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The Therapeutic Use of Photography in Relaxation

Sara Hegarty

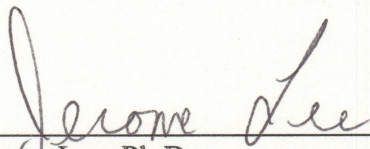
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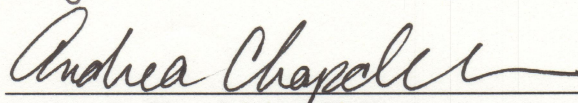
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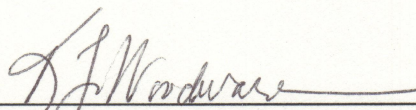
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The Therapeutic Use of Photography for Relaxation

Albright College

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Abstract

Art therapy has been widely used throughout various populations. One use of art therapy includes its use in decreasing anxiety. The effect of viewing and taking photography as a tool for relaxation was tested through the physiological measures of the galvanic skin response, pulse, systolic and diastolic blood pressure, and finger temperature and through a questionnaire. Participants included 5 males and 9 females. A series of two way ANOVAs indicated a significant interaction between pulse and phototherapy conditions and a significant main effect of finger temperature. A series of t-tests was conducted to evaluate the hypotheses that interest in photography would aid the participant in relaxing during the photography sessions, the participants' creativity would aid in relaxing during the photography sessions, and photography in general is relaxing. The test for creativity was significant. These findings suggest art therapy research can be empirical in nature and the effect of art therapy procedures can be measured through physiological means. The findings also suggest photography can be used in the therapeutic techniques of art therapists and in relaxation research as a direct visual image instead of an image in the imagination.

The Therapeutic Use of Photography for Relaxation

Art Therapy and Relaxation

Art therapy has been used successfully in a variety of settings, including its use with trauma victims and in stress relief. Malchiodi (1993) explains the body is a mirror of an individual's emotions. Furthermore, viewing images can affect our emotions. Using art with trauma victims is important because art facilitates the expression of sensory memories that are often associated with the traumatic or stressful experience. Common stress and stress associated with traumatic experiences can be successfully alleviated through tapping into the senses. Art's ability to do such makes the use of art therapy appropriate in stressed and traumatized populations. For example, Yamaguchi (1997) used art therapy in the treatment of Hiroshima bomb survivors. In using art therapy techniques such as painting and sculpture, victims were able to work through feelings of fear, anger, resentment, and isolation. Improvement in mental health was measured by verbal disclosure. Results indicated art therapy enabled patients to disclose more about their traumatic experience (Pizarro, 2004). Similar research was conducted in the hospital setting by Rockwood and Graham-Pole (1997). They used painting, drawing, sculpture, and craft-making in their therapy sessions helping patients cope with terminal illness. Results of this therapy revealed patients felt happier, less distress, less loneliness, and less anxiety.

Much of the research conducted with trauma victims includes victims of the World Trade Center attacks in 2001. For example Testa and McCarthy (2004) formed an art therapy group with three male inpatients of Queens Children's Psychiatric Center. The three children had experienced multiple traumas prior to the attacks that left devastating psychological damage. Two of the children had histories of suicidal ideation. All children were very anxious although

not directly diagnosed with Post Traumatic Stress Disorder. The group met for twelve weekly sessions. As a group project, they decided to paint a mural about the destruction of the World Trade Center. The therapist discovered painting the mural was a catalyst in forming discussion within the group. Also, painting the mural encouraged the children to share their reflections about their past traumatic experiences as well as their current trauma (Testa & McCarthy, 2004). Similar research conducted by Berberian (2003) provides another example of art's healing power in the children of New York City. Berberian, an art therapist in New York City, developed the project shortly after the bombings, when anti-Arab sentiments were forming throughout the population. She encouraged teachers in local schools to advertise among the children the opportunity to paint a mural about the tragedy. Children throughout New York City participated in the project. Berberian noted while engaging in art activity the children were recreating life through their art, "It served as a means of communicating harsh realities and hopeful fantasies present in the moment" (Berberian, 2003, p. 33).

Pizzaro's (2004) study compared the effects of writing therapy and art therapy in undergraduate students experiencing stress. Participants engaged in journal and essay writing and drawing for two hours. Researchers instructed the participants to write about and draw their most stressful life experience. Also, participants completed a general health and physical symptoms survey containing questions on physical and mental health. Results revealed although the art therapy portion did not have a significant impact on physical symptoms, participants' social dysfunction and effects of perceived stress improved (Pizzaro, 2004).

Photography

Art therapy is discovering new means for the use of imagery in treatment (Malchiodi, 1993). One of these means is photography. The use of photography in therapy is in the

developmental stages just as art therapy is in general. Researchers have used photos in therapy with a wide variety of patients and have noted photography's appeal in therapy. Early social scientists used photography as a tool to capture and document social situations. One of the earliest photographers to practice this was Eugene Auguste Atget (1856) who took photos of what he commonly saw and experienced in Paris (Szto, Furman, & Langer, 2005). One of the first attempts in using photography in therapy was by Diamond (1856) who used photography to record mental patients and realized the therapeutic value of displaying the photos to the patients. Along these lines, Conolly (1976) an associate of Diamond used photography to analyze his patients' physical features in association with their character (Phillips, 1986).

Whereas some therapists have used family photo albums and the patients' personal photos in therapy sessions, the first public recognition was in the publication of *Photo Analysis* written by Dr. Robert Akeret. Specifically, Akeret asked his patients to collect pictures of themselves and of their family members and to bring them to the therapy session. He analyzed the photos during the session, "...as a way to help patients determine reality of present and past experiences and to aid in a more precise and accurate recollection of those experiences" (Phillips, 1986, p.11). Stewart (1979) defined phototherapy as, "...the use of photos in a therapy setting to reduce painful psychological symptoms and as a method of facilitating psychological growth and change" (p.11). In his work defining photo therapy and its theory, he researched previous literature on photo therapy and stated the seven major components of photo therapy to be: philosophy and nature of a man, anxiety and neurosis, the treatment goals, and therapy techniques. In his definition of photo therapy he noted the importance of the therapist's interaction with the patient in the photography process by arguing, "...while just taking photographs might be considered therapeutic by the photographer, it is not "therapy" (p. 12).

Stewart states photo therapy believes humans use both halves of the brain but that one half of the brain is repressed by the society in which we live in his philosophy and nature of man.

Furthermore, the treatment goals of photo therapy are centered in the patients awareness of self and in the ways his or her self concept can be improved. Some of the therapy techniques Stewart mentions are projective, family album, photographs of the client, photographs by the client, and self portraits of the client. The projective technique is based on using any photo both the client and patient find interesting to generate conversation. The family album technique is one of the most frequently used techniques. In the use of this technique, the client is encouraged to talk about early childhood experiences through the photographs and is able to recall memories that have been repressed. Further, taking photos of the client and the self portrait technique are techniques that allow the client to think of self and his or her self worth. In addition, photographs by the client is a method in which the therapist may see what the client indicates as valuable, interesting, or concerning (Stewart, 1979).

Wolf (1976) used the projective technique previously mentioned in his work with adolescents. He applied the use of Polaroid photography in therapy for two years. Specifically, he employed a photo -collage technique in which patients and therapists photographed each other. The patient then configured the photos of himself on a blank sheet of paper. The patient was encouraged to look carefully at each component of the picture. The therapist asked the patients to say whatever they thought each figure was saying. If multiple figures were present in the picture, the therapist and patient could have dialogue. Wolf realized the therapy, "...stimulates significant 'movement' in psychotherapeutic relationships and opens way for substantial emotional growth especially with students who had been previously resistant to treatment" (Wolf, 1976, p.197). This technique acted as a catalyst for conversation between the

therapist and the client. Often, repressed feelings would arise from these conversations helping the therapist to direct a discussion those feelings.

Wolf not only realized the therapeutic value of photography in his work but discovered the value of Polaroid photography. Specifically, he discovered the Polaroid is a spontaneous document that captures the present moment. It gives the patient and therapist immediate feedback on themselves at the present moment. This process works especially well with children and adolescents who often require immediate gratification or with patients who are spontaneous in nature because the photo captures attention well.

Moreover, researchers have also used the projective technique in combination with participants taking their own photos. For example, Radley, Hodgetts, and Cullen (2005) used this technique with twelve homeless participants from Central London in order to understand how homeless people visualize their lives. Researchers gave participants cameras and instructed them to take pictures that represented their experience of being a homeless person. The researchers conducted an interview with each participant giving the participant a chance to explain their photographs. The research enabled the participants to show and explain their situation thus giving the researchers more detail about the lifestyle of the homeless. In a similar technique, Frohmann (2005) provided battered Mexican and South Asian immigrant women the opportunity to explore and inform others of their experiences as battered, immigrant, women. The project consisted of three sections, participant-generated photos, community exhibits of these photographs, and personal interviews with each woman. Results of this project indicate that the photography process and discussion of the photographs is a tool for self-exploration, reflection, an analysis of violence in their lives, and individual change.

Further evidence of using photography as self exploration lies in Burke and Dollinger's (2005) study involving the creation of autophotographic essays. The autophotographic essay was originally developed by Ziller (1990) as a way of eliciting people's self-concepts and ideas of self-identity that involved deeper reflection than questionnaire methods. Burke and Dollinger's (2005) study builds upon this concept and the work of Bugental and Zelen (1950) and Kuhn and McPartland (1954) whose practice in photo essays involved participants compiling twenty photos with brief written explanations for each photo that addressed the question of "Who am I?". Specifically, the study consisted of one hundred and sixty four students. Each participant selected twenty photos that answered the question, "Who am I?" and wrote brief analyses of each photo. Participants created the essays using old photographs, photos from magazines and other outside sources, photos taken in the present for the study in particular, and self portraits. Graduate students and faculty rated the individuality, defined as "...self created distinctiveness and richness of a person's experience of his or her inner life" (Burke & Dollinger, 2005). of each photo essay

Also, researchers have used photography with mentally ill patients. For example, Cornelson and Arsenian (1960) used Polaroid photography in their work with psychotic patients. They used this technique to investigate the responses of these patients in sessions in which the patients confronted their feelings and thoughts about themselves. The researchers questioned the repeated exposure to the patients' photographs and changes in their psychotic state. Results indicated the patients' confrontation of themselves through photography enabled them to have a more realistic view of themselves (Phillips, 1986).

Further use of photography with mentally ill patients lies in Phillips' (1986) work with schizophrenic patients. Patients were assigned to groups of six. Photography was taught by the

researcher and patients experienced in photography. Each group shared a camera and a dark room and met once a week. All the members took turns taking and developing the pictures. Phillips used the photographs of the group to facilitate group process, to explore feelings, and to assess the needs of each individual patient helping them attain a healthy attitude about themselves and others. Also, the photographs were discussed as a group and each patient discussed the meaning of their photos. Group members were able to aid individual members in discussing their feelings about their photographs and about themselves (Phillips, 1986).

Physiological Measures of Relaxation

Although research in photography is moving in regards to its impacts on art therapy both research in art therapy and in photography calls for the use of physiological measures to ensure the validity of the therapeutic value of both practices. It is known that 10% to 15% of young children exhibit significant physiological reactivity when they enter stressful situations. Their stress responses lead to increases in heart rate and systolic blood pressure (Harden, Pihl, Vitaro, & Gendreau, 1995). Selye (1956) understood the physiological indicators of stress to be overstimulation of the adrenal and autonomic systems, systolic and diastolic blood pressure, skin conductance as measured through the galvanic skin response, respiratory rate, pulse rate, focal activity, electrical brain activity and glucose levels. Early relaxation and stress intervention research uses biofeedback training to understand the physiological responses to relaxing experiences. One such study by Kumaraiah (1979) compared the use of the galvanic skin response in combination with progressive muscular relaxation and the use of both measures separately on twenty participants suffering from anxiety. The researcher placed surface electrodes to the participants finger tips in using the galvanic skin response. He instructed them to relax and listen to the pitch of the sound the galvanic skin response was making and to strive

to make the sound lower by relaxing. The lower the sound was the more relaxed the participant was. Participants rated their anxiety levels after using the galvanic skin response. Results indicated the participants reported a decline in anxiety symptoms such as muscular tension, tremors, restlessness, palpitation, perspiration, dizziness, insomnia, nervousness, and apprehension after using the galvanic skin response in combination with progressive muscular training (Kumaraiah, 1979). As indicated in this study the galvanic skin response is often used in conjunction with other relaxation techniques. Another study using the galvanic skin response was conducted by Bruning and Frew (1987) who realized while examining research on job related stress that this research relies on self-reported measures rather than hard evidence. Specifically the researchers assigned participants to three groups of relaxation techniques: meditation, management skills, exercise, and a control and measured the pulse rate, diastolic blood pressure, systolic blood pressure, and galvanic skin response before the relaxation treatment and then at two week intervals for six months. Results indicated a significant treatment effects for pulse and systolic blood pressure. There was a significant decline in pulse while combining the relaxation treatments.

Visual Stimulation in Relaxation Therapy

The use of visual imagery has been used in a wide variety of psychological research.. Prominent use of visual imagery lies in the use of imagination and recall. Tarrant, Manfredo, and Driver (1994) studied the effect of recall of outdoor experiences. Forty-four participants recalled active and passive outdoor experiences in addition to a negative test exam experience. Physiological activity was measured during each recall situation for each participant in terms of heart rate, systolic and diastolic blood pressure, and skin conductance. Results suggest the processing of internal information correlated with increases in heart rate, blood pressure, and

skin conductance level. Recall of passive recreation experiences and stressful exam experience were associated with higher diastolic blood pressure, heart rate, and skin conductance level which are not indicators of relaxation but arousal.

Visual stimulation in terms of guided imagery has been used widely amongst relaxation research. Guided imagery can be used as a buffer in stressful circumstances. It is an instructional method that like relaxation allows for adaptations (Gothelf, Petroff, & Teich, 2003). Collins and Rice (1997) extended Bohachick's (1984) research by using guided imagery on adults on adults with cardiovascular disease as a form of relaxation. Participants were informed to mentally visualize or imagine a pleasant, relaxing place of their choosing. Participants practiced this relaxation therapy over a six week period. Results indicated there were no significant differences in anxiety levels or symptoms of illness however participants reported feeling lower levels of tension. In a similar study, Tsai and Crockett (1993) examined the effect of relaxation treatments combining imagery and meditation on the stress levels of 137 nurses. The study lasted for a period of five weeks. They found continued practice in this relaxation technique was essential for nurses to experience the long-term effects of the relaxation. Furthermore, in Tsai's (2004) study with cardiac patients involved the use of relaxation training encompassing exercise, muscle relaxation, deep breathing, imagery, and meditation to improve the ability to sleep. The researcher instructed participants to, "Take five minutes to envision relaxing scenes for example the mountains or the shore" (Tsai, 2004, p. 462). Results showed sleep was improved.

Current Research Objectives

Whereas art therapy and photo therapy research discussed previously was concerned with the cathartic processes of making art the current research explores both the making of art and the visualizing of art as two separate relaxation processes. Also, the phototherapy discussed

previously was effective with people suffering from issues in self confidence and self concept. The current research is intended to establish a new use for photography as a tool for relaxation. This research draws from relaxation research which studies the effects of imagery on physiological activity. Instead of considering the effects of recall or guided imagery this research uses the photo as a visual tool and photography as a visual process for relaxation.

In addition previous literature on art therapy and photo therapy has observed the experiences of art therapists and patients in therapy sessions. This research will employ therapeutic technique in an empirical setting, thus testing photography's ability as an art therapy tool. Furthermore, this research will study photography's stress relieving qualities as detected through physiological means. However, as past research has used photography with mentally ill patients, this research will measure the stress relieving qualities of photography in participants suffering from common stressors such as academics, workplace related stress, social stress, and life events. The hypothesis is physiological indicators such as galvanic skin response, systolic and diastolic blood pressure, finger temperature, and pulse will be significantly correlated with relaxation in participants viewing and taking photos as well as participants viewing photos only. Also it is hypothesized participants will report feeling relaxed whether or not they enjoy photography or are creative individuals. This research is also intended to further photo therapy and the art therapy field in general by employing techniques in a non clinical setting.

Method

Participants

Participants of this study consisted of 5 males and 9 females ranging in age from 18-65. A majority of these participants were members of the honors program and honors organizations in their specific department at Albright College. All other participants were employed in long term careers. All participants experiencing academic, personal or social stress were included in

the study. Furthermore, participants were recruited to participate in this research through advertisements and flyers posted in communal areas. All participants were entered into a raffle to win a Polaroid camera upon completion of the study.

Materials

Participants who chose to participate in this research completed an informed consent in which they agreed to the specifications of this experiment (see Appendix A). Furthermore the researcher used the Stress Inventory and Assessment to indicate the degree to which participants are prone to experiencing stress (see Appendix B). In addition, a timed high school level math exercise was used to stimulate a condition of stress within the participants. A Galvanic Skin Response was used to assess the participants' stress levels physiologically. Also, a thermometer was used to measure participants' temperatures and blood pressure cuffs were used to measure participants' blood pressure and pulse rate before and after completing the math exercises and the photography session. Also, the researcher supplied participants with Polaroid cameras in the photography session of the study (see Appendix C). Furthermore, the researcher administered a questionnaire assessing how participants interacted with the art therapy process (see Appendix D). The researcher used a debriefing form upon completion of the research to explain any deception that occurred during the study and to answer any concerns regarding the nature of the study (see Appendix E).

Procedure

The collection of research comprised of two sessions. Participants completed an informed consent in which they agreed to participate in the research in the first session. The researcher administered the Stress Inventory and Assessment to participants to measure the degree to which

participants are prone to experiencing academic, personal, and social stress. Any individual whose score on this inventory was below a 35 was not included in the remaining portion of the study because he or she did not experience a significant amount of stress. The goal of the researcher was to examine stress and relaxation through photography in individuals prone to experiencing stress.

The researcher randomly assigned participants into two groups of seven participants one group taking photographs and viewing them and one group viewing photographs. The first group of participants was required to complete fifteen mathematics questions within ten minutes upon entering the research facility. The researcher used the galvanic skin response (GSR) to measure the stress level of the participants after completion of these exercises. Participants placed two fingers on the tool for a total of three minutes. The stress level was recorded by a graph produced when the GSR was plugged into a computer assessing the degree to which the stress level decreased from higher stress to lower stress. The researcher also measured the systolic and diastolic blood pressure, finger temperature, and pulse rate of the participants before and after completing the mathematics exercises. The researcher then proceeded to supply these participants Polaroid cameras and asked them to take five pictures they perceived to be interesting. The researcher allotted fifteen minutes for the participants to take the photos. The researcher used the GSR a second time to measure the stress level of participants while they viewed each of the photographs they had taken one at a time for an allotted time of three minutes. Also, the researcher measured the systolic and diastolic blood pressure, finger temperature, and pulse rate of the participants after they viewed the photos.

The second group of participants experienced a similar condition, except they did not take their own photographs. The participants completed fifteen mathematics questions within ten

minutes. As before, the researcher measured the systolic and diastolic blood pressure, finger temperature, and pulse rate before completing the mathematics exercises and after viewing the photos. The researcher administered five photographs with a similar quality as photos other participants took to this group of participants to view one at a time and used the GSR to measure the stress level of the participants as they viewed the photos for three minutes. In addition, each group completed a questionnaire assessing whether they were interested in photography, were creative, and whether they found photography to be relaxing.

Results

Systolic Blood Pressure

The mean systolic blood pressure for participants taking and viewing photos and for participants viewing photos decreased during the photography session (see Table 1). A two way ANOVA was conducted to evaluate the effect of the phototherapy on systolic blood pressure. Results indicated no significant main effects for systolic blood pressure, $F(1, 12) = 2.90, p = .11$. . There were no significant interactions for phototherapy and systolic blood pressure, $F(1, 12) = .56, p = .47$.

GSR

The mean GSR readings for participants viewing photos were higher than the reading of participants viewing and taking photos. The mean GSR readings for participants taking and viewing photos decreased from the beginning reading to the ending reading while the mean GSR readings for participants viewing photos increased from the beginning reading to the ending reading (see Table 1). A two way ANOVA was conducted to evaluate the effect of the phototherapy conditions on GSR readings. Results indicated no significant main effects for GSR, $F(1, 12) = .80, p = .39$ and no significant interactions for GSR, $F(1, 12) = 1.82, p = .20$.

Pulse

The mean pulse for participants taking and viewing photos increased from before the photography session to after the photography session. The mean pulse for participants viewing photos decreased from before the experiment to after the experiment (see Table 1). A two way ANOVA was conducted to evaluate the effects of the phototherapy conditions on pulse rate. Results indicated no significant main effect for pulse, $F(1, 12)=3.74$, $p=.08$ but there was a significant interaction between pulse and phototherapy, $F(1, 12)=8.24$, $p>.01$ (see Table 3).

Finger Temperature

The mean finger temperature for participants taking and viewing photos increased from photography session to after the photography session. The mean finger temperature for participants viewing photos also increased from before the photography session to after the photography session (see Table 1). A two way ANOVA was conducted to evaluate the effects of the phototherapy conditions on finger temperature. The results indicated a significant main effect of finger temperature, $F(1, 12)=5.66$, $p>.01$. However there was no significant interaction for finger temperature, $F(1, 12)=.34$, $p=.57$.

Diastolic Blood Pressure

The mean diastolic blood pressure for participants taking and viewing photos decreased from before the photography session to after the photography session while the mean diastolic blood pressure the participants viewing photos increased from before the photography session to after the photography session (see Table 1). A two way ANOVA was conducted to evaluate the effects of the phototherapy conditions and diastolic blood pressure. Results indicated to significant main effect of phototherapy on diastolic blood pressure, $F(1, 12)=.45$, $p=.52$ and no significant interaction for diastolic blood pressure, $F(1, 12)=3.13$, $p=.10$.

A series of independent t-tests was conducted to evaluate the hypotheses that interest in photography would aid the participant in relaxing during the photography sessions, the participants' creativity would aid in relaxing during the photography sessions, and photography in general is relaxing. The mean reported creativity was higher for participants viewing photos. The mean reported interest in photography was higher for participants viewing photos also. The mean reported relaxation was higher for participants taking and viewing photos. The means and standard deviations for creativity, interest, and relaxation as a function of photo therapy condition are reported in Table 2. Results revealed the test for creativity was significant, $t(12) = 2.24$, $p = .04$ whereas the tests for interest in photography, $t(12) = -.45$, $p = .66$, and reported relaxation, $t(12) = -.41$, $p = .69$ were not significant.

Discussion

It was expected the photography session would have a therapeutic effect on participants in terms of their ability to relax and physiological measures as well as a questionnaire would indicate relaxation. Results did not fully support the above hypothesis or the objectives of this research. It was hypothesized GSR as well as systolic blood pressure, diastolic blood pressure, pulse, and finger temperature would indicate relaxation however relaxation amongst participants was not evident in all these physiological measures. However, a significant main effect of finger temperature indicated some relaxation amongst participants. In general the temperature of fingers ranges from 90 degrees to normal body temperature. When one experiences stress the temperature of his fingers decreases whereas an increase in finger temperature would be correlated with relaxation or relief from stress. Results also indicated a significant interaction between pulse and condition. Those participants who only viewed photos experienced a greater decrease in pulse than participants who viewed and took photos. Furthermore a decrease in pulse

suggests relaxation amongst this group of participants. Although it was hypothesized interest in photography and creativity would both aid the participants in relaxing through practicing photography, results indicated participants who were creative in nature benefited from the photography session more than other participants. It was also hypothesized participants would report feeling relaxed through photography, results did not support reported relaxation.

It is likely the findings of this study will be useful in art therapy research in terms of adding research that is experimental in nature. This study relates to and builds upon previous art therapy and photo therapy research. Much art therapy research relies on case studies and participants' reports as a way of realizing the effect of the therapy. As Yamaguchi (1997) indicated in research pertaining to healing participants verbally disclosed their improvement in mental health. Also, as Testa and McCarthy (2004) discovered in their research with children suffering from Post Traumatic Stress Disorder after the 9/11 bombings in New York, children reported feeling healed and healthier. This study does not rely much on the reports of participants but empirically tests the effect of art therapy by using physiological measures in addition to participant feedback through a questionnaire.

Furthermore, previous research in photo therapy discusses the photo as a way for the participant to realize self, for the therapist to understand the participants' self concepts, and as a catalyst for discussion between the therapist and client. The results of this study build upon the many uses for photography in therapy suggesting the photograph and the photographic process can be used for relaxation in addition to understanding self concept and communication between the therapist and client.

The current research furthers previous relaxation research by comparing the techniques of guided imagery and photography. In previous relaxation literature guided imagery was used in an

instructional and directional way. For example, Bohachick (1984) informed his participants to visualize a relaxing place of their choosing. The findings of the current research suggest the relaxation process does not have to be directional and structured. Participants in the current study took photographs of images they thought were interesting. It was assumed participants would be able to relax while viewing images they thought were interesting. Furthermore, participants were not instructed to relax but were instructed to sit and view the photos. The current study was successful in testing the power of this non directional approach to relaxation. It was also successful in comparing imagining images to actually visualizing direct photo images indicating visualization research does not have to rely on imagination but can utilize direct imagery.

Practical implications of this research include its use with people experiencing stress and inabilities to relax. Although the research requires the use of scientific equipment it can be conducted in a variety of setting because the equipment is modernized and portable. The sample in the current study consisted of undergraduate students as well as working class individuals. The stress experienced by these participants included academic, personal, and social stress as well as job related stress and stress associated with life events. Thus the future of this research lends itself to use in many different settings with a variety of participants.

Limitations of this research in terms of research design include the participant pool and equipment. In future research it would be beneficial to sample a larger amount of participants. Relating to the equipment used, the GSR was the most problematic. Use of the GSR required the participants to place their fingers on the equipment. In some cases it took a lengthy amount of time for the equipment to be in range so that relaxation could be measured. Participants became impatient as they waited for the equipment to be in range.

Another problem with the research design in terms of equipment measuring relaxation was that there was no physiological way for the researcher to measure whether participants were experiencing relaxation as they were taking photographs. In order to measure relaxation physiologically the body needs to be still. However, there is a mental process of relaxation that occurs in order for the body to relax. The equipment used could not measure this and there was no significant response on the questionnaire participants completed that taking photos was relaxing. Further research needs to be conducted regarding the issue of whether actually taking photographs is relaxing since the results of this research only suggest viewing photos is relaxing.

Other concerns with this research lie in the fact that photography was correlated with relaxation only. Further research should be conducted to see if photography can be used in relaxation as part of a stress management program. In other words, can this research stand alone or should more research be conducted to see the effects of photography on stress management? Also, research should be conducted to discover the long term effects of photography as a tool for relaxation since most stress management programs are longitudinal in nature.

In conclusion, the findings of this research are crucial to the direction art therapy is taking. Recently, more research is being conducted in art therapy that not only tests various art therapy techniques but elicits participant feedback through questionnaires and surveys. The findings of this study suggest feedback can be received not only through questionnaires but biologically as well and that art therapy research can be empirical in terms of design. In the future art therapy may be viewed scientifically as psychology is. Also, this research adds to the variety of techniques art therapists use by indicating photography can be used as a tool for relaxation.

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Table 1

Means and Standard Deviations for GSR, Pulse, Systolic blood pressure, Diastolic blood pressure, and Finger temperature as a Function of Phototherapy condition

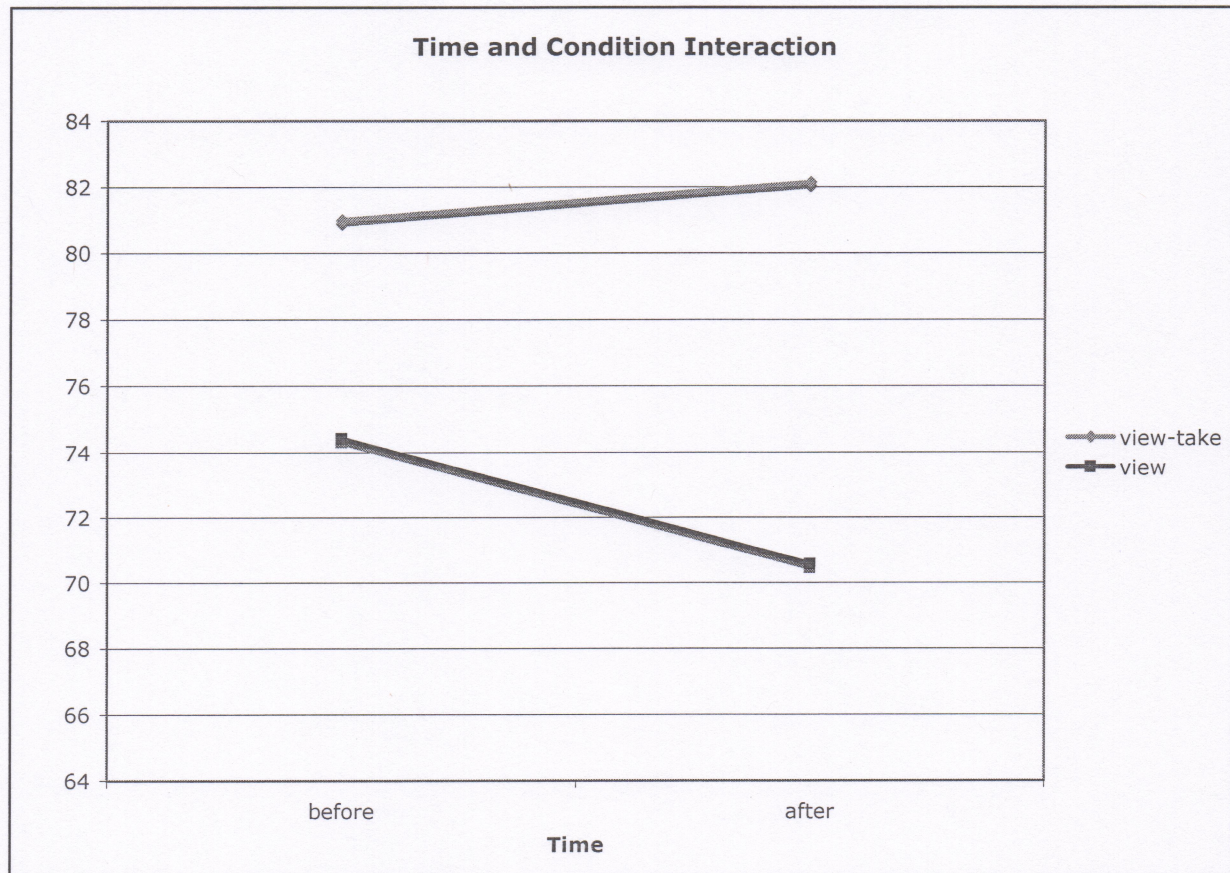
	Mean		Standard Deviation	
	View and Take	View	View and Take	View
GSR beginning	6400.00	6857.14	4644.71	4713.76
GSR ending	5885.71	9400.00	4276.85	4501.85
Pulse Before	81.00	74.43	10.74	7.32
Pulse After	82.14	70.57	8.64	9.24
Systolic Blood pressure Before	126.14	106.57	21.91	8.34
Systolic Blood Pressure After	117.00	103.00	18.89	5.97
Diastolic Blood Pressure Before	78.43	60.71	14.28	6.63
Diastolic Blood Pressure After	71.15	64.00	9.87	9.24
Finger Temperature Before	91.14	87.57	2.41	6.21
Finger Temperature After	93.14	90.86	2.79	2.04

Table 2

Means and Standard Deviations for Creativity, Interest in Photography, and Relaxation as a Function of Phototherapy Condition

	Mean		Standard Deviation	
	View and Take	View	View and Take	View
Creativity	2.92	3.5	.53	.40
Interest	3.17	3.2	.57	.26
Relaxation	3.05	3.14	.45	.32

Table 3



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Appendix A

Informed Consent

The study in which you are about to participate is experimental research that is being conducted by Sara Hegarty of Albright College. The Institutional Review Board of Albright College has reviewed and approved the study guaranteeing the safe and ethical treatment of all participants of this study.

Participation in this study requires you to complete assessments of your stress level via the Lovelace Stress Scale and a physiological measure known as the Galvanic Skin Response. In addition, you will be asked to practice photography by taking or viewing photos and complete a questionnaire based on this experience.

All research is confidential and your anonymity is guaranteed. In no way, will your name be associated with the materials collected throughout the study or the results of the study. All research will be analyzed and reported in group form only. In addition, all research will be stored safely by the researcher without access by the public.

You are reminded that your participation in this research is completely voluntary. You may withdraw from the study at any time without penalty and your data will be destroyed.

Thank you for your participation in this research. If you have any questions regarding the research or would like to receive a copy of its results please contact the researcher via telephone 732-513-8306 or e-mail sh061@albright.edu.

.....

I acknowledge I have been informed of and my understanding is clear regarding my expectations and rights throughout the study. I acknowledge that I am at least 18 years of age. I voluntarily consent to participate in and contribute to the results of this experimental research.

Signed _____

Date _____

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Appendix B
Stress Inventory and Assessment

Rate yourself as to how you typically react in each of the following situations. There are no right or wrong answers.

4= Always 3=Frequently 2=Sometimes 1=Never

1. Do you try to do as much as possible in the least amount of time?

4 ____ 3 ____ 2 ____ 1 ____

2. Do you become impatient with delays or interruptions?

4 ____ 3 ____ 2 ____ 1 ____

3. Do you have to win at games to enjoy them?

4 ____ 3 ____ 2 ____ 1 ____

4. Do you find yourself speeding up while driving to beat the red light?

4 ____ 3 ____ 2 ____ 1 ____

5. Are you unlikely to ask for or indicate you need help with a problem?

4 ____ 3 ____ 2 ____ 1 ____

6. Do you often seek the respect and admiration of others?

4 ____ 3 ____ 2 ____ 1 ____

7. Are you overly critical of the way others do their work?

4 ____ 3 ____ 2 ____ 1 ____

8. Do you have the habit of looking at your watch or clock often?

4 ____ 3 ____ 2 ____ 1 ____

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9. Do you constantly strive to better your position and achievements?

4 _____ 3 _____ 2 _____ 1 _____

10. Do you spread yourself "too thin" in terms of your time?

4 _____ 3 _____ 2 _____ 1 _____

11. Do you have the habit of doing more than one thing at a time?

4 _____ 3 _____ 2 _____ 1 _____

12. Do you frequently get angry or irritable?

4 _____ 3 _____ 2 _____ 1 _____

13. Do you have little time for hobbies or time by yourself?

4 _____ 3 _____ 2 _____ 1 _____

14. Do you have a tendency to talk quickly or hasten conversations?

4 _____ 3 _____ 2 _____ 1 _____

15. Do you consider yourself hard-driving?

4 _____ 3 _____ 2 _____ 1 _____

16. Do your friends and relatives consider you hard-driving?

4 _____ 3 _____ 2 _____ 1 _____

17. Do you have the tendency to get involved in multiple projects/ tasks?

4 _____ 3 _____ 2 _____ 1 _____

18. Do you have a lot of deadlines in your work?

4 _____ 3 _____ 2 _____ 1 _____

19. Do you feel guilty if you relax and do nothing during leisure time?

4 _____ 3 _____ 2 _____ 1 _____

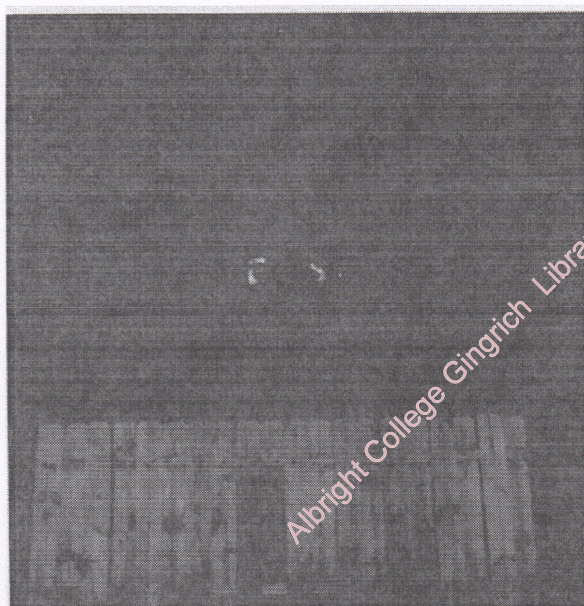
20. Do you take on too many responsibilities?

4 _____ 3 _____ 2 _____ 1 _____

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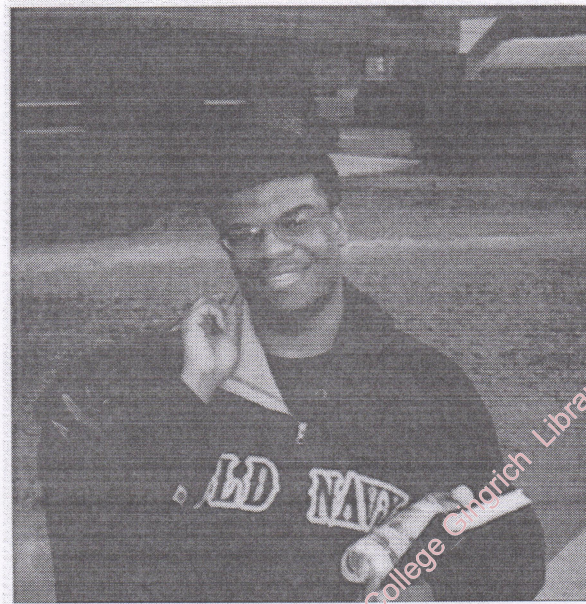
Appendix C

Examples of Polaroid Photographs Taken by Participants





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Appendix D

Questionnaire

Directions: Below is a list of statements. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

1. I enjoy taking and looking at photos equally.

SA A D SD

2. In general photography is pleasing to me.

SA A D SD

3. I find photos with interesting color arrangements are more appealing than others.

SA A D SD

4. Photographs with people in them are my favorite types of photos.

SA A D SD

5. I am relaxed when am able to view photographs.

SA A D SD

6. I am more relaxed if I am looking at photos I have taken than if I am looking at photos other people have taken.

SA A D SD

7. I feel taking photos is a way of releasing tension.

SA A D SD

8. I feel taking photos allows for creative expression.

SA A D SD

9. I would not consider myself a creative person.

SA A D SD

10. Viewing photos does not relax me.

SA A D SD

11. I find nature is an excellent source for taking photos.

SA A D SD

12. I do not view photos often.

SA A D SD

13. I prefer to view photos which have personal meaning to me.

SA A D SD

14. Photographs are a way to re-visit our memories.

SA A D SD

15. I take photos whenever I am able to.

SA A D SD

Appendix E

Debriefing

This debriefing is to inform you of the true nature of this study. You were deceived as to the nature of the test you took and the process you underwent. The Loveless Stress Scale assessed your current level of stress, as did the galvanic skin response. You were assigned to groups of participants taking and viewing photos and participants viewing photos only. I hypothesized taking and viewing photographs would help to decrease your level of stress as measured by the galvanic skin response and the Lovelace Stress Scale. Furthermore, I hypothesized those taking and viewing photos would have less stress overall after the photo process than those who only viewed the photos. The questionnaire you completed after the experiment was used to judge how you interacted with the photography process.

The deception you underwent during the study was completely necessary because if you had known the true nature of the research the results would be invalid. Furthermore, this study was not designed to judge you as a person or your character in any way, but to assess how photography helped decrease your stress level. You are reminded your information is completely private. It has been coded and your name **will not** be attached to any part of this experimental research. However, if you feel uncomfortable in any way regarding the experiment contact your health care provider and the researcher.

Thank you for your participation in this research. It is important you realize your great contribution to the field of art therapy. Understand it is imperative the procedure and true nature of this experiment remain confidential. Please do not discuss the research outside of this room to anyone else.

If you have questions regarding the experiment you may discuss them with the researcher at the end of this session or you may contact the researcher, Sara Hegarty, via telephone 732-513-8306 or e-mail sh061@albright.edu. Also, contact the researcher if you are interested in receiving the results of this experimental research.

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