
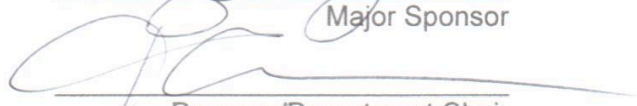


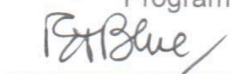
The Positive Effects of Art Therapy and Its Affect on the Brain

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Abstract

Art therapy involves most of ones, five sense. It involves, vision, touch, smell, and hearing. In addition it involves interactions with others and muscle movement. These things make art therapy very different from other types of therapy such as psychotherapy. This creates different resulting outcomes and also causes different neurological responses in the brain than other types of therapy. This study will show how art therapy differs from other therapies and exemplify affects of art therapy outcomes.

Introduction

The human brain is a mysterious organ that science is still struggling to fully understand. According to Charles Darwin in the Origin of Species the brain is the most variable and faster evolving human organ thus allowing our species to ever evolve so rapidly. Darwin goes on to explain that variability is one of the chief factors in evolution, thus variability has the capacity to bring about huge changes that may enrich cultures and promote the evolution of human societies. This all may come at a toll though. With variable changes may come injustices and those going outside of the norms are often judge to be deviant and maybe persecuted. Art is able to break through this addressing these issues in the safety of its medium be it literature, visual, performance, or music. Due to this art has been used throughout time as a way to record cultures' struggles and their evolutions. It has also been used as a way for people to cope with personal and societal pressures throughout the variable changes.

The first record of human's utilizing art as a means to express themselves was over 40,000 years ago in the Aurignacian period. Since humans began creating art it has been recognized as a means for communication, self-expression, educational tool, and to promote healing. Despite this it wasn't until the 1940's that the therapeutic use of art was defined and developed into a distinct discipline. Finally, in the mid 20th century art started to become medically recognized for its healing properties thus hospitals and mental health facilities began including art therapy programs (www.arttherapyjournal.org). So what is art therapy? The American Art Therapy Association (AATA) defines it as a form of psychotherapy that utilizes artistic creation to promote growth and healing in those experiencing trauma or illness, seeking personal

development, or struggling to deal with the day-to-day act of living. Through the process of creating art people are able to develop skills to increase their cognitive ability, increase their self awareness, help them cope with their negative coping symptoms, and/or limitations imposed by a disability or a disease. Art therapy's primary purpose helping people heal mentally, emotionally, and physically while they build up coping skills to promote on going wellbeing (www.arttherapyjournal.org).

Despite art being one of the oldest forms of therapy science continues to question how it works as an effective therapeutic tool. Science and medicine often question whether or not art is in deed a reliable and viable therapeutic tool. There have been many studies examining this. According to Gussak (2006) inmates who participated in art therapy groups showed a decrease in depressive symptoms, elevated moods, greater acceptance of others and their environment, improved interactions with peers and staff, improved compliance and behaviors, along with increased self-worth and identity. In another study Heenan (2006) found the results of art therapy to not only increase self-esteem and self-confidence but to provide a safe space for the participants to reflect on and begin acknowledging and addressing their mental health issues. In addition participants in this study described the art therapy program as a catalyst for them to begin engagement in a wider range of services and activities and described feeling less vulnerable and less negative (Heenan, 2006). In yet another study conducted by Rentz (2002) on patients with dementia 83 percent of the art therapy participants were able to sustain attention during the artistic therapeutic activities for 30 to 45 minutes. Considering the fact that most individual with dementia have great difficulty maintaining attention and concentration for any period of time this was documented as a large success

(Rentz2002). On a more personable note one person from this study whom normally struggled with speech at all was able to state during a session “In here I feel like a person again” (Rentz, 2002). This not only shows there were findings of increased cognitive functioning during artist therapeutic activities but increased self-esteem which was noted in previous studies mentioned as well. A study conducted by Rusted, Sheppard, and Waller (2006) showed a slow steady linear upward trajectory of mental acuity, personal sociability, calmness, and physical calmness in their art therapy patients. This study also showed evidence supporting the fact that participants in the art therapy group displayed increased recognition of group members outside of the sessions and improvement in interpersonal communication amongst peers and amongst themselves and staff (Rusted, Sheppard, Waller, 2006). In addition they found that after the end of the art therapy program results of testing showed increased depression scores (Rusted, Sheppard, Waller, 2006).

Modern day neuroimaging techniques, such as fPET and fMRI, have expanded understanding of the different structures and functions of the brain involved in information processing. In a very brief overview the frontal lobe has been found responsible for such functions as movement, intelligence, behavior, and memory; the temporal lobe has been found to process such functions as speech, behavior, emotions, memory, hearing, and vision; the parietal lobe has been found to be responsible in such processes as intelligence, reasoning, language, sensation, and reading; the occipital lobe responsible for vision, the cerebellum responsible for balance, coordination, and fine motor skills; and finally the brain stem which manages breathing, blood pressure, heartbeat, and swallowing (Gazzaniga, Ivry, & Mangun, 2014)r

. All of those areas of the brain are accessed/and or affected during are therapy.

Art therapy revolves around the creation of artistic products during each session. This creative process engages almost all of the senses, touch, vision, and hearing (typically not taste). An example of this would be the feel & smell of the paint and the sound of the brush as it applies it on the canvas, all along seeing the piece come together. The work is then processed by the client with the therapist for it's affect, meaning, and associations through cognitive and verbal methods of therapy. The entire process involves various motor, somatosensory, visual, memory, emotional, and cognitive aspects of processing information thus engaging many areas of the brain. In addition, art is one of the oldest forms of therapy but yet many still struggle to understand why it is such an effective therapeutic tool. Science and medicine often question whether or not art is indeed a reliable and viable therapeutic tool.

The creative process involves motor skills, movement. This movement itself can be healing. It can be used itself as a reconstructioning agent and to therapeutically release energy and emotions through the creative process. It works on fine motor skills and visual/special perception thus very useful in rehabilitation of people whom suffered injuries and or various other issues. Here is an example of how art can be rehabilitative looking at persons with Alzheimer's, schizophrenia, and who've experienced a stroke. The process of making art stimulates motor memories including those of sequential motor actions related to the basal ganglia. This sensory stimulation cab bypass impaired areas in the brain to help access and reconstruct memories. The formation of such episodic memories involving the connection between the basal ganglia and the hippocampus can provide a bridge between the motor cortex of the brain and the somatosensory cortex thus

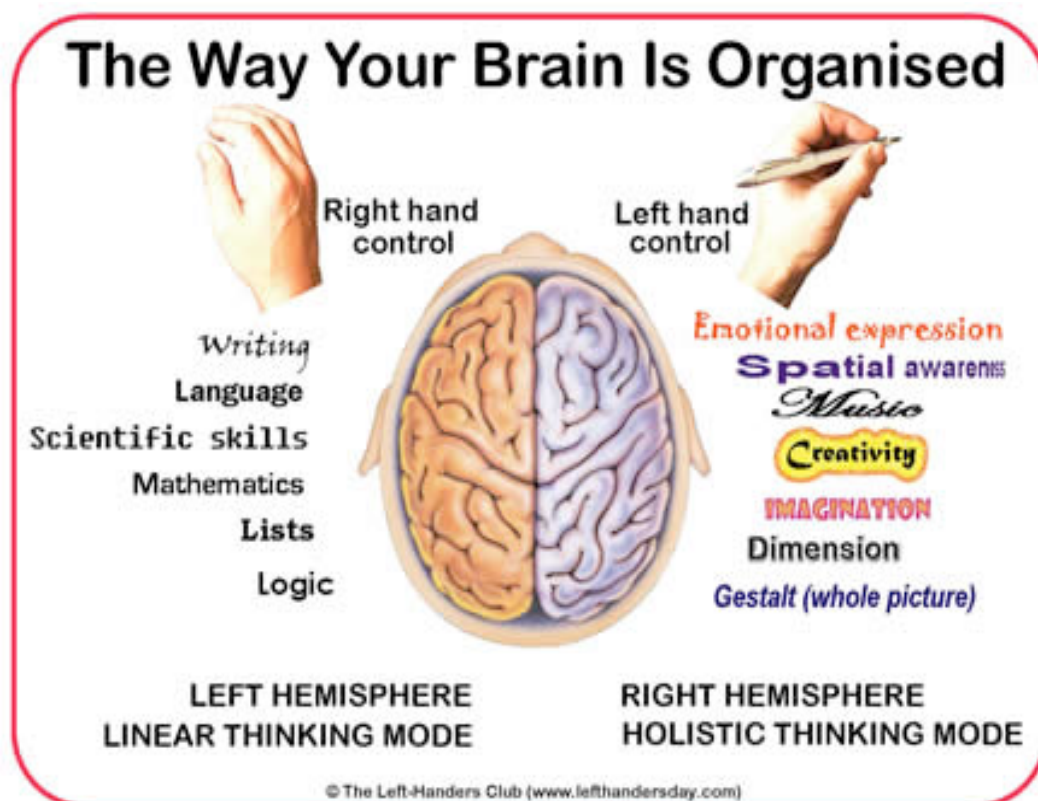
reconstructing an impaired pathway (Lusebrink, 2004). Studies suggest that art therapy interventions mainly benefit in the following ways: (a) reconstitution and rehabilitation of physical impairments; (b) promotion of mental, emotional, and physical healing; (c) enhancement of cognitive and emotional growth (Lusebrink, 2004).

Utilizing art in the therapeutic process has shown time and time again to be beneficial to successful treatment. In children whom do not have the cognitive and emotional capacity to verbalize in psychotherapy (talk therapy) art therapy and play therapy have proven to be successful form of treatment allowing the child to address and verbalize their emotions in a safe way they can process. Another population that has shown to greatly benefit from art therapy is senior citizens. As one ages they face a staggering amounts of life changes often associated with loss; loss of friends/family, loss of independence, loss of bodily functions and so forth. Art therapy has shown to be a means of self-expression that allows introspection, building on their strength and life experiences (Stephenson, 2006). It allows them to engage with their environment in new, positive ways and access their memories (Stephenson, 2006).

When compared with other types of therapy such as recreational therapy in a study by Rusted, Sheppard, and Waller (2006) art therapy was shown to have greater longer-term positive results with increased positive engagement as artistic therapeutic sessions the more sessions attended. Recreational therapy was marked with less sustainable results and less positive engagement as the participant engaged in more sessions.

Split Brain Evidence:

A study by McNamee (2004) suggest in psychotherapy clients may not be as honest with themselves and/or others as they are in art therapy. McNamee (2004) comes to this conclusion through working with epilepsy patients with whom their corpus callosum has been split. The corpus callosum is the grouping of nerves that connects the left and right hemisphere of the brain (McNamee, 2004). The left hemisphere is responsible for things such as language, speech, cognitive problem solving, and the right hemisphere is responsible for tasks such as visual /motor activities and responses along with creativity (McNamee, 2004).

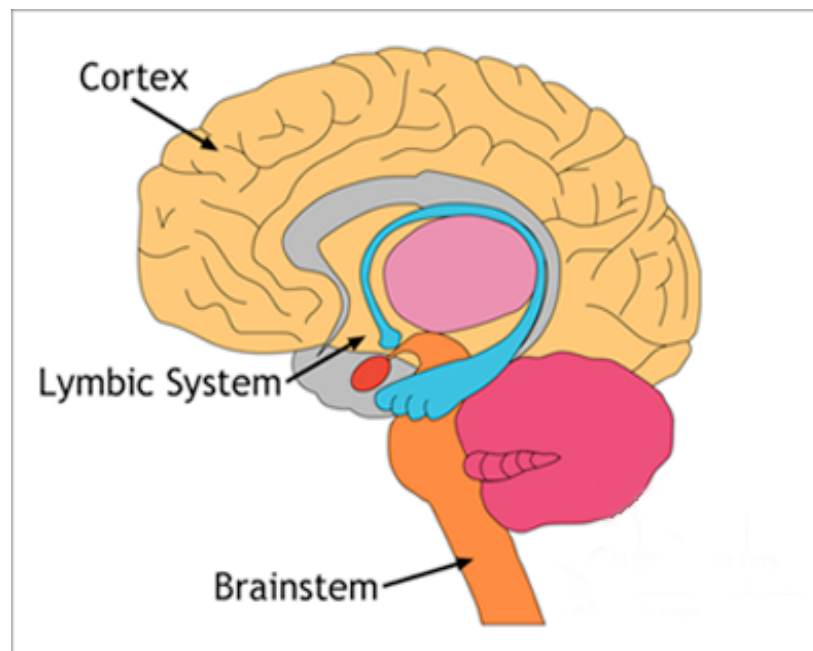


(lefthandersday.com, 1999-2013)

In his study patients were shown pictures related to objectives and asked to pick out the correct picture to match the object. When working with their left hemisphere clients would make up an answer linking the object to the picture if they could not determine it. The conclusion was that this is due to the left hemisphere's need to problem solve. When this was repeated with clients functioning utilizing their right hemisphere if they not know the relation between the objects they simply stated that. Although creative, the right hemisphere is not for problem solving hence there was not a need to come up with an answer (McNamee, 2004). In addition McNamee noticed that when recalling instances from memory clients working with their left hemisphere filled in blanks in their memory with reasoning they came up with on their own while clients working with their right hemisphere simply noted the gaps in their memories (McNamee, 2004). Both hemispheres were capable of stating they did not know something in both scenarios however this was not what was shown to happen in left hemisphere clients as it did the right hemisphere clients. Not only that but the clients did not recognize they were making up responses. McNamee (2004) went on to name the left hemisphere the "spin doctor" and based on his findings it shows that talk therapy maybe influenced by the "spin doctor" whether or not the person intends what they dialog about to be or not. This "spin doctor" also accounts for people's inaccuracy in recalling memories and addressing them in therapy as well. This "spin doctor" fills in the blanks for us, justifies actions, and justifies lies to self and others as a way to problem solve and reduces anxiety over the unknown and/or reality not ready to be faced. It unconsciously helps to create emotional homeostasis. McNamee (2004) concluded the creative but interpreterless right hemisphere of the brain is more accurate in reporting and expression than the problem

solving, linguistic left hemisphere of the brain. Thus showing that art therapy which accesses primarily the right hemisphere of the brain would be less prone to the “spin doctor” affect and be an more honest look at ones experiences and emotions to address them.

Thus far one can conclude from this information presented that art therapy provides a safe, empowering scenario through which clients are able to explore themselves/emotions creating affects such as increased self –esteem and elevated mood. It allows for topics to be addressed safely and in a capacity the client can understand that is removed from the “spin doctor” influences of the linguistic left hemisphere of the brain. The brain is broken up into more than simply the left and the right hemispheres though.



(McClelland, 2013)

So in other words the “spin doctor” affect comes from the left hemisphere of the cerebral cortex. Art has shown to be too abstract to need the fill in the blanks (Zeki, 2001) that are created by the created by the spin doctor affect thus are therapy more truthful responses than those in talk therapy yes, but there is more to it than that.

There are two main variations in which any type of therapy takes place. They are as follows:

1. Top down processing is when the brain starts its thought process with the cerebral cortex and moves then down into the limbic system and last the brainstem.
2. Bottom up processing is when the brain starts its thought process with the brainstem moving up through the limbic system and ending in the cerebral cortex.

(Gazzaniga, Ivry & Mangun, 2014)

Top-Down-vs-Bottom-Up Processing:

Keeping these two variations in mind further examination of psychotherapy versus art therapy shall be examined. Psychotherapy is centered around top down processing. This results in a vast majority of the neurological functioning that takes place during psychotherapy is centered around the cerebral cortex. Art therapy access all three regions of the brain more readily due to the motor functioning, visual stimulation, and somatosensory stimulation that are also involved in art therapy, thus art therapy is not centered around any one of the two avenues for therapy. For example there are activities in art therapy such as having the client start with reflecting on how they view the world

sees them and then asking them to draw how they see themselves. This activity would be a top down processing task. An example of an image from this activity would be:



Above: Image of how one views themselves



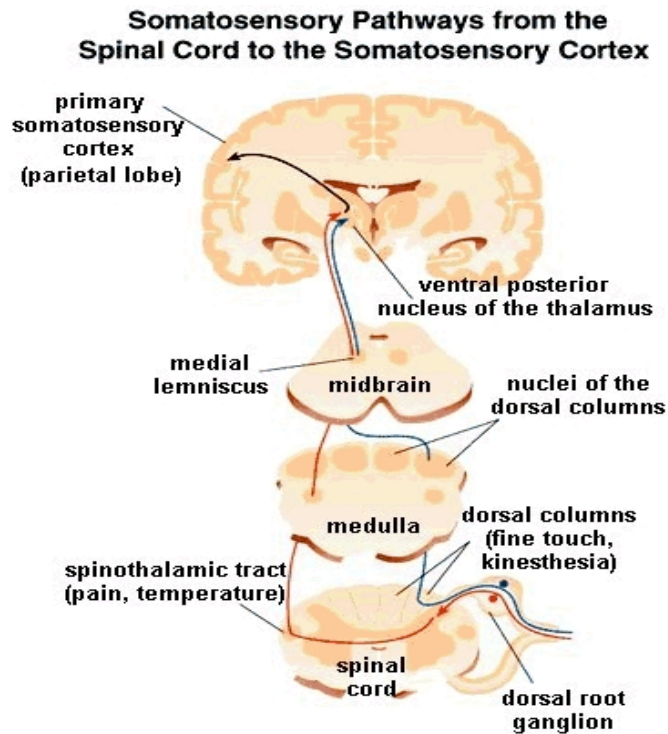
Above: Image of how they view the world sees them

Another type of art therapy activity would be asking the client to first close their eyes and finger paint. While painting they are instructed to concentrate on the sensations they encounter as they do this activity. Once done painting with their eyes open they are asked to reflect on their image stating what they see in it and/or the emotions it triggers. This activity is an example of bottom up processing. Here is an example of an image created through this process:



The Sense of Touch:

The sense of touch plays a large role on art therapy and neuropsychological processing. Nicholas (2010) further examined how somatosensory stimulation or “tactile communication” as she refers to it affects cognition. Nicholas (2010) noted that the sense of touch is the first of the five senses to develop when one is still just a fetus. Touch is the most social sense and provides people with their most fundamental way in which to interact with the world around them. In addition Nicholas (2010) found that “tactile communication” plays an immense role in ones emotional. One way is through touch-emotion synesthesia demonstrating that touching a specific texture can evoke an emotional response such as touching fur could be relaxing for a person. People can experience this to varying degrees. In addition Nicholas (2010) noted research detailing evidence for bidirectional, both top down processing and bottom up processing, exchange of information throughout the three regions of the brain through the experience of “tactile communication”. This is due to there being somatosensory pathways that extend through the three regions of the brain. In the brainstem there are the spinothalamic track, which dictates pain and temperature and the dorsal columns, which dictates fine touch and fine motor skills. The Limbic system contains nuclei of the dorsal columns and medial lemniscus, which communicates somatosensory information back and forth between the brainstem and the cerebral cortex. The cerebral cortex contains the primary somatosensory cortex, which processes tactile attention, tactile short-term memory, tactile working memory, tactile learning, and tactile language (Nicholas, 2010).



(Dijkerman and Stralen, 2011)

Affects of Art Therapy on PTSD:

One of the most devastating affects of victims of trauma is their disempowerment. Art therapy has been shown to provide victims of trauma with a sense of increased self-confidence and empowerment by focusing on what they can do as opposed to their limitations (Heenan, 2006). Additionally the victims can explore their emotions visually as opposed to feeling obligated to dialog about very sensitive matters.

Traumatic memories are strongly non-verbal, situation, emotional, and sensory memories. They are not contextual thus they lack a connection to time, place, and meaning. High anxiety limits purposeful retrieval of these memories. Over time negative traumatic memories, which negatively fit into ones autobiographical memory of self, create a negative sense of self and self esteem as well. In their case study Hass-Cohen,

Findlay, Carr and Vanderlan (2014) demonstrated a technique in which the client's schema or story associated with their traumatic memory is re-written to promote restructuring from negative to positive pathway processing with hope for future, reduce anxiety and stress and increase feelings of self-control. Their activity consists of five directives that are:

1. Have the client draw out an autobiographical timeline of the distressing event. Doing this enables the client to start recognizing and placing the events in the past and in a more chronological order in time.
2. Have the client paint or draw a specific event of trauma from the past, which exposes the trauma and the emotions with it. Upon completion the client is to name the piece thus beginning to retake control. Once names the therapist guides the client through writing a narrative that accompanies the image so they begin processing cognitively the event and the emotions that accompany it.
3. Have the client to utilize any materials they choose to change and one aspect of the traumatic image they created. Then the client names and creates a narrative to go with this new image as done in the previous directive. Once completed they are to identify the differences between the one in directive two and this one. This directive continues to increase the client's sense of control while aiding them to continue to process event in a more positively thus decreasing negative stimulation.

(Note: Directives two and three may be repeated as many times as needed.)

4. Have the client draw their own strengths

5. Have the client draw an optimistic version of what they want for their future.

(Note: The last two directives promote resiliency, a positive sense of self, and hopeful for the future.)

This activity focuses on the processing of visual and somatosensory information. It examines how images and their expression reflect and relate to emotions and personal experiences, along with how those then affect ones thoughts and behaviors.

For many victims of trauma touch can be a trigger. Art therapy can address this through ways listed above and through other actives. The sense of touch plays a large role in art therapy as opposed other types of therapy such as psychotherapy is another way its results differ neurologically. This positive stimulation of the brain through touch aids in the formation of new neuropathways and stimulates brain functioning. For trauma victims whom have negative associations with touch this can be a key part in their healing process that would not be obtained through other forms of therapy. As one heals and forms the new positive associates with tough they once again gain a more positive sense of self and empowerment that has been discussed previously as a result of art therapy.

The brain's forced ability to abstract due to limitations in the memory system works with art, which is an abstract way of emotional and cognitive release (Zeki, 2001), is another way that art therapy benefits victims of trauma suffering from disorders such as post traumatic stress disorder (PTSD). Often they find it traumatizing to verbally address the distressing events they have been through due to it triggering more complex thoughts and flashbacks of memories or nightmares. This is due to the psychotherapy addressing things primarily through the cerebral cortex area of the brain and not forming new more

positive associations for the neural pathways triggered when addressing traumas verbally. Often times eye movement desensitization and reprocessing therapy (EMDR) is used when working with PTSD. It is believed that the focus on the rapid eye movements while verbally working through trauma helps the brain to form new neural pathways associated with the trauma. Art therapy addressing trauma can have similar affects as EMDR. Additionally when addressing trauma through art one does not have address it directly. It can be addressed in segments through symbols and as one is ready to address it as a whole do so. In addition, findings show that expressions through art media can help in the recovery of memories (Lusebrink, 2004).

Methods

Activity 1:

Participants

This first activity was conducted with a group of adults ages 19 through 55. They were all Adult Rehabilitative Mental Health Services (ARMHS) clients. ARMHS consist of mental health based treatment services designed to teach restorative, skill building, recovery-oriented treatment services to individuals directly whom have the capacity to benefit from and learn skills. These services are provided wherever the clients and/or the service provider feels would be most suitable. An ARMHS client is someone whom:

- A. Is 18 years of age or older
- B. Has a recent diagnostic assessment by a qualified mental health professional that indicates ARMHS services are medically necessary
- C. Has substantial disability and functional impairment in three or more of the following areas: mental health symptom management, drugs/alcohol,

independent living skills, ability to engage in mental health physical health services, social/recreational skills, interpersonal communications, employment, education, housing, transportation, medication management, money management thus reducing self-sufficiency and quality of life

D. Has the cognitive capacity to engage in, learn skills, and benefit from rehabilitative services techniques and methods.

(Minnesota Department of Human Services, 2014)

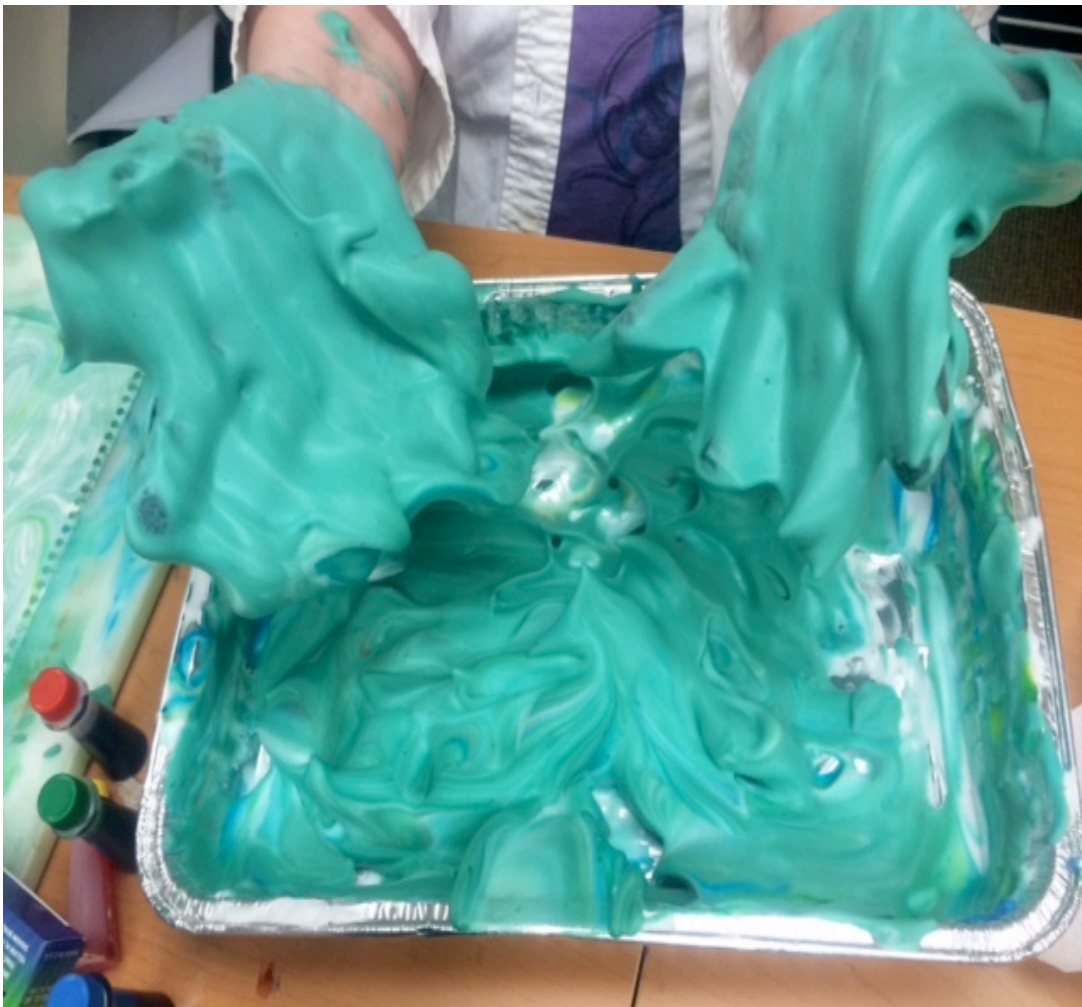
The clients in the group all were diagnosed with severe and persistent mental illness (SPMI). SMPI illnesses consist of bi-polar, PTSD, schizophrenia, schizoaffective disorder, major depression recurrent and boarder line personality disorder (BPD). Many of the clients also suffer from general anxiety not otherwise specified (NOS). The group consisted of 3 women and 1 male. The group members were recruited for an 8 week art therapy group focusing on positive symptom management skills and relaxation from Accend Services by their ARMHS workers. Accend Services is a mental health agency in Duluth Minnesota that offers ARMHS, targeted case management (TCM) services, psychotherapy, and children's therapeutic services and supports (CTSS).

Materials and Procedure

The following materials were used in this activity: plastic tubs, plastic placemats, food coloring (red, blue, green, yellow), and foam shaving cream where provided at each of the 5 settings at the table. In the center of the table were pieces of white paper, cleansing wipes, paper towels, and slices of cardboard about 2inx3in in diameter.

The participants were instructed to fill their tubs with as much shaving cream as they saw fit. Each participant filled his or her tub about 2/3s of the way full coving the

entire bottom. Once their tubs were full they were instructed to place their hands in the shaving cream and play with the shaving cream focusing on the sensation of it on their hands. After about five minutes they were informed that today's task was to enjoy themselves and they were give another five minutes to play in the shaving cream. They were then asked to focus on the group leader whom demonstrated the second part of the activity. Step one was to drip food coloring into the shaving cream. Step two was to swirl the color around in the shaving cream utilizing their hands.



Step three was to place a piece of paper face down over the top of the colored shaving cream smoothing it out on the cream and then remove it from the shaving cream facing it face up on the plastic placement. Step four was to take a piece of cardboard and remove the remainder of the shaving cream from the paper to reveal mobilization of color on the paper. Each participant made 4-5 pieces of marbled paper.



As the participants were completing their papers the facilitator informed them to utilize the drawing materials of markers and colored pencils to draw on the remaining blank unused paper.

As the participants were drawing there was a brief period of reflection explaining the purpose of the exercise lead by the group facilitator. This dialog consisted of explaining briefly the three regions of the brain, brainstem, limbic system, and cerebral cortex, and their roles in functioning. Then the group leader explained how the sensation

of movement of playing in the shaving cream triggered the clients to think utilizing their brainstem and asked them to reflect on how they reacted to this and share. Next the facilitator asked them to reflect on how their thought process and reactions began to change as they examined their marbled papers looking for symbols in them.

Afterwards the facilitator asked them to reflect on how they felt drawing after the activity and as they moved through thinking primarily with their brainstem to thinking primarily with their cerebral cortex. Last the group facilitator asked them to reflect on how each stage in the process was different and how they were similar and then brainstorm together ways to utilize this knowledge and the activity or similar activities to manage their symptoms outside of group.

Results

The clients reported having problems focusing on the instructions being presented while playing in the shaving cream. They reported no struggles in following directions and focusing while drawing. While participating in the activity with the shaving cream there were a lot of smiles, giggling, and sharing amongst all the participants in the group. The woman in the group expressed surprise in the feeling and manipulation in the shaving cream while the male stated that was familiar to him as he reports shaving multiple times a week with similar such shaving cream. During the drawing there was little conversation, sharing, and no giggling. Majority of the group members reported feeling more open and playful while working with the shaving cream and more serious while working with the drawing materials. When the group switched to drawing they all started drawing objects such as flowers, fairies, fire, and hearts. One client reported not knowing what to do and embarrassment over her ability to draw not being as good as

other group members. The clients were able to identify that they can utilize playful sensation activities such as playing with shaving cream, clay, or snow to elevate their mood, reduce anxiety, and stop racing thoughts. They did not identify a way to utilize drawing to reduce negative mental health symptoms as they reported this activity was more serious and thoughtful than the shaving cream activity. The first portion of this activity with the shaving cream was bottom up processing due to the sensory stimulation of working with the shaving cream; whereas the second part when the clients were drawing was top down processing as the clients focused on what they were drawing.

Activity 2:

Participants

The participants in this second activity are the same as in the previous activity. To review briefly they are clients of Accend Service with SPMI that were referred through their ARMHS workers. Their ages continued to range 19 through 55 years.

Materials and Procedure

The following materials were used in this activity: colored paper, drawing paper, colored pencils, markers, and glue sticks. In the center of the table were cleansing wipes and paper towels.

The facilitator guided the clients through thinking about and recognizing things that have been causing them stress, anger, or other types of emotional negativity in the past week. They were then directed to draw an image representing this, explaining that it can be an image of what it is or representing it or simply just colors and shapes that represent that to them. They were not given a time limit, just allowed to work on their images until they were done and waited for the others if they completed it early. The

facilitator then asked them each to share their image with the group explaining it briefly in a way they are comfortable.



Next the facilitator asked them to rip up their images, physically destroying them. The facilitator then instructed them to take a piece of paper from the colored paper that is the color that represents how they feel after destroying their image. Afterwards, the facilitator instructed the clients to use a glue stick in order to glue the pieces of their old image into a new more positive image. They once again were not given a time limit and allowed to work until completed. Once they were all completed they were asked to once again share with the group.



Results

This activity involved both top down processing and bottom up processing. The first part where they drew their images was a top down processing activity. They were all very quiet and serious. One client stated that she doesn't want to think about this. The facilitator asked if she has been able to avoid thinking about it for long and she stated no so the facilitator prompted what is wrong with letting it out so she tried it. There were many images of snow and cold weather. One client just did large messy spiral figure of

various colors that she stated represented her emotions. Another client did a foot and a medical boot since she has one on her foot currently due to an injury. They continued to talk very little amongst one another while showing one another their work. Typically there is much conversation from them during this time in previous activities. After work was shown one asked if she could throw her piece away. She made the emotional spiral. She was surprised to learn the next part was to rip it up but she said ok. They all stared for a moment at the facilitator until the facilitator started to rip up the example piece. They then followed suite. There was hesitation from them at first to destroy something they made even though many of them expressed not being found of their pieces. Many picked their favorite color for their paper and some picked yellow, red, or orange because they were bright happy colors. Some asked if the new picture has to be something and they were informed it could be something or nothing, just it must be anything they want that makes them happy or feel better. One turned into a sunny day with the ripper paper as the ground and the top of a tree. A couple others just glued their pieces on there in a new forms and tried to figure out from there what it looked like. They all expressed feeling better about their pieces and their images when there were done. There were smiles and more talking once the paper ripping process began. Many expressed what they say shapes could be in their new images when they showed them to the group. It was the more normal talkative sharing of work when they showed their second pieces. They started talking on their own without prompting from the facilitator about how ripping up their negativity through their pieces felt good and it was a good way to release that. The act of ripping up the paper brought in the bottom up processing and then the gluing it back together brought in the top down processing again in this activity. When reflecting

on the activity the clients were able to identify times that repeating this activity on their own would be beneficial to them.

Activity 3:

Participants

This activity was conducted with children ages 4 to 10 years old. Their parents were present but not participating directly in the activity. Their parents voluntarily brought the children into an art studio titled Studio 15 in Duluth, Minnesota for an art lesson with materials provided.

Materials and Procedure

The following materials were used in this activity: plastic tubs, plastic placemats, Kool Aid, baking soda, watercolor paper, brushes and small clear thick glass jars. In the center of the table were cleansing wipes and paper towels. It took place at an 8ft. table. Part one of this activity was taken from Kids Play Box (<http://www.kidsplaybox.com/art-activities-for-kids-scented-fizzy-paints/>, 2014).

Prior to the start of the activity the facilitator asked each person at the table to say their name and their favorite color. The facilitator started this and it each person went one at a time after in a circle until everyone had gone. For part one of this activity, the facilitator started by instructing the kids on how to make watercolor paint using Kool Aid and water in small glass jars. To do this a small amount of Kool Aid is place in the jar then it was filled 2/3s of the way up with water. The children mixed the paint with their brushes. They were then shown how to make the paint fizz by dipping their brushes in the paint and placing it on the watercolor paper that each child had in front of them. The areas on the paper where they just placed the wet paint the facilitator instructed them to

sprinkle a small amount of baking soda on which resulting in the desired fizzing. The children were informed this step could be repeated as often as they wanted during their painting process. While they painted the facilitator explained that the fizzing was due to a chemical reaction that takes place because of how acidic the Kool Aid is and the baking soda being a very mild base. When the two opposites mix this fizzing reaction happens. When the children were done painting their images were labeled with their names and set aside to dry.



For part two of the activity, the facilitator provided the children each with a tub that contained a blank piece of watercolor paper in the bottom of it. Each child was instructed they could take two jars of the paint they assisted in making to place on the paper in their tubs. They were then instructed to take a teaspoon-sized scoop of baking soda and pour it into their jars. This resulted in the paint bubbling up and out of the jars. The children were allowed to do this repeatedly until there was no more in their jars. They were allowed freedom to play with the paint water and bubbles in their tubs. When completed the paper was dyed from the bubbled over paint and it too was set aside to be dry.



Results

The children that knew one another sat by each other at the table with a bit of spacing between them and those they did not know. Two girls placed their parents as buffers between them since neither knew one another. The parents tried to encourage them to sit next to one another and talk. The facilitator also encouraged interactions by starting the group with a brief introduction activity that the children and some of the parents participated in. Despite this the children whom did not know one another mainly interacted to request materials and compare what they were doing during their process. There were many comparisons about whose paint fizzed more. During the start of the painting the children were a bit more serious and quiet; however, as they learned how to make the paint fizz they began to smile, laugh, and relax. Most of the children forgot about what they were originally painting and just got into making wet paint spots then making the paint fizz over and over again. One mom and one grandpa tried to redirect their kids to focus on what the picture they were making was and the facilitator had to redirect the adults to let the children just have fun with the process and not worry about what they were making. By the end of the painting all the kids were talking amongst themselves some. One girl whom was the oldest realized she made so much fizz she lost her painting so she quickly went over it to make a tree on it and her name. The younger children did not care. As the materials were passed out for the next activity they could hardly sit still and they were all laughing and talking about how their pictures fizzed amongst each other not worrying about whom knew whom as they did in the start. During part two of the activity the two girls that had their mom's as a buffer between them asked to have their moms sit back so they could show one another their erupting fizz in their

bins better. This happened after they relaxed more with being able to place their hands in their bins and the fizz and water. The youngest got lost in making his paints fizz and bubble over. When his sister would try to talk to him he would not respond he was so focused. He stayed that focused for the remainder of the 40 minutes and would just pause to ask for more supplies when he would run out. He is 4 and very active. His dad stated he normally does not focus on one thing for that long so he was impressed. At the end of the activity the kids were all friends. They all expressed having fun and asked their parents if they could come back. The two girls who were shy with one another at first and started socializing at the end asked their moms if they could play. This activity began with top down processing while the children started their watercolor paintings as they thought about what they were doing with the brushes and the paint on their papers. As they began making the paint fizz and then later put the paint in the bins and started to get their hands in it there were slowing incorporating more bottom up processing through the sensory activity of putting their fingers and hands in the fizzing wet paint.

Discussion

An important part in creativity and art is the involvement of pleasure, which its self is healing to anyone. This enjoyment is often what draws one to the artist process without even thinking of the positive cognitive and emotional affects it can have on them. As outlined previously the creative process utilized by art therapy aides in the creation of new positive neural pathways and elevated mood. The participants all reported elevated mood during the sessions, the children did so much that they did not want to session to end and them to leave with the adults that brought them. The types of activities all of the participants reported the highest in elevated mood were the ones that involved a higher

level of bottom up processing through which their sense of touch was stimulated greatly. These activities were the marbling paper with shaving cream and the making paint bubble over and erupt out while dying paper. The Accend ARMHS clients also reported less outside anxious and/or racing thoughts during all of the bottom up processing activities and thus identified other ways they can utilize this activity or other somatosensory activities to manage their mental health symptoms.

As previously identified the sense of touch is the first of the five sense one develops as a fetus and is a person's most fundamental way to explore, process, and learn about the world around them. Additionally, touch is the most social sense, playing a large role in how one feels/their emotions. In both the shaving cream paper marbling activity with the Accend ARMHS clients and in the erupting fizzy paint activity with the children it was clear that there was more communication amongst the participants while partaking in these particular the activities. The facilitator also noted more laughter and smiling from the participants during these activities. The children even started making new friends with the kids they did not know when there had been some identified shyness prior to that portion of the activities.

Activities that focused more on the top down processing such as when the ARMHS clients drew and then reflected on the session while drawing or when they drew what was causing them stress then turned it into an new image the clients reported to be still beneficial and their moods still elevated more than before the activities; however, less elevated than during the sensory activities that had more of a bottom up processing as was just discussed. The Accend ARMHS clients were able to identify how they could use on their own the emotion release activity where they drew the negative emotions or

thing, ripped it up and then made a new image from it which is both top down and bottom up processing. For the reflective drawing activity done at the end of the marbling paper with shaving cream activity that was primarily top down processing they could not identify how to use that activity outside of the group as they could the other activities. They did not see purpose in utilizing this to manage their symptoms outside of group and utilizing the cerebral cortex more for primary thinking allowed for self-consciousness in the group and less comfort with sharing with other group members. It was noted previously that a primary function in cerebral cortex is to manage how one perceives the world around them and how they view that world sees them. This response from the clients exemplified this function.

An over all review of areas of art therapy and brain functioning that stood out and were demonstrated by observing this group are:

1. Brain functions are specialized for distinctive tasks and levels of complexity.
2. Triggering different neuropsychological processes triggers different responses in the clients.
3. Somatosensory stimuli are correlated with emotional responses and there was a higher positive response to activities involving them
4. Art therapy creates elevated mood, increases self-confidence, and encourages positive interactions with others.
5. Art therapy can be used to work through emotional responses and manage symptoms in ways that other forms of therapy cannot due to the involvement in motor sensory stimuli along with vocal reflection.

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