the adolescent-reported Self-Report Delinquency Scale (SRD) and the caregiver-reported Child Behavior Checklist Externalizing Behaviors subscale were used. In addition, the Brief Symptom Inventory (BSI), the Family Adaptability and Cohesion Evaluation Scale—III (FACES-III), the Peer Delinquency Scale (PDS), The Alabama Parenting Questionnaire (APQ), and the Therapist Adherence Measure were used in the assessment process. Adolescent substance use was assessed using nine items from the Poly Drug Use subscale of the Personal Experience Inventory and three items pertaining to alcohol use. These instruments were administered at the start of treatment and 6-12 weeks into treatment. Two questions based on termination were used to assess the therapists: (a) the reason for termination; and (b) who made the decision to terminate MST.

**Results:** The researchers found a significant reduction of antisocial behaviors in adolescents when using MST. There was also a significant reduction early in MST and it was continuous until termination. Low adolescent internalizing behaviors (e.g., worrying and low self-confidence), an absence of adolescent drug use, high levels of parental monitoring, and low levels of adolescent affiliation with delinquent peers were significant predictors in early positive changes in MST. Families that saw a significant reduction early in MST were more likely to successfully complete treatment when compared to those who did not experience a positive change early in MST.

**Counseling Implications:**

- MST is an effective treatment for adolescents experiencing antisocial behaviors, but counselors should be aware of and assess any early changes in behavior throughout the treatment process.
- Counselors should consider factors early in treatment that could interfere with the outcome (e.g., drug use) and implicate more intense treatment options if necessary.
- Counselors should monitor families for weaknesses in parental monitoring and provide interventions if necessary.

**Reviewed by:** Adrienne Stover

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3. Kopytin, A. & Lebedev, A. (2013). Humor, self-attitude, emotions, and cognitions in group art therapy with war veterans. *Art Therapy: Journal of the American Art Therapy Association*, 30(1), 20-29.

**Purpose:** To measure the therapeutic effects of brief group art therapy (AT) in a Russian psychotherapy unit for war veterans. The study focused on the patients' use of humor and its connection with creativity, self-image, cognition, and emotions. They assessed the effects of art therapy against occupational therapy (OT) with various instruments before and after one month of treatment. They tested their hypotheses that group AT can be effectively used with war veterans to mitigate symptoms and improve personality functioning and quality of life; humor is a crucial trait of veterans, which may relate to coping mechanisms and identification with “male culture”; humor is therapeutically linked to creative and cognitive resources of veterans.

**Population:** A total of 112 male and female patients, majority of whom served in local military campaigns, ranging in age from 25-53, where most were diagnosed with stress-related and somatoform disorders, affective disorders, and organic disorders. The main presenting problem was poor mood associated with anxiety, irritation, relationship troubles, low impulse control, lack of interest in life, fatigue, poor sleep, and discomfort and pain in the body. Those with severe mental disorders or patients above the age of 55 were excluded. The department chief randomly assigned participants to group 1, who received experimental AT, and group 2, the control group who received OT, the standard treatment. The mean age in group 1 was 38 and 35 in group 2.

**Description of assessment method:** To assess symptomatic improvement, Kopytin and Lebedev used Symptomatic Checklists (SCL-90), Questionnaire of Depressive Conditions (QDC), and the Integrative Anxiety Test (IAT). The QDC measures depressive symptoms and distinguishing endogenous and neurotic depression. The IAT indexes and measures for personality and situational anxiety, with a scale for both types, such as Emotional Discomfort, Phobic Component, Perception of Perspectives, Social Phobic Reactions. To assess changes in personality functioning, self-perception, cognitive skills, and quality of life, the authors used the self-report General Condition-Activity-Mood Test (GCAMT), the Silver Drawing Test (SDT) and Draw A Story assessment (DAS), and the World Health Organization Quality of Life Questionnaire (WHOQLQ).

**Treatments:** Group sessions usually comprised 5 to 8 patients. Group 1 participated in 2.5 hour group AT sessions three times per week for 12 to 14 sessions led by Lebedev, a trained art therapist and psychiatrist. Art-based activities were combined with appropriate stages of treatment and group dynamics designed for different therapeutic aims. Each session included warm-up activities, a main art-based activity, discussion, and closure. Themes and drawing tasks were presented to cultivate mindfulness, interpersonal skills, enhanced self-perception including their position in a group, better perception of their attitude to others, their disease, and resources, and improved perspective on their present and past conditions. Both groups participated in the SDT and DAS.

**Results:** After one month, there was a statistically significant difference between the groups' SCL-90 scores on the Depression Scale and the Hostility Scale, with the AT group reporting less symptoms, showing significance in favor of AT. The WHOQLQ results showed significantly higher scores by the AT group on the General Quality of Life and Health Index. The DAS and SDT assessments showed a more significant increase in scores by the AT group on the Emotional Content and Self-Image scales as compared to the OT group. Higher scores by the AT group on three cognitive scales indicated improved ability to select, combine ideas, and represent a story. This supports the idea that artistic activity and image formation contribute to cognition, self-esteem, and creative problem solving.

The number of humorous responses increased for both groups with greater increase in the AT group, but the correlation between humorous responses and overall therapeutic dynamics was unclear and needs further research. To test whether humor in the drawings correlate with participants' creative and cognitive abilities, they compared a subset of 50 participant drawings having humorous responses with 50 non-humorous participant drawings using the Ability to Represent scale, finding the humorous sets' scoring significantly higher than the non-humorous sets. The SDT and DAS Drawing from Imagination results indicated a connection between humorous responses and the participants' creative and cognitive abilities.

Humorous responses were evident in group culture, participants' cognition, and their emotional spheres. The authors note that when image formation occurs, emotional and cognitive processes work to integrate experience with information; they support previous research on how humor is a coping tool for stress and that it fosters cognitive restructuring of complex information. Humor was used to increase self-control while simultaneously allowing for more secure emotional self-expression in the group. The study concluded that art therapy does not necessarily create a sense of humor as much as it can enable free expression of humor by veterans through art and verbal communication.

**Counseling Implications:** Counselors may consider using group AT for veterans and other populations with similar stress-related and somatoform disorders. Use of brief group AT may be part of a treatment program working toward improving symptomatic status, personality functioning, cognition, creativity, and quality of life. Humor is a therapeutic factor to consider for certain populations such as veterans, or groups dealing with stress and/or the need to process and restructure complex information, such as people recovering from trauma. AT can be considered for treatment programs that aim to improve cognition, self-esteem, and creative problem solving. For further research, more work is needed on other types of populations including people from other cultures, those suffering from PTSD, populations with severe mental disorders, and those over the age of 55.

**Reviewed by:** Minori Hinds

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4. Church, D., Pina, O., Reategui, C., Brooks, A. (2012). Single-session reduction of the intensity of traumatic memories in abused adolescents after EFT: A randomized controlled pilot study. *Traumatology, 18* (3), 73-79.

**Purpose:** To examine the effectiveness of using Emotional Freedom Technique (EFT), in reducing the intensity of traumatic memory in adolescent males that have a history of abuse and neglect.

**Population:** 16 Males, ages 12-17, with an average age of 13.9, confined to the St. Joseph's House, a residential treatment facility in Trujillo, Peru. All residents of this institution have been sent to this establishment by a Judge through a court-order due to parental/caretaker history of abuse: including psychological, physical, sexual, abandonment, and/or neglect. Inclusion criteria: male; ability to understand the Impact of Events Scale (IES), ages 12-17, and history of physical, psychological, sexual abuse, parental abandonment and neglect. Exclusion criteria: organic or neurological conditions; prior clinical psychiatric diagnoses, concurrent pharmacological treatment. Thirty-five participants were assessed and did not meet criteria; the 16 who did were enrolled in this study.

**Treatment administered:** The investigators assigned the 16 participants into two random groups of eight, one experimental group, and one control group. Baseline was assessed for both groups. The experimental group received a 1-h single session of EFT, which included a supplemental procedure called the nine gamut technique, intended for bilateral stimulation of the brain. Control participants did not receive treatment. Both groups returned in one month for a follow-up assessment. Due to the possibility of re-traumatization by participants during the recall of emotionally triggering memories, the investigators used an experimental design that was minimally invasive, with only two data points: pre-test and 30-day post-test. Assessments and EFT treatment took place in the same location at the institution for both groups, by an investigator certified in EFT and licensed by ACEP, the Association for Comprehensive Energy Psychology. Data was scored offsite, blind, and by a biostatistician. The investigator providing the intervention asked each child in the experimental group to recall their most troubling incident of abuse. The movie technique of EFT was used, where the participant imagines the incident as though it were a movie with a start, finish, and end. The participant then gives the movie a title. The participant will then associate the movie with a subjective distress level (SUD). EFT is then performed and the SUD level that the participant rated is reassessed while recalling the movie. If the SUD has not reduced, EFT is then repeated until the participant's SUD level is at or near zero. The movie technique is designed to help the participant avoid generalization of distress to other traumatic incidents and to focus on one specific event. The purpose of the movie title is to provide the participant with a brief reminder phrase to keep the identified incident in memory while the acupressure points are being tapped on the body. Participants were assessed using the IES scale. The IES scale is then subdivided into an Intrusive Symptoms Scale and an Avoidance Symptoms Scale, which also yields a total score. A score of 26 - 42 (moderate) indicates that the event has had a powerful impact on the participant, scores 43 or higher indicate that this impact could interfere with an individual's ability to function. A score of 27 or more indicates a 75% probability of a PTSD diagnosis along with a number of PTSD symptoms.

**Results:** All participants scored in the moderate-clinical range on the IES total. Participant IES scores ranged between 27 and 42, with an average score of 34.2 (SD = 5.4). Baseline levels between groups on the IES total were not found to be statistically different. Post-test administration of the IES occurred 1 month after pretest. In the experimental group the initial SUD level ranged from 7 - 9 with an average of 8.25 (SD = .71). The number of applications of EFT treatment per participant ranged from 2 to 4, with an average of 2.87 applications (SD = .41). The final SUD levels ranging between 0-1 with an average of .25 (SD = .46). A repeated measures general linear model was conducted to examine change

over time in the IES total and subscale scores between the two groups. Post-hoc Tukey tests were conducted on significant findings. The time by group interaction was statistically significant ( $p < .001$ ) for the IES variables. According to the results of this study, the experimental group demonstrated a statistically significant decrease in distress on the IES total and both subscales following the intervention. Additionally, the experimental group's post-test was significantly lower than the post-test for the control group on each of the IES variables. The control group did not show any difference between the pre-test and the post-test. All participants in the control group still tested within the moderate-clinical range on the IES at post-test, scores ranging from 27-40, whereas none of the participants in the experimental group scored in the clinical range at post-test, scores ranging from 0-7. These results are both statistically and clinically significant. This study supports that specific elements of PTSD such as intrusive memories or avoidance, may be treated successfully. Furthermore, this study also suggests that EFT may be an effective treatment for trauma in juveniles.

### **Counseling implications:**

- Results of this study indicate that EFT may be used as an effective treatment for trauma symptoms in juveniles.
- Considering the minimum investment of time spent in therapy with relation to the overall success in EFT in these cases, it would be beneficial to apply EFT on a more geographically and ethnically diverse population for a more empirical investigation.
- Repetition of this study to include the 35 adolescents who did not meet the initial inclusion criteria due to; organic or neurological conditions, prior clinical psychiatric diagnoses, and current pharmacological treatment, would be beneficial for a wider sample representation.
- The investigators of this study recommended that the control group also receive EFT treatment due to the normalized IES scores within the experimental group.
- This study defines EFT as a simple method involving the participant recalling a memory of a traumatic event, pairing it with a statement of self-acceptance, while tapping on specific acupressure points. Studies of EFT have shown this method to reduce a wide range of psychological disorders including phobias, anxiety, and depression.
- In review of EFT and similar therapies such as Eye Movement Desensitization and Reprocessing (EMDR), findings report that these modalities may regulate physiology in a systematic manner.
- Church, Pina, Reategui, and Brooks (2012) suggest, that with treatment of EFT and other modalities of Energy Psychology, participants' memories are not reinstated in their existing form, instead they are reconsolidated without triggering hyperarousal of the amygdala. These findings have a huge impact on the future of treating trauma in counseling.

**Reviewed by:** Teva Hite

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5. Wesley, M. C., Minatrea, N. B., & Watson, J. C. (2009). Animal-assisted therapy in the treatment of substance dependence. *Anthrozoos*, 22(2), 137-148. doi:10.2752/175303709X434167

**Purpose:** To assess animal-assisted therapy (AAT) in context of what effect it had on individuals in group therapy for substance abuse. The study looked at the opinion the participants in groups had towards their relationship with the health care professional when a therapy dog was present against the opinions groups had towards their relationship without the presence of a therapy dog.

**Population:** Wesley and Minatrea obtained a sample size of 231 individuals with a limit of group sessions set to 26. 135 of the participants were in the experimental group, while the remaining 96 were in the control group. Of the sample size, approximately 49% were men and 50% were women. Over half

of the group was under the age of 25 years old, while the rest were under 55 years old. Approximately 90% of the sample were Caucasian, and 10% were African Americans. All of the participants were at a residential treatment facility seeking treatment for substance dependency. Majority of the participants were court ordered for treatment or social service involvement, while the remaining individuals were there due to probation, parole, or drug court involvement. The types of substance abuse that the individuals experienced include alcohol, marijuana, methamphetamine, heroin, cocaine, Rx opiates, benzodiazepines, and hallucinogens; however, about 72% abused more than one substance. The therapist that conducted the sessions was a doctoral level therapist, as well as the handler and owner of the certified therapy dog. The therapy dog and owner, prior to the study, had 157 service hours put into work with incorporating AAT into counseling.

**Treatment Administered:** Randomization of the control and experimental groups was done by drawing names out of a hat. Both the experimental and controlled group had been split into fourteen groups. With every group session lasting about an hour, including a 15-minute break for the therapist, both groups would fill out the Helping Alliance Questionnaire (HAQ-II). The therapist used cognitive-behavioral-therapy for both groups. The main focus of the AAT was on an individual basis of treatment goals, and the assisting of meeting those goals. When appropriate or needed, the therapy dog initiated provision of tissues to participants who either were crying or had sneezed. The dog provided nonjudgmental care and made herself naturally available to everyone in the group, going to one individual after the other for physical touch. There were an additional 30 skills that the dog had performed, which the therapist considered to be psycho-educational tools to be used within the group.

**Results:** The study indicated that AAT can be significant in the reports of having a positive view towards the relationship between the counselor and client for most individuals. Participants that were men, court ordered clients, polysubstance dependent clients, cannabis dependent clients, and methamphetamine dependent clients and received the additional AAT during group therapy had significantly higher ratings, provided through the HAQ-II, when compared those that did not receive AAT during group therapy.

#### **Counseling implications:**

- Counselors should consider AAT to assist in the counselor-client relationship, primarily because that is a major basis in helping with the recovery success for those who are seeking substance dependence treatment.
- AAT should be explored more in terms of group therapy, and possibly individual therapy in the affect that it may have an increased recovery or healing process for individuals.

**Reviewed by:** Fabian Moreno

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6. Mcurdy, E. E., & Cole, C. L. (2013). Use of peer support intervention for promoting academic engagement of students with autism in general education settings. *Journal of Autism Development Disorder*, 44, 883-893.

**Purpose:** To explore the effects of peer intervention strategies in helping students with autism spectrum disorder (ASD) increase focus and social skills within a regular educational classroom setting. The study furthered the work of Arceneaux and Murdock's (1997) research of peer support intervention with disruptive, off-task behavior of students with autism. The experiment tested three students over the course of three weeks. The goal was to help both students with ASD and their teachers during the learning process.

**Population:** McCurdy and Cole obtained parental consent to work with three young males identified with ASD; all of whom reported to have high rates of off-task behavior. Behaviors included lying on the floor, taping pencils on desks, engaging in self-stimulating behaviors at desks, walking around the room, and drawing, all during note-taking time. All subjects came from elementary classrooms within an urban school district. The first subject was an 8-year-old male, with an average intelligence quotient (IQ), able to use verbal communication, and required minimal educational accommodations. The second was a 7-year-old male, with an average IQ, who did not require any accommodations for completing school work. The final subject, was an 11-year-old male, also with an average IQ, but received pull out support in both math and reading. The race and socio-economic status is unknown. None of the subjects were reported to have positive relationships with peers.

**Treatment Administered:** Each subject was assigned a peer support chosen by their teacher. Off-task behavior was observed and recorded for 20 min each day, by trained graduate students, using the Behavioral Observation of School Students (B.O.S.S.). Observers used a 15-s partial-interval procedure and recorded off-task behavior of typical peers as well, every 5<sup>th</sup> interval using the same 15-s interval procedure. A second observer was also assigned to observe 25% of the sessions for the purpose of determining Inter-observer Agreement (IOA). The second dependent variable was the Peer Opinion Questionnaire that assessed peers' perspectives of the subjects. A private interview with each peer support was also conducted pre and post treatment using a modified version of the Children's Intervention Rating Profile (CIRP) on a 6-point likert scale. Teachers were also given a modified version of the Intervention Rating Profile-15 (IRP-15), to assess teachers' acceptability of the intervention. Typical classroom procedures occurred throughout the study, except for the allowance of peer supporters to sit beside the subjects. Peer supporters were trained in how to identify off-task behaviors and how to give appropriate, non-verbal feedback to the subjects (ex: thumbs up for praise or thumbs down to discourage behavior). At the end of each session, the peer supporter would debrief with the subject to offer encouragement and support for appropriate classroom behavior.

**Results:** Following the implementation of peer support, a decreasing trend of off task behavior was seen in all three subjects. Change in behavior occurred immediately after peer intervention and maintained throughout the study. Student 1 saw a decrease in off-task behavior from a beginning baseline of 68.74% to a mean of 13.02% by the end of the study. Student 2 saw a decrease from 73.18% in the beginning of the study, to 15% after the intervention. The final student went from a baseline score of 75.39% to a mean of 42.71%. These results are illustrated in the data reported by observers as well as in the teacher and student survey results. Peer support intervention was effective in helping students with ASD have fewer disruptions in class.

**Counseling implications:**

- School counselors can use this intervention to help students with ASD better adapt and focus in a general education classroom
- Students with ASD can benefit both socially, as well as academically, with the help of peer support
- Other students and teachers in the classroom can benefit from less disruption
- Minimal training and funding was required of peer supporters so teachers and counselors could easily implement the treatment
- It would be beneficial to broaden the study to include more participants of various levels and backgrounds, as well as extend the amount of time the students were observed in class

Reviewed by Wendy Segars

7. Woolery A, Myers H, Sternlieb B, Zeltzer L. 2004. A yoga intervention for young adults with elevated symptoms of depression. *Alternative Therapies in Health and Medicine*, 10(2), 60-63.

**Purpose:** To test the efficacy of physical yoga (“asana”) on depression and anxiety. The study compared samples experiencing bi-weekly yoga classes against a non-practicing control group for five weeks. Cortisol hormonal levels were also tested.

**Population:** A sample of 28 volunteers were selected after the screening process. The age level ranged from 18 to 29, and was 79% female and 82% were collegiate students. The screening process removed those with familiarity with yoga, smokers, those receiving psychiatric treatment, and those with current substance abuse problems. Thirteen were randomly assigned to the yoga group, and 15 to the wait-listed control group. During the five weeks three participants dropped out of the yoga group and two from the control group. All participants were given a \$30 gift certificate for their participation.

**Treatment Administered:** The yoga group participated in bi-weekly yoga classes taught in the Iyengar tradition. Classes were taught in the morning, and participants were not encouraged to practice at home. Classes emphasized postures thought to combat depression like backbends and inversions. Control group and yoga group had three data collection meetings during the student; pre-test, mid-course, and post-test. Mood was self-reported by use of: 1) the Beck Depression Index (BDI), 2) the Spielberger Trait Anxiety Inventory, and 3) the Profile of Mood States (POMS). Depression and mood were measured before, during, and post-yoga intervention, while anxiety was measured pre and post intervention.

**Results:** There were no significant pre-test differences between the two groups. Comparisons of baseline depression levels between groups showed that the yoga intervention group had a statistically significant change whereas the control group remained statistically static. Notably, the yoga intervention group’s BDI score went from 12.77 to 4.50 at the study’s midpoint and dropped further to 3.90 by the study’s end. Similar trends were found in self-reported measures of trait anxiety. Pearson analysis revealed that the change in depression was not significantly related to the change in anxiety ( $r=.30$ ,  $p=.41$ ). Analysis of POMS data revealed significant pre to post-test reductions in depression-dejection, tension-anxiety, anger-hostility, fatigue-inertia, confusion-bewilderment, and total mood disturbance. Cortisol levels were also affected. At the conclusion of the study, participants in the yoga group exhibited a trend of increased morning cortisol levels. The researchers noted an association of higher morning cortisol levels with improved esteem, hardiness, and tenacity, as well as decreased levels of nervousness, depression, and emotional lability.

### **Counseling Implications:**

Yoga appears to have therapeutic use for combatting a range of psychiatric symptoms, including depression, anxiety, anger, fatigue, and mood disturbance.

Just as exercise has been linked with improvements in mood, the physical postures of yoga may offer a profound tool for those with mild mood symptoms or those seeking a preventative tool or skill. This particular intervention resulted in the learning of fairly difficult poses, and may have offered positive feelings of mastery.

This study has its limitations, namely its small sample size. Furthermore, a control group that was offered an intervention or that wasn’t potentially being affected by its wait-list status would be helpful. Further studies should work on differentiating between the effects of yoga and other exercise forms.

**Reviewed by:** Theo Saslow

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8. Han, D. H., Kim, S. M., Lee, Y. S., & Renshaw, P. F. (2012). The effect of family therapy on the changes of the severity of on-line game play and brain activity in adolescents with on-line game addiction. *Psychiatry Research: Neuroimaging*, 202(2), 126-131.  
Doi:10.1016/j.psychresns.2012.02.011

**Purpose of Study:** To see if brief exposure to family therapy would create changes in brain activity related to affection and gaming cues in adolescents with on-line gaming addiction from dysfunctional families. This study used fMRI brain imaging to assess the changes in brain activity pre and post family therapy.

**Population:** Fifteen adolescents were recruited for the study who met the criteria for problematic on-line game playing, which included game playing greater than 4 hours a day and 30 hours a week, and a score greater than 50 on the Young Internet Addiction Scale (YIAS). The adolescents and their families also met the criteria for moderate to severe dysfunctional family, which included a score of less than 3 on the Family Adaptability, Partnership, Growth, Affection, and Resolve scores (FAPGAR) and an adaptability score of less than 24 and a cohesion score of less than 40 on the Family Adaptability and Cohesion Evaluation scale (FACES III). Fifteen adolescents were also recruited who did not show problematic gaming activity and came from functional families, which acted as the healthy comparison group.

**Assessment:** Before the first session of family therapy and after the conclusion of family therapy, the adolescents from both the problematic gaming group and the healthy comparison group were given fMRI brain scans, which assessed brain activity when shown scenes of parental affection and scenes from on-line games. The pre-therapy brain scans from the adolescents with problematic gaming activity from dysfunctional families showed decreased activity in certain areas of the brain in relation to images depicting parental affection, and increased activity in certain areas of the brain after seeing scenes from the on-line games they played the most, as compared to the healthy comparison group. Statistical analysis was used to map changes in the pre and post brain scans as well as changes in on-line game playing time, YIAS and FAPGAR scores.

**Treatment Administered:** The adolescents and their families came to the Chung Ang University Hospital over the course of three weeks, which included five sessions of family therapy, as well as two sessions (pre and post therapy) to evaluate brain activity and YIAS and FAPGAR scores. The five sessions of family therapy focused on such factors as assessing family function, increasing family cohesion, addressing problem behaviors, and creating a plan to increase family cohesion such as playing a sport, playing board games, learning a new language, taking a class together or going on an outing together as a family. The families were asked to engage in these activities for one hour a day, four days a week. Additionally, the family members met with a psychiatrist to make a plan for continued cohesion and improved family dynamics. The healthy comparison group received no treatment during this time.

**Results:** After the brief family therapy, the FAPGAR scores for the problematic gaming group increased while the YIAS and time online decreased (negative correlation). Furthermore, post family therapy fMRI brain scans showed an increase in brain activity in areas related to affection, and a decrease in brain activity in areas related to on-line gaming and addiction. These results suggest that the brain may be influenced by increased attention from the parents and increased family cohesion, and that family therapy with the focus of increased cohesion may be an effective treatment for on-line gaming addiction.

**Limitations:** This study used a small sample size and did not include a follow-up study to determine how long the effects of family therapy affected family cohesion or on-line gaming use. They also did not account for the possibility that the child's on-line gaming addiction was the result of something other than lack of cohesion within the family.

**Counseling Implications:**

- Evaluating for dysfunctional family dynamics and treatment for family dysfunction by brief family therapy and increased family cohesion could be an effective treatment for on-line gaming addiction and possibly other forms of internet or screen addiction.
- Family dysfunction has been linked to improve other forms of addiction, and could be useful for treating adolescent smoking, alcohol, and drug abuse.
- The study also discussed how on-line gaming releases dopamine in certain areas of the brain, while strong family cohesion releases dopamine in other areas of the brain. One theory is that those who have on-line gaming addiction may be seeking dopamine releases not otherwise found because of weak family cohesion. As a counselor, having this understanding can create more empathy and tools for working with adolescents with on-line addictions.

**Reviewed by:** Susan Tinsley Daily

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