

**The Integration of Computerized Art Making as a Medium
in Art Therapy Theory and Practice**

A Thesis

Submitted to the Faculty

of

Drexel University

Hahnemann Creative Arts in Therapy Program

by

Barbara A. Kuleba

In partial fulfillment of the

Requirements for the degree

of

Master of Arts

May 2008

Dedications

I would like to dedicate this work to the many clients who can benefit from the use of computerized art making in therapy and to the art therapists who participated in the survey. This research would not have been possible without the support of the participants who gave of their valuable time to be a part of this study.

This thesis is lovingly dedicated to my two beautiful children Zachary and Hannah and to my husband Ron for all of their love, patience and support over the last two years. My children have inspired me to always follow my dreams, no matter how difficult or challenging that may be. This is truly a dream come true. Zach and Hannah, thank you for believing in me as much as I believed in myself. I love you with all of my heart and soul.

Acknowledgements

This thesis would not have been completed without the support, encouragement and guidance provided by all three of my committee members. I would like to first thank my committee chair Dr. Nancy Gerber for her continual support and guidance throughout the process. Her dedication was truly inspiring and motivating. She was my “structure” throughout the process, and I would have never completed this thesis without that. I would also like to thank Dr. Fran Cornelius for her generous time and guidance throughout the survey process. Her expertise in informatics was extremely helpful. Her optimism and enthusiasm propelled me to continue on eagerly and passionately. I would like to thank Dr. Steven Adelman for his valuable time in being a part of my committee. His clinical knowledge was invaluable. Finally, I would like to thank Anand “Andy” Bhattacharya for his valuable time, his optimism and his guidance in helping me with the statistical components of this thesis.

Table of Contents

LIST OF TABLES	vi
LIST OF FIGURES	vii
ABSTRACT.....	.ix
1. INTRODUCTION	1
2. LITERATURE REVIEW	10
2.1 Overview.....	10
2.2 The Use of Computer Technology in Healthcare	10
2.3 The Use of Computer Technology in the Field of Mental Health	13
2.4 Art Therapy Theory and Practice.....	19
2.5 Art Therapy Theory and Media	21
2.6 Computer Art Therapy with Specific Populations.....	24
2.7 Technological Aspects of Art Therapy and Computers.....	30
2.8 Integrating Technology into Art Therapy Theory and Practice.....	32
2.9 Pioneers of Computer Art Therapy.....	34
2.10 The Therapeutic Relationship and Art Therapy.....	43
3. METHODOLOGY	47
4. RESULTS	57
4.1 Overview.....	57
4.2 Presentation of Data.....	57
4.3 Data Analysis	58
4.4 Participants.....	59

4.5	Undergraduate Education.....	60
4.6	Art Experience	61
4.7	Career Experience.....	63
4.8	Computer Experience.....	66
4.9	Computer Art Making Experience.....	69
4.10	Use of Computer Art Making in Art Therapy	76
4.11	Factors Supporting and Not Supporting the Use of Computers in Art Therapy.....	79
4.12	Computer Art Making in Graduate Studies	81
4.13	Open-Ended Questions	83
4.14	Correlational Data.....	94
5.	DISCUSSION.....	104
6.	SUMMARY AND CONCLUSIONS	127
	LIST OF REFERENCES	130
	APPENDICES	136
	Appendix A: E-mail Announcement – Pilot Study.....	136
	Appendix B: Survey – Pilot Study.....	137
	Appendix C: E-mail Announcement – Study	148
	Appendix D: Survey – Study	150

List of Tables

1.	Correlation Table	95
2.	Cross Tabulation between Age and Computer Use in Practice	96
3.	Cross Tabulation between Age and Use of Computer to Create Own Artwork	97
4.	Cross Tabulation between Undergraduate Degree and Computer Use in Practice.....	97
5.	Cross Tabulation between Undergraduate Degree and Computer Use to Create Own Artwork.....	98
6.	Cross Tabulation between Overall Computer Experience and Comfort Level with Using a Computer	99
7.	Cross Tabulation between Level of Comfort with Using a Computer and the Computer Being Utilized in Therapy with a Patient.....	99
8.	Cross Tabulation between Level of Comfort with Using a Computer and the Importance of Using a Computer for Art Making in Practice	100
9.	Cross Tabulation between Level of Comfort with Using a Computer and the Importance of Using a Computer in General in Practice	100
10.	Cross Tabulation between Level of Comfort with Using a Computer and Number of Sessions with Clients that Involves Computer Art Making	101
11.	Cross Tabulation between Level of Comfort with Using a Computer and How Long Participant Has Been Using This Medium	102
12.	Cross Tabulation between Level of Comfort with Using a Computer and Currently Using a Computer for Clients to Create Artwork.....	102
13.	Cross Tabulation between Level of Comfort with Using a Computer in Practice and Using a Computer in Practice.....	103
14.	Cross Tabulation between Level of Comfort with Using a Computer and the Use of a Computer to Create Own Artwork	103

List of Figures

1.	Percentage of Ages Represented in the Study	59
2.	Participant Age Distribution by Gender	60
3.	Undergraduate Degree Received by Participant	61
4.	Preferred Medium to Use as An Artist	62
5.	Preferred Medium to Use in Treatment	63
6.	Art Therapy Career Experience	64
7.	Career Practice Settings	65
8.	Art Therapy Sessions Per Week	66
9.	Overall Computer Experience.....	67
10.	Computer Use in Clinical Practice.....	67
11.	Importance of Computer Use in Clinical Practice	68
12.	Importance of Computers in General.....	68
13.	Use of Computers in Practice for Clients to Create Artwork	69
14.	Using Computer to Create Personal Artwork	69
15.	Art Therapy Sessions Involving Computer Art Making.....	70
16.	Years Creating Artwork with Clients	70
17.	Computer Use in Practice	71
18.	Populations Who Would Benefit from Computerized Art Making	72
19.	Populations Using Computerized Art Making.....	73
20.	Factors to Support Use of Computers in Art Therapy	74
21.	Benefits to Using Computers for Art Therapy.....	75

22. Offering Computer Art as a Medium.....	76
23. Input Devices Preferred by Participants	77
24. Input Devices Clients Preferred.....	77
25. Software Used for General Use	78
26. Software for Computerized Art	79
27. Support of Computers in Art Therapy	80
28. Factors that Deter the Use of Computers in Art Therapy	81
29. Curriculum for Graduate Art Therapy Studies	81
30. Training in Graduate Studies	82
31. Art Therapists Using Computers for Practice.....	82

Abstract

The Integration of Computerized Art Making
as a Medium in Art Therapy Theory and Practice

Barbara A. Kuleba, BA

Nancy E. Gerber, PhD, ATR-BC, LPC

The following research question provided the framework for this study: How can computerized art making be integrated as a medium in art therapy theory and practice?

The method that was used to explore the current utilization of computerized art making in art therapy theory and practice was a survey that was developed and distributed to credentialed practicing art therapists in the United States. The purpose of the survey was to elicit information relevant to the current utilization of computerized art making in art therapy theory and practice, to determine the interpersonal, cognitive and emotional effects on the client of computerized art making in art therapy, and to determine the nature of the therapeutic relationship while creating computerized art.

The study resulted in 208 participants responding who were credentialed practicing art therapists in the United States. Overall, participants who were using computerized art making in art therapy concluded that the therapeutic relationship and the effects of using a computer to create artwork in therapy are the same as with traditional media. Those participants who were reluctant to use computerized art making in therapy expressed their lack of training and experience relating to the computer hardware and software. These participants also expressed concern relating to the unique sensory qualities of a computer to create artwork. The majority of the participants reported that computerized art making should be part of the curriculum in graduate studies which supports the findings that if art therapists were knowledgeable and trained with using a computer for art making, they may be more likely to use this medium in therapy.

The literature supports the findings of this study in which art therapists are not using computers in art therapy due to their lack of experience and training, and also possibly due to the lack of research relating to the implications of its use. Further research is recommended to determine the benefits and effectiveness, if any, of using a computer as a medium in art therapy theory and practice.

CHAPTER 1: INTRODUCTION

The purpose of this research study was to address how art therapists can integrate computerized art making as a medium in art therapy theory and practice. The emergence of computer technologies has generated a major new expansion in the visual arts. The digital revolution has occurred largely in the commercial area of graphic design and is only beginning to be adopted by independent artists (McNiff, 2005, p. 197). As computer technology increasingly impacts people's lives in terms of communication and information, it has naturally affected how health-care professionals, including art therapists, engage with their patients or clients. This way of interacting with others, both locally and at a distance, has become part of most health-care professionals' work and daily lives (Malchiodi, 2000, p. 14).

The field of art therapy is increasingly influenced by the tremendous growth in the use of computers by professionals and the general public. For art therapy, the strides made in computer technology and digital imagery may be even more important as these advances have created opportunities to incorporate digital media such as photography and videotape as well as computer painting and photo programs into art psychotherapy. These electronic arts can offer clients new ways to express themselves creatively (Malchiodi, 2000).

Art materials or media play an important role in art therapy treatment. Robbins (2000) stated that art materials are "an organic part of theory, technique and the processes of creativity development and therapeutic change" (p.104). Although there are certain qualities with any art material that may make it more or less appropriate for use with a specific clinical population, art materials can be used in a multitude of ways to promote an ever adapting holding environment that is sensitive to a patient's changing levels of

ego integration, defenses, resistances, and object representations (Robbins, 2000). Art therapists make media choices in treatment based on assessing the psychological development, psychodynamics such as ego functions, and the level of object relations maturity of the client (Robbins, 2000).

As the field of art therapy grows and develops, it is constantly integrating new tools to meet the needs of clients (Orr, 2006, p. 191). Professional counseling associations have demonstrated the importance technologies are having in their fields and for their clients by devoting entire journal issues to technology-related topics (Peterson, Stovall, & Elkins, 2005, p. 139). Peterson et al. (2005) stated that many art therapists have found that computers and digital imagery technology (DIT) have benefits over traditional practices and that technology is influencing the way art therapists practice. These influences include the way art therapists archive artwork, record progress notes, and communicate with each other. Digital imagery technology is also influencing the services that are provided to individuals living in rural areas, providing art production adaptations for disabled persons, and influencing how art therapists are producing their own artwork (Peterson et al., 2005).

Although art therapists have generated various specific definitions of art therapy, most of them fall into two related theoretical concepts. The first concept is the belief in the inherent healing power of the creative process of art making. This view embraces the idea that the process of making art is therapeutic in and of itself. This process is sometimes referred to as art as therapy. The second concept of art therapy is based on the idea that art is a means of symbolic communication. This approach is often referred to as art psychotherapy which emphasizes the product—drawings, painting, and other art expressions—as helpful in communicating issues, emotions, and conflicts within the

context of a therapeutic relationship (Malchiodi, 2007). Today, art as therapy and art psychotherapy are often thought of more as a continuum rather than two opposing views.

Art therapy imposes some special factors in the therapeutic relationship. The relationship does not only include the therapist and the client(s), but also each client's relationship to the art product that they have created. Within the art therapy relationship, the art therapist attunes to the pre-verbal psychological life of the patient and attempts to communicate through the art process. With the use of this sensitivity, emotional communication and art media selection, essential aspects of the therapeutic holding environment are constructed. "As therapists, we constantly create and evolve structures that organize the energy in the therapeutic relationship. Those structures, or holding environments, provide the framework for symbolic communications. This holding environment encompasses both verbal and nonverbal art communication," (Robbins, 1987, p. 172). The art product, as the manifestation of this nonverbal communication, becomes an extension of the client and must be respected as such; therefore any art therapy intervention must be considered within the context of the therapeutic relationship. The client's creativity, as well as the therapist's, encompasses the entire psychotherapeutic process (Wadson, 1980, p. 7).

The real relationship between patient and therapist becomes every bit as important as the transference, as the therapist opens himself up and taps the various parts of himself that may mirror, complement, or confront the various internal representations of the patient. In essence, the therapist creates a holding environment in which empathy is the basis of communication. Empathic contact becomes a bipolar bridge that respects defenses while addressing the wish to be understood.

Like the creator of a fine piece of art, the therapist who is receptive to the many levels of verbal and nonverbal communication from his patient communicates back on many levels. (Robbins, 2000, p. 27)

Robbins (2000) described the bipolar bridge as a “psychological space which is projected both in the therapeutic relationship and into the artwork when used. It is a space where the me and you of patient’s and therapist’s pasts find expression through image and symbol.” He explained how those representations express themselves as energy sensation, color, rhythm, volume, and weight. “Slowly, with the artwork and therapist’s holding, organizing, reflecting back the patient’s internal pathological state, the patient is given the chance to play with unresolved polarities and representations to find new integrations and solutions” (p. 27).

This research study explored if and how the use of computer generated art was compatible with and could be integrated with the basic premises, theories and practices of art therapy.

The method used to accomplish the purpose of this study was a web-based survey that was distributed to practicing art therapists in the United States. The survey was designed to determine the current status of integrating computerized digital art making as a medium in art therapy treatment. Some of the topics included in the survey were: 1) the current utilization of computerized art making; 2) the specific methods or computer software programs being used; 3) the clinical populations with whom the computer art making is being implemented by; 4) comparisons with other art media in art therapy; 5) the cognitive, emotional and interpersonal effects of the computerized art making experience within the therapeutic relationship, and, 6) the issues of art storage and confidentiality.

The rationale for addressing the problem was that there was minimal research on the qualities of the art experience and the therapeutic implications of using computer generated art in art therapy. Interest in the uses of technology within art therapy is justified by looking at current trends for its use among the general population and within general counseling practice (Orr, 2006, p. 191). In order to determine the benefits, effects and limitations of using computers as a medium in the practice of art therapy, a systematic inquiry into the nature of computer generated art and its implementation in art therapy in the United States seemed warranted.

Various literature reviewed for the study of how computerized art making can be integrated into art therapy theory and practice included case studies and reports by both mental health practitioners who are not art therapists. These reports addressed specific populations including how computerized art making had been used with psychiatric populations such as schizophrenic and borderline patients as well as physically disabled clients (Hartwich & Brandecker, 1997). It is noteworthy that even though art therapists have published about the use of computers in art therapy, there were no particular clinical case studies included in the current literature.

Peter Hartwich, MD and Rolf Brandecker (1997) wrote an article on the use of computers while working with acute and chronic schizophrenics and borderline patients in an inpatient setting. They were inspired to try a new technique with these patients after investigating the use of technology in psychotherapy for over a decade. This new technique was the use of computers to create art. It was observed how one individual diagnosed with borderline personality disorder, who was in psychotherapeutic treatment, regressed into a psychotic state while using paint. Because of this regression while using traditional media such as paint, the therapists were forced to look for new treatments.

They used computer painting and felt that because of the structure of the computer media and the distance between the patient and the picture, defense mechanisms were supported; therefore computer art was worthwhile exploring further (Hartwich & Brandecker, 1997). The therapists also documented the use of computer art making with a borderline patient who often fell into a psychotic state while painting her memories and dreams. While in a psychotic state, the patient became paranoid and lost contact with reality. The patient would also become aggressive and express suicidal impulses and symptoms of derealization and depersonalization for several hours. The therapists looked for a different therapeutic method that could offer more structure, more rules and more possibilities of supporting her defense mechanisms. Because this patient was able to handle the computer art experience without a psychotic episode, the researchers were encouraged to try this method with individuals with schizophrenia of acute and residual type. The therapists felt that the concreteness of the computer helped to stabilize and strengthen the ego boundary (Hartwich & Brandecker, 1997, p. 369). It is important to note that Hartwich and Brandecker were not art therapists. There are concepts familiar to art therapists such as the use of structured media in order to support defenses, which did not appear to be considered in the above article.

In another reported case, a 38 year old male inpatient who had been suffering from delusions and hallucinations as well as some catatonic features for about three years was engaged in computer art making. With high concentration, he was able to manipulate colors in an intellectual manner. His emotions, which he expressed in colors, were able to be controlled and contained carefully with the structure of the computer program. This seemed to be the containment that this individual with schizophrenia needed; otherwise the ego is in danger of disintegration or even destruction. The

contrasting color-emotions that emerged on the screen were parallel to the psychotic process itself. In this case, it was not in a chaotic and psychotic manner; it was safely controlled by the patient and contained within an intellectual structure. Even though dangerous energies emerged, the patient was able to succeed at keeping his ego boundaries firm (Hartwich & Brandecker, 1997).

For physically disabled patients, fear and frustration in the area of physical dexterity are two experiences that may undermine self-worth. The use of computers for those with physical disabilities is significant because computers can be adapted to compensate for a lack of manual skill necessary for the creation of art. The computer has been cited as providing a powerful instrument for rehabilitative art therapy for physically and mentally disabled patients. For some of the patients with little or no upper extremity fine or gross motor activity, the light pen—which does not have to make direct contact with the graphics tablet—eliminated the need for hand pressure and cumbersome adaptive equipment. The voice command, which used the sound of the voice to activate the computer program, offered another alternative. The speed of the computer could be slowed down to meet the needs of the patient. Also, swift computer activity has the potential to shorten the length of therapy sessions which might encourage the attendance of those suffering from incontinence (Weinberg, 1985). The computer has the capability to store work in progress until the activity can be resumed and this could provide a reminder and basis for reality orientation for brain trauma and stroke patients with memory deficits (Weinberg, 1985, p. 70). The credibility of rehabilitative computer art therapy rests in its potential to offer the disabled accessibility and advantages beyond what has previously been confirmed by conventional rehabilitative art therapy (Weinberg, 1985).

The participants in this study were delimited to practicing art therapists in the United States. The limitations of this study included the possibility that the population of art therapists that the questionnaire was being sent to may have resulted in a small number of responses. It may have also resulted in a population who was comfortable with computers being the majority of participants, and, therefore, the results being skewed more positively. On the other hand, a negative response may have resulted due to participants not being comfortable with computer use.

There were three major questions for this research study:

1. What was the prevalence of digital art making in the field of art therapy?
2. What were the cognitive, emotional and sensory qualities of the computer as an art medium in art therapy?
3. How was the use of computerized art making integrated into art therapy theory and practice?

The objective of this study was to explore the integration of computer generated art into the theory and practice of art therapy. This information could lead to alternative treatments with patients when traditional media may not be an option.

The research question for this study was: How can computerized art making be integrated into art therapy theory and practice? The results of the survey responses indicated the following: Even though art therapists in general (84%) felt that the computer is either very important or important to their practice, they were not using it to create artwork with clients. 14% of the participants who responded to the survey were currently using a computer to create artwork with clients and 27% of the participants who responded to the survey use the computer to create artwork themselves. Even though the participants (86%) did not feel that computerized art making was important in their

practice, overall, the participants felt that this medium should be integrated into graduate studies either as an elective or part of the curriculum. This finding may support that if art therapists had experience and training with this medium, they may be more likely to use it in therapy. Another finding was that there was not a correlation between undergraduate studies and the use of computers in art therapy treatment. A participant with an undergraduate degree in business was no more likely to use a computer in art therapy treatment than a participant with an undergraduate degree in graphic design or fine art. 143 participants reported that the medium used in treatment should be determined based on the patient's needs. This finding is supported by the literature which states that the inherent qualities of the media can impact the client and, therefore, effect treatment as well (Malchiodi, 2007).

It is recommended that further research be conducted to determine the effects of the unique sensory qualities of the computer in contrast to traditional art media during art therapy treatment. The sensory qualities of the computer were a concern of the participants throughout the survey and should be further researched to determine the cognitive, emotional and interpersonal effects of computerized art making on the client during treatment.

CHAPTER 2: LITERATURE REVIEW

Overview

The purpose of this chapter is to provide a contextual review of the extant literature on the use of computers in the field of mental health. This chapter will also review literature in the context of computers being used as a medium in art therapy theory and practice.

The chapter will begin with a review of literature that addresses the use of computers in the field of mental health as well as the medical field. Literature will then be reviewed on the technological aspects of using a computer in the medical field and in the field of mental health and art therapy. The final section of this chapter will review art therapy theory and practice, including the use of art media, the therapeutic relationship and computer generated art as an art therapy medium.

It is important to note that the literature is limited on the use of computers in the above mentioned fields. The literature is especially limited and outdated in regards to the use of computers in art therapy theory and practice.

The Use of Computer Technology in Healthcare

During the last two to three decades, technology and somatic medicine have begun to work together more intensely. New technologies have found their place in internal medicine, especially on intensive care units, in surgery and in related disciplines (Hartwich & Brandecker, 1997, p. 367). In this millennium, it is felt that many specialty areas of healthcare can benefit from the use of computers especially the field of nursing. It is felt that computers along with various forms of information technology can be used to enhance practice, care delivery, and quality of care in psychiatric nursing (Repique, 2007). At this time, healthcare settings are more and more technologically advanced and

consumers are also becoming more adept in the use of these technologies (Repique, 2007, p. 77).

Computers such as handheld devices are now being widely used in the medical profession because of its vast capabilities (Al-Ubaydli, 2004). Doctors expect handheld computers to become more useful, and most seem interested in getting the most value from their use (McAlearney, Schweikhart, Medow, 2004). Handheld computers are suited to clinical practice because they are small, affordable, and easy to use. They can run a wide range of medical software. The devices support clinical teamwork by making it easy to share information with other clinicians. With a few taps on the screen, one can schedule recurring appointments with ease along with easy access to notes, tasks, addresses and appointments (Al-Ubaydli, 2004).

Handheld computers could also be used as an opportunity for doctors to build their comfort with information technology and could be a stepping stone to ehealth initiatives as a means of providing point of care support to improve patient care (McAlearney et al., 2004). Although there are many possibilities for the use of computers in healthcare, there are also barriers (Repique, 2007). In an article describing the uses of computers in healthcare, barriers were identified by users and non-users. Some barriers that were addressed were concerning the device itself, and these barriers included size, limited memory and battery life, and speed of data exchange. Many participants expressed frustration, especially with data entry. Two major personal barriers described by non-users were physical constraints, such as eyesight, and perceptual constraints, including comfort with the device and personal preferences. In contrast, users rarely reported personal barriers and instead described those device features perceived as problematic by non-users as strengths. A strength discussed

included the convenience of portability rather than complaining about a small screen. A major barrier for non-users was that they felt that they did not receive enough value from the devices in order to change their existing patterns of practice (Repique, 2007). Some other barriers discussed in an article pertaining to palmtop computers being used by individuals with intellectual disabilities was the complexity of the operating system and the need for a feature-rich environment while being limited to a small screen. Individuals using such a computer expressed frustration with the small icons on the screen. This barrier was addressed by providing large clickable areas in order for individuals to have less difficulty accessing controls (Stock, Davies, D., Davies, K., & Wehmeyer, 2006).

According to Al-Ubaydii (2004), one potential problem relating to the use of computers in general was security which could have an impact on confidentiality. This issue was addressed in his article on the use of handheld computers being used in the medical profession. He stated that the easiest way to ensure that sensitive data does not get into the wrong hands is to not store sensitive data electronically. If you must store sensitive data, there is software that encrypts the data to allow for safer storage of sensitive data. Encryption does not solve all problems, however, synchronizing with a PC (personal computer), for example, means that a copy of the data is stored on the PC. Because of this, it is important for the PC to be secure.

The next topic for discussion is the idea of a computer-supported distance art therapy model and telehealth. Telehealth is a relatively new area of research and development focusing on the use of telecommunications technologies to increase equality of access to healthcare (Collie & Cubranic, 1999). It is an emerging area of healthcare that is attempting to meet the needs of individuals who cannot access treatment facilities (Peterson, Stovall, Elkins, Parker-Bell, 2005). The need for telehealth in a growing

population of elderly and immobile patients is an important issue to consider when thinking about treatment plans (Collie & Cubranic, 1999).

This model is being used currently for people with traumatic illness along with other populations in the field of art therapy. The rationale for the use of computer-supported distance art therapy is based on four current trends: (a) the aging of the population, (b) a shift in focus in the field of telehealth, (c) an increase in psychosocial treatments for people with traumatic physical illnesses, and (d) the recent burgeoning of the art and healing movement. Forms of telehealth such as computer-supported distance art therapy have both a technical and a human dimension, which need to be developed in parallel (Collie & Cubranic, 2002, p. 155).

Some factors have been identified that may make mediated communications superior to face-to-face communication in some instances. Rutter (1987) claims there might be types of psychological proximity that are only possible when the people communicating are not face-to-face. Furthermore, mediated communication may surpass what is possible in face-to-face communication due to such things as the tendency to idealize a communication partner who is providing few social cues, the opportunity to be favorably selective about the cues one provides, and the fact that less energy is expended on monitoring social cues according to Walther (1996). Various authors have suggested that no-sight communication may be disinhibiting in ways that could enhance counseling (Collie, Cubranic & Long, 2002, p. 271).

The Use of Computer Technology in the Field of Mental Health

The influx of computers and various forms of information technologies have changed the way health care is provided, delivered, and accessed today (Hartwich & Brandecker, 1997).

In the past, the fields of psychiatry and psychotherapy were reluctant to allow technical tools into the therapy session (Fryrear & Corbit, 1992). It was felt that therapists belonged to a tradition which was not only skeptical about introducing technology, but also saw it as impeding creativity or even as dehumanizing. The seeming contradiction between psychotherapy and technology has changed into a complementary relationship to be expanded on in the future (Hartwich & Brandecker, 1997, p. 367).

Several articles relating to the use of computers in mental health were reviewed. In one article specific to the use of computers being used in psychiatric nursing, three major areas were identified namely education, practice and research. The article looked at psychiatric nurses being among 60% of the U.S. labor force described by Whitten, Bentley, and Dittman (2001) as “knowledge workers,” and whose jobs involved the collection of data, processing of information, and development of knowledge. In an age of information revolution, the voluminous amount of information and the rate at which it is made available poses a significant challenge to psychiatric nurses as knowledge workers. Repique (2007) described in the article the importance of computers and information technologies in psychiatric nursing and acknowledged that information technology is paramount and cannot be overstated (p. 78).

Jones (2000) recognized that psychiatric nursing has been significantly transformed by the advent of computers and, in particular, the Internet has changed the way psychiatric nurses and mental healthcare consumers access information. It is inevitable that computers and information technologies will become mainstay in psychiatric nursing because mental health care in this country will continue its transformation with information technology as one of the primary drivers.

On the other hand, there has been a good deal of prejudice about computer techniques being used in psychotherapy. In one article, some people talked fearfully about an artificial brain or an artificial relationship (Hartwich & Brandecker, 1997). Because of this perception, more extensive research is needed in order to determine the benefits or detriments to using computer techniques in mental health.

Computerized programs have been used for a number of years for assessment, diagnosis and education (Bloom and Newman, 1992), but the most controversial had been their use for psychological treatment at that time. Acceptance by patients for the use of computers in treatment had been high. The primary resistance had been from clinicians according to Wright & Wright (1997). It is important to research this further at a time when technology is being more widely used. Issues relating to safety, efficacy and cost have been raised as objections to computer-based therapy, but research evidence suggests the opposite. Computer therapy programs have been shown to be safe. In fact, patients were more likely to disclose suicidal plans to a computer than to a human being according to Greist (1973). Once again, the literature is limited and outdated, and, therefore, further research is recommended. Computer therapy programs have been successfully used to treat depression, panic disorders, obesity, smoking, phobias, chronic pain, sexual dysfunction and obsessive-compulsive disorder. Furthermore, computers provide the capacity to store, analyze, and display data, which can be fed back to clinicians. In an article describing the benefits to using a computer, it was stated that a computer doesn't get tired, or have off days, and they can be made widely available. They also encourage the patient to take responsibility for their own treatment and allow them to work at their own pace, thereby, fostering mastery and control (Proudfoot, J.,

Swain, S., Widmer, S., Watkins, E., Goldberg, D., Marks, I., Mann, A., and Gray, J.A., 2003).

Disadvantages of the use of computers include the initial costs for hardware and software, including costs to update computer systems and software. Further resources may be required, including administrative staff and rooms to store computers in. Clinical staff may not be supportive and may not be eager to engage in training, patients may decline to use computers or may not have the requisite skills, and their use on home visits may be impractical (Parkin, 2000).

Proudfoot et al. (2003) described in their article how a short-term, present-focused, psycho educational treatment such as Cognitive Behavioral Therapy (CBT) is especially suited to computer-delivered psychotherapy. In such a treatment, the therapist teaches the patient to monitor automatic thoughts; recognize the connection between cognition, emotion, behavior and physiology; conduct experiments; identify distorted beliefs that predispose the individual to unhelpful interpretations and behavior, collect evidence and generate alternate interpretations; and substitute more helpful cognitions (p. 279).

Proudfoot et al. (2003) also described the many challenges to developing such software that would accommodate clients. Many factors come into play such as technical difficulties with the software and hardware, re-writing of scripts, building of the software engine, and instability of the software. These factors are critical in keeping with the therapeutic strategies. Another challenge was to ensure that the IT (information technology) provided the support or environment in which the clinical function was implemented, rather than the information-processing capabilities of the computer determining the therapeutic experience for the patient (p. 278).

The use of computers in the treatment of childhood psychiatric disorders followed developments in adult mental health. Software that mimics the human-human therapeutic relationship was first developed in the 1960s. Popular computer fantasy games have been used in child psychiatry to address issues of impulse control, long term planning, and peer relationships, but with no evidence that any apparent gains during treatment are retained long term (Parkin, 2000, p. 615). Much of the research around this topic fails to consider the issue that young people are now being introduced to computers in primary schools (Denham, 1993). Parkin (2000) described how children and adolescents with attention deficit disorder can benefit from a computerized cognitive training system. Measures of behavior before and after training demonstrated that those children who performed well in the training showed improved behavior.

According to Parkin (2000), children with emotional or behavioral problems seemed to make appropriate use of a program designed to encourage expression through the use of "thought" and "speech" in which bubbles in a comic strip environment were used. There were no outcome studies available at that time. An uncontrolled study of a program designed to help families come to terms with divorce suggested that it encouraged parents and adolescents to show increased understanding and communication and decreased conflict related to the divorce. According to Parkin (2000), a controlled study of this program is needed. Another program was designed to help children with difficulties communicating deal with issues around their traumatic experiences. The program used pictorial and metaphorical dialogue that facilitated both assessment and therapeutic work, but again, controlled outcome studies were recommended at that time (Parkin, 2000, p. 616).

Computer programs have been developed to assist children with learning disabilities. Children with Down's syndrome and with severe language problems had shown significantly greater progress with computer based training than standard training in language and social communication. Children with Down's syndrome and autism who had failed tests of false belief can be taught false belief using a program specifically designed for this purpose (Parkin, 2000, p. 616). Computer art opens the way to communication by arousing curiosity which encourages patients' psychosocial skills (Weinberg, 1985, p. 71).

Parkin (2000) described a study in which 42 single mothers were part of a computer mediated social support network created to address parenting issues. There was evidence that some parents could benefit from computer assisted interventions. The mothers reported less stress during parenting while using the network and the "virtual group" was able to develop a sense of community.

Virtual environments, or virtual reality, have also been used in clinical practice. These are computer generated environments that provide continuous stimuli to one or more senses and usually include a visual three dimensional representation that responds in real time to the user (Parkin, 2000, p. 616). Virtual environments have been used to support the treatment of anorexia nervosa among other disorders. Controlled outcome studies have shown virtual environments designed for children with severe learning disabilities to be a safe and efficacious means of training in daily living skills and in increasing self initiated activity. Computer use by children has been claimed to have both beneficial and detrimental effects (Ford-Jones, 2003; Straker and Pollock, 2005). Beneficial effects of computer use discussed have included enhanced learning, social interaction, and fine motor coordination. Detrimental effects of computer use proposed

have included addiction, social harm, visual problems and musculoskeletal disorders (Straker, L., Pollack, C., and Burgess-Limerick, 2006). Along with the benefits of virtual environments, there are many detriments to the use of the Internet, especially where children are concerned. These issues will not be addressed in this paper but can be found in Straker et al. (2006).

As far back as 1987, creative adjunctive counseling techniques using an electronic art medium were being used in an effort to stimulate interaction between the counselor and the child (Johnson, 1987). Parkin (2000) expressed that there is a wide range of uses for computers in clinical practice. However, their use at present is largely limited to computerized versions of written tests or interviews (p. 617). Technologies such as voice activated software, graphics, measuring response time, tailored testing, and virtual environments may benefit future developments. Outcome studies will be needed to assess the impact of such technology (Parkin, 2000). According to Parkin, computers have not yet been used to their full potential in clinical practice (2000).

Art Therapy Theory and Practice

Over the years, art therapy as a discipline has grown rapidly and its definition has gone through many changes. Fink, Levick and Goldman (as cited in Levick, 1983, p. 3) define art therapy as that discipline which combines elements of psychotherapy with untapped sources of creativity and expression in the patient.

Art expression as a therapeutic tool was practiced in the 1940s and 1950s by pioneers Margaret Naumburg and Edith Kramer, and art therapy became recognized as a profession in the 1960s (Wadeson, 1980). According to the American Art Therapy Association (AATA),

Art therapy is an established mental health profession that uses the creative process of art making to improve and enhance the physical, mental and emotional well-being of individuals of all ages. It is based on the belief that the creative process involved in artistic self-expression helps people to resolve conflicts and problems, develop interpersonal skills, manage behavior, reduce stress, increase self-esteem and self-awareness, and achieve insight. Art therapy integrates the fields of human development, visual art (drawing, painting, sculpture, and other art forms), and the creative process with models of counseling and psychotherapy. Art therapy is used with children, adolescents, adults, older adults, groups, and families to assess and treat the following: anxiety, depression, and other mental and emotional problems and disorders; mental illness; substance abuse and other addictions; family and relationship issues; abuse and domestic violence; social and emotional difficulties related to disability and illness; trauma and loss; physical, cognitive, and neurological problems; and psychosocial difficulties related to medical illness. Art therapy programs are found in a number of settings including hospitals, clinics, public and community agencies, wellness centers, educational institutions, businesses, and private practices. Art therapists are master's level professionals who hold a degree in art therapy or a related field. Educational requirements include: theories of art therapy, counseling, and psychotherapy; ethics and standards of practice; assessment and evaluation; individual, group, and family

techniques; human and creative development; multicultural issues; research methods; and practicum experiences in clinical, community, and/or other settings. Art therapists are skilled in the application of a variety of art modalities (drawing, painting, sculpture, and other media) for assessment and treatment. (American Art Therapy Association, 2008)

According to Naumburg (1987),

the process of dynamically oriented art therapy is based on the recognition that man's fundamental thoughts and feelings are derived from the unconscious and often reach expression in images rather than in words. By means of pictorial projection, art therapy encourages a method of symbolic communication between patient and therapist (p. 1).

Not all practicing art therapists view man's behavior as a product of unconscious thoughts and feelings. Historically and up until the present, training in the field embraces many orientations such as behavioral modification, Gestalt, client-centered, humanistic, among many others (Levick, 1983). In her book, *Approaches to Art Therapy Theory and Technique*, Judith Rubin outlines these different orientations in greater detail (Rubin, 2001).

The psychoanalytic approach to ego mechanisms of defense is the basis for treatment methods in art therapy (Levick, 1983, p. 8).

Art Therapy Theory and Media

According to Robbins (1987),

although there are inherent qualities in any given art material that may make it more or less appropriate for use with any given diagnostic

category, art materials can be used in a multitude of ways to promote an ever adapting holding environment sensitive to patient's changing levels of ego integration, defenses, resistances, object representations, and the like (p. 104).

These inherent qualities are very important to the field of art therapy. For example, both finger paint and clay are regressive and “messy” and have the capacity to be done and undone multiple times, providing the opportunity to smash down or remake a clay sculpture, or to make a series of images in finger paint, smearing over between each (Rubin, 1984, p. 58). It is believed in art therapy that each material has its own properties and patients will respond to some materials rather than others at different times depending on their needs (Waller, 2004). There is an assumption in art therapy that the greater range of choice in art materials available, the greater the range of expression and communication available to the patient. However, too wide a range of materials offered can result in inhibition on the part of the patient (Waller, 2004, p. 53).

An important media characteristic is control. Some materials are easy to control, especially those that are more precise such as pencils. In contrast, water paints offer fluidity but are difficult to control (Wadson, 1987, p. 36). Some materials are more permanent such as markers. There is little possibility for the client to undo. Clay is at the opposite end of the spectrum. It offers opportunities for the client to make endless changes to the art work. Therefore, in addition to its tactile quality and three-dimensionality, clay would be a good choice of media to allow for creating transformations (Wadson, 1987).

Art making is a hands-on activity. It involves constructing, arranging, mixing, touching, molding, gluing, drawing, stapling, painting, forming, and other tangible experiences. Drawing, painting, and sculpting are also psychomotor experiences. They are sensory in nature because they include vision, touch, movement, sound and other senses—through scribbling on paper, play, and pretend (Malchiodi, 2007).

Art making provides sensory qualities that often provide a way for the client to tap into their emotions and perceptions more easily than with words alone. In cases of emotional trauma, loss, or abuse, art making offers a way to reintegrate complex emotions that are expressed through the senses. Because the tactile aspects of art materials—for example, working with clay, pastels or paints—can be self-soothing and relaxing, art making also may assist the process of emotional reparation and healing. The sensory qualities of art expression are helpful not only in reducing stress but also in recalling and reframing the felt sense of traumatic memories, grief and loss (Malchiodi, 2007).

Robbins (2000) stated that art materials are “an organic part of theory, technique and the processes of creativity development and therapeutic change,” (p.104). Although there are certain qualities with any art material that may make it more or less appropriate for use with a specific clinical population, art materials can be used in a multitude of ways to promote an ever adapting holding environment that is sensitive to a patient’s changing levels of ego integration, defenses, resistances, object representations, etc. (Robbins, 2000). Art therapists make media choices in treatment based on assessing the psychological development, psychodynamics such as ego functions, and the level of object relations maturity of art therapy clients (Robbins, 2000).

Properties of art materials compose the foundation knowledge necessary for art therapy. It is important in art therapy to take this knowledge and be sensitive of the client's needs. There may be times when the therapist would want to support defenses by offering the client a more rigid or constrictive medium such as pencil. At other times, the therapist may wish to encourage the same patient to break through defenses by offering a medium that has less control such as paint. In any event, the choice of media should be up to the client, but at times, the therapist may need to encourage the client to try something new (Wadeson, 1997).

Materials need to be adequate not elaborate. The quality of the therapeutic relationship is far more important than the quality of the art supplies. It is important to keep this balance in perspective while considering media. Nevertheless, gross inadequacies in supplies can hamper the art therapy process (Wadeson, 1987, p. 38).

Computer Art Therapy and Computer Art with Specific Populations

For art therapy, the strides made in computer technology and digital imagery may be even more important as these advances have created opportunities to incorporate digital media such as photography and videotape as well as computer painting and photo programs into art psychotherapy. These electronic arts can offer clients new ways to express themselves creatively (Malchiodi, 2000).

The computer, when seen as one of many media available to art therapists, offers unique possibilities for practical application. The keyboard can be sanitized for use in hospital settings. The computer can be easily rolled to a bedside or a recreation room, and then stored in a closet. There is no mess to clean up, no supplies to assemble. Clients can save their work in stages, reverting to a previous version if an experimental technique turns out "wrong." The artwork, once saved, can be easily copied, shared, and

stored. Collections of client work can be viewed through a presentation program as a slide show for review with clients or in staff meetings (McLeod, 1999).

Expressive art has long been used in counseling children. For psychoanalytically oriented counselors, drawing is a preferred projective technique because young children have difficulty with free association (Johnson, 1987, p. 262). Many possibilities have been outlined (Dinkmeyer & Carlson, 1983). The possibilities have been expanded upon over the last 20 years. One creative adjunctive counseling technique is the use of an electronic art medium to stimulate interaction between the counselor and the student (Johnson, 1987, p. 262). Johnson (1987) felt that computer art is a way of enhancing communication between the child and the counselor and offers a projective assessment tool. Additionally, computer art can be used as a medium for looking at new ways of perceiving oneself and exploring more adequate coping behaviors (p. 264).

In a case study conducted with a 10 year old boy who was coping with the death of his father, the computer was introduced as a medium to create artwork. As with other media used in art therapy, the boy was able to express his feelings around his loss which resulted in less distress and dependence on his mother (Johnson, 1987). Using computer art had opened a channel of communication through which the boy was able to express some troublesome emotions. The major advantages of using the computer as a graphic art tool in counseling were its ease of use, motivational aspect and facilitation of relationships (Johnson, 1987, p. 265).

In a study conducted on computer projective drawings of juvenile offenders and college freshmen, willingness to draw on a personal computer was observed. The purpose of the study was to see if these two separate groups (offenders and non-offenders) would readily draw on the computer. The study was conducted due to the

advent of computers and the many advantages of using a computer in art therapy which includes that they save time, minimize clean-up, the ease of storage, and printing capabilities. The study examined what each group would draw given three choices of topics, as the researcher was interested to see if one group would draw more or less of one topic than the other group. The study resulted in no significant difference between the two groups in content of drawing and both groups were willing to draw on a personal computer (Maroldo, 1990).

In a pilot study used to explore the meaning and experience of computers to a group of homeless men living in long-term shelters, it was found that because they lacked computer knowledge and had a fear of failure, these men did not seek out computers that were available through public access (Miller, K., Bunch-Harrison, S., Brumbaugh, B., Kutty, R, FitzGerald, K., 2005). The need for access to computers, the potential use of computers as a medium for intervention, and the meaning of computers to these men who represent the digital divide are described in this study (Miller et al., 2005, p 191). The digital divide is defined as “the divide between those with access to new technologies and those without” (U.S. Department of Commerce, 2000, p. 1).

Computers have not typically been found in the community programs that provide services to underserved adults who may have chronic mental illness, substance abuse issues, or disabilities (Miller et al., 2005, p. 192).

Most occupational therapy literature related to computers has focused on assistive technology, computer-aided instruction, and management applications. A recent study explored the experience with and perception of computers by a population that represents the digital divide, homeless men (Miller et al., 2005, p. 193). The study consisted of seven adult males and was a convenience sample of men residing in long-term shelter

beds of one of the largest men's shelter in a large urban community. The men were individually interviewed to begin to understand homeless men's perceptions of computers (Miller et al., 2005).

In this study, three themes emerged: access to computers; computers as a bridge to life-skill development; and changed self-perceptions as a result of connecting with technology. The men described the computer as a relevant bridge for building life skills. Six of the seven men reported that the computer was a tool that enabled them to work toward personal goals such as managing stress, managing time, doing research through the internet on topics of importance, organizing personal documents, writing resumes, focusing thinking, and dealing with fear of new skills. These men used the computer to play games, participate in creative expression activities through writing poetry and letters, develop literacy skills on a level where they could be successful, and learn basic math concepts. Computers served as a medium for the men to achieve client-centered goals and develop confidence in learning new skills (Miller et al., 2005, p. 196).

Some of the literature reviewed for the study of how computerized art making can be integrated into art therapy theory and practice includes case studies and reports by mental health practitioners who are not art therapists. These reports address specific populations including how computerized art making has been used with psychiatric populations such as schizophrenic and borderline patients as well as physically disabled clients (Hartwich & Brandecker, 1997). It is noteworthy that even though art therapists have published about the use of computers in art therapy, there are no particular clinical case studies included in the current literature.

Peter Hartwich, MD and Rolf Brandecker (1997) wrote an article on the use of computers while working with acute and chronic schizophrenics and borderline patients

in an inpatient setting. It is important to note that although the authors are not art therapists, Peter Hartwich is a professor and a physician who specializes in psychiatry, neurology, psychotherapy with additional analytical training at the C.G. Jung Institute in Zurich, Switzerland and has worked for more than 25 years with psychotic patients. Rolf Brandecker is an occupational therapist who has been working in the field of art therapy for more than 10 years.

The authors were inspired to try a new technique with these patients after investigating the use of technology in psychotherapy for over a decade. This new technique was the use of computers to create art. It was observed how one individual diagnosed with borderline personality disorder, and was in psychotherapeutic treatment, regressed into a psychotic state while using paint. Because of this regression while using traditional media such as paint, the therapists were forced to look for new treatments. They used computer painting and felt that because of the structure of the computer media and the distance between the patient and the picture, defense mechanisms were supported; therefore computer art was worthwhile exploring further (Hartwich & Brandecker, 1997). The therapists also documented the use of computer art making with a borderline patient who often fell into a psychotic state while painting her memories and dreams. While in a psychotic state, the patient became paranoid and lost contact with reality. The patient would also become aggressive and express suicidal impulses and symptoms of derealization and depersonalization for several hours. The therapists looked for a different therapeutic method that could offer more structure, more rules and more possibilities of supporting her defense mechanisms. Because this patient was able to handle the computer art experience without a psychotic episode, the researchers were encouraged to try this method with individuals with schizophrenia of acute and residual

type. The therapists felt that the concreteness of the computer helped to stabilize and strengthen the ego boundary (Hartwich & Brandecker, 1997, p. 369). It is important to note that Hartwich and Brandecker were not art therapists. There are concepts familiar to art therapists such as the use of structured media in order to support defenses and diminish regression, which did not appear to be considered in the above article.

In another reported case, a 38 year old male inpatient who had been suffering from delusions and hallucinations as well as some catatonic features for about three years was engaged in computer art making. With high concentration, he was able to manipulate colors in an intellectual manner. His emotions, which he expressed in colors, were able to be controlled and contained carefully with the structure of the computer program. This seemed to be the containment that this individual with schizophrenia needed; otherwise the ego is in danger of disintegration or even destruction. The contrasting color-emotions that emerged on the screen were parallel to the psychotic process itself. In this case, it was not in a chaotic and psychotic manner; it was safely controlled by the patient and contained within an intellectual structure. Even though dangerous energies emerged, the patient was able to succeed at keeping his ego boundaries firm. The logic of the computer is that it is protective according to Hartwich & Brandecker (1997).

For physically disabled patients, fear and frustration in the area of physical dexterity are two experiences that may undermine self-worth. The use of computers for the handicapped is significant because computers can be adapted to compensate for a lack of manual skill necessary for the creation of art. The computer has been cited as providing a powerful instrument for rehabilitative art therapy for physically and mentally disabled patients. For some of the patients with little or no upper extremity fine or gross

motor activity, the light pen—which does not have to make direct contact with the graphics tablet—eliminated the need for hand pressure and cumbersome adaptive equipment. The voice command, which used the sound of the voice to activate the computer program, offered another alternative. The speed of the computer could be slowed down to meet the needs of the patient. Also, swift computer activity has the potential to shorten the length of therapy sessions which might encourage the attendance of those suffering from incontinence. The computer has the capability to store work in progress until the activity can be resumed and this could provide a reminder and basis for reality orientation for brain trauma and stroke patients with memory deficits (Weinberg, 1985, p. 70). The credibility of rehabilitative computer art therapy rests in its potential to offer the disabled accessibility and advantages beyond what has previously been confirmed by conventional rehabilitative art therapy (Weinberg, 1985).

In summary, the expansion of materials used in art therapy seems to be limited only by our vision of possibilities (McNiff, 1999, p, 197).

Technological Aspects of Art Therapy and Computers

The emergence of computer technologies has generated a major new expansion in the visual arts. The digital revolution has occurred largely in the commercial area of graphic design and is only beginning to be adopted by independent artists (McNiff, 2005, p. 197). As computer technology increasingly impacts people's lives in terms of communication and information, it has naturally affected how health-care professionals, including art therapists, engage with their patients or clients. This way of interacting with others, both locally and at a distance, has become part of most health-care professionals' work and daily lives (Malchiodi, 2000, p. 14).

Much of the experimentation with new media took place at a time when conservative voices in art therapy insisted that the discipline should be restricted to drawing, painting, and modeling with clay (McNiff, 2005, p.197). Canter (1987, 1989), asked how computers could be useful to the field of art therapy. At one point Canter (as cited in Gussak & Nyce, 2005) wrote, “Using computers allows...clients to express themselves...while at the same time keeping their hands clean” (1989, p. 297). This did not appear to be an appropriate argument for the use of computers, particularly in art therapy where getting clients involved with the materials may be rewarding as well as necessary (Gussak & Nyce, 2005).

As the field of art therapy grows and develops, it is constantly integrating new tools to meet the needs of clients (Orr, 2006, p. 191). Professional counseling associations have demonstrated the importance technologies are having in their fields and for their clients by devoting entire journal issues to technology-related topics (Peterson et al., 2005, p. 139). The field of art therapy is increasingly influenced by the tremendous growth in the use of computers by professionals and the general public.

Peterson et al. (2005) stated that many art therapists have found that computers and digital imagery technology (DIT) have benefits over traditional practices and that technology is influencing the way art therapists practice. These influences include the way art therapists archive artwork, record progress notes, and communicate with each other. Digital imagery technology is also influencing the services that are provided to individuals living in rural areas, providing art production adaptations for disabled persons, and influencing how art therapists are producing their own artwork (Peterson et al., 2005).

A study was conducted to understand the impact of technology on art therapists. The study looked at how art therapists own and use technology and if there were barriers to ownership of a computer. Although art therapists have written about their use of and experiences with technology according to Peterson et al. (2005), quantifiable information has not been obtained addressing exactly how many in the field use technology, what forms of technology are being used, and how technology is being used (Peterson et al., 2006). This study had many limitations in that it was generalized to the American Art Therapy Association (AATA) population at a national conference. The participants were not asked if they were working with clients that would have clarified if the participants were deliberately not using technology with clients or if they did not have clients. Many professional associations in other fields have realized the importance of technology and that it can neither be ignored nor universally implemented (Peterson et al., 2006).

Integrating Technology into Art Therapy Theory and Practice

Computer art has been used with children in play therapy since the 1990's. In an article written about the use of play therapy, computers were used as a way of enhancing communication between the child and the counselor. It was believed that the computer offered a projective assessment tool as well as a medium for looking at new ways of perceiving self and exploring new and more adequate coping behaviors (Johnson, 1993).

The initial phase in play therapy using the computer as an art medium is diagnostic and relationship building. The child is given a great deal of freedom about what to draw and what colors to choose. The counselor encourages the child to talk about the drawings but does not direct or make interpretations. When the relationship between the counselor and the child has been established, interpretations are made, but indirectly at first (Johnson, 1993, p. 286).

In this article, the microcomputer was used as a creative medium in art therapy using a graphics pad and counseling approaches developed with more traditional media. The counseling techniques used with this graphic arts medium were taken from Nickerson (1983) and Winnicott (1971) who describe the use of art in play therapy. The children who had the opportunity to use the computer as part of their counseling looked forward to their sessions and this initial experience of using the computer in therapy has encouraged the author of this article to continue exploring its applications in counseling. The computer may offer a play medium that captures children's interest and provides a novel way to do things that have customarily been done in art. Johnson (1993) stated in this article that perhaps with continued experimentation, a unique contribution of the computer in therapy may be identified. At this point, in addition to its ease of use, the computer's major advantage is the interest it generates in children and in the counselors using it (Johnson, 1993, p. 286).

Malchiodi (1999) discussed in her article that there are art therapists who see possibilities for creative expression, therapeutic intervention, education, and online communication, pioneers who are exploring and developing the use of computer-related technologies in assessment, treatment, and intervention. Inclusivity of client populations and sensitivity to individual needs, particularly people with disabilities, illnesses, or physical limitations that limit involvement in traditional therapy, have guided art therapists in exploring computers as a possibility for self-expression and therapeutic intervention. The emergence of computer technology in the field of art therapy roughly parallels the increase in the use of computers by the general public, a relatively recent phenomenon of the 1980s and 1990s (Malchiodi, 1999).

The field of art therapy, like other areas of health care, is increasingly influenced by the tremendous growth in the use of computers by professionals and the general public, the presence of the Internet, the proliferation of electronic communication, and the expansion of “computer-mediated” therapy (Malchiodi, 2000). Professional counseling associations have demonstrated the importance technologies are having in their fields and to their clients by devoting entire journal issues to technology-related topics (Peterson et al., 2005). For art therapy, the strides made in computer technology and digital imagery may be even more important as they have opened up opportunities to incorporate digital media such as photography and videotape as well as computer painting and photo programs in therapy, electronic arts that can offer clients new ways to express themselves creatively (Malchiodi, 2000, p. 13).

The rationale for addressing the issue of telehealth has been derived from four current trends: (a) the aging of the North American population, (b) a shift of focus in the field of telehealth, (c) an increase in psychosocial treatments for people with traumatic physical illnesses, and (d) the recent burgeoning of the art and healing movement (Collie & Cubranic, 2002, p. 158).

Pioneers of Computer Art Therapy

In the 1980s, very few art therapists were writing about work with computers within the practice of art therapy. Diane Weinberg (1985) wrote one of the first published articles relating to this topic. The interface of art therapy and computers was addressed, focusing on the potential of computers for patients with physical limitations such as quadriplegia, stroke, or brain trauma. Because of the population with which she worked, Weinberg was prompted to explore computer art therapy as a rehabilitative support to conventional art therapy.

Weinberg (1985) also noted the possibilities computers had in monitoring patients' cognitive abilities. For example, because computers have the capability to recognize and remember decisions made about composition, color, and design, they could conceivably be used to record for research purposes how patients use them to make decisions, problem solving, and express themselves creatively. There are growing numbers of art therapists who see possibilities for creative expression, therapeutic intervention, education, and online communication as stated by Malchiodi (1999). Malchiodi (1999) discussed that pioneers are exploring and developing the use of computer-related technologies in assessment, treatment, and intervention. In the 1980s, very few art therapists were writing about work with computers within the practice of art therapy. One of the first published articles was by Diane Weinberg (1985). She addressed the interface of art therapy and computers, focusing on the potential of computers for patients with physical limitations such as quadriplegia, stroke, or brain trauma. Because of the population with which she worked, Weinberg was prompted to explore computer art therapy as a rehabilitative support to conventional art therapy.

Malchiodi (1999) believed that Weinberg was somewhat of a visionary when looking at the possibilities for computer art therapy in an area that we had yet to scratch the surface of. Her interests in the area of learning just how people interface creatively and therapeutically with computer technology and how we could use this technology in art therapy research has been noteworthy to the area of computer art therapy.

Art therapist Devorah Samet Canter (1989) appeared on the scene in the late 1980s and, like Weinberg (1985), was far ahead of the field in her vision and enthusiasm for computers' interface with art therapy. She brought live demonstrations of computer technology to national conferences of the American Art Therapy Association and later

wrote a book chapter entitled “Art Therapy and Computers.” In it, Canter made a convincing case for why computers would be a medium of choice in work with children and adolescents in particular, populations that have come to know and feel comfortable with computers at an early age. For example, she noted that learning disabled children and adolescents experience success not achieved in other contexts through computer communication and offered the clinical observation that computers foster increased concentration skills and improved self-esteem due to the experience of mastery.

Art therapists are also now actively using computer technology to develop new ways to offer clients therapeutic experiences using drawing, painting and photo software. Barbara Parker-Bell (1999a, 1999b), who is an art therapist, is a leader in this area of research and has extensively explored how art therapists can use various graphics software as interactive and creative tools. In her article, she examined the need for art therapists to explore computer applications for art therapy. The article expressed art therapists’ fears around the use of computer art programs. One fear addressed was that these computer programs will “seduce” the clients into a virtual reality separate from the physical reality of traditional media (Parker-Bell, 1999). Parker-Bell (1999) also stated that “while there is legitimate concern about possible misuse and addiction to computer games or the Internet, it is unfair to assign only a negative value to computer use” (p. 180).

Carol McLeod (1999), also an art therapist, pioneered the use of computers and software in her work in schools, demonstrating how this technology can enhance creative expression for not only children and adolescents, but for people of all ages. Hospitals are also using computer technology to enhance patients’ abilities to express and cope with feelings about illness and hospitalization (Starbright Foundation, 2008), both through

encouraging patients to use graphics software and to participate in electronic communication to establish social support from others beyond their hospital bed.

Art therapists are using computer and digital technology as their own “virtual art studio,” a medium not only for therapeutic intervention with clients, but also a vehicle for therapists’ own self-expression (Malchiodi, 2000, p. 28).

When Carol McLeod, an art therapist, first introduced the computer as a medium for art therapy 10 years ago as a student in art therapy, the most common concerns were the coldness and separation associated with putting a machine between the client and the art. Drawing with a stylus or a mouse seemed to present an awkward barrier to art production for therapists trying the medium for the first time in workshops. It is apparent that people who grow-up playing video and computer games have few problems making the transition between dimensional and computer art activities. What comes to the surface with traditional art materials comes out with electronic media, as well, and the process has also become affordable (McLeod, 1999, p 201).

Canter (as cited in Wadeson, Durkin & Perach, 1989) felt that by applying computers and creativity software in art therapy sessions, the art therapist would have a better insight into their clients’ world and further their client’s technological advancement. In her publication, she discussed how children with learning disabilities have difficulty expressing themselves through the use of common art material because of problems with fine motor coordination and/or impulsive or destructive personalities. Using computers allows these clients to express themselves in ways they hadn’t before while, at the same time, they are able to keep their hands clean.

Children and adolescents with behavioral and emotional difficulties are able to control hyperactive, manipulative, or destructive behavior in mastering the computer. It

provides a world for them to build new sets of learning skills in which they can transfer their way of thinking about themselves and others. In creating their own world, clients can build an environment in which they can be successful and feel positive about their achievements (Wadeson, Durkin, & Perach, 1989).

Because of their acting-out behavior, children and adolescents with behavioral and emotional problems tend to be treated negatively in their school surroundings. Often they are unable to achieve successfully in such school surroundings due to their emotional insecurity. In art therapy, the computer can create an environment that is creative, smart and friendly. Working with the computer can enhance a student's self-esteem because the student is in control and can achieve intellectually while focusing on creative problems, in an environment without conflict. The software programs are challenging and interesting, so they hold the client's attention. Clients with learning disabilities are able to concentrate and work longer on drawings at the computer because there are a variety of creative possibilities to be explored and because the computer is simple to use (Wadeson et al., 1989).

Slow learners have very little difficulty learning how to control the computer and are intrigued by the limitless possibilities. Children and adolescents who are overly dependent on the therapist's attention when they are using other art media do not need extra attention while working with the computer and do not become frustrated by having to learn the necessary procedures to make the computer work (Wadeson et al., 1989, p. 302).

McLeod (1999) stated that the best part of computer-assisted art therapy is the empowerment for clients who find natural dimensional art media limiting. Clients with physical limitations when using traditional media have the ability to create artwork more

easily with drawing tools provided in the computer software. The computer offers special effect tools, designed to simulate brush strokes, smeared pastels, and air brush spatters, which gives clients without confidence the ability to explore techniques that often discourage beginners. The novelty of using computers helps break barriers in working with adolescents and other reluctant, non-communicative clients.

The process of computer art is no longer restrictive or difficult to master. Programs are set up in a very intuitive manner, with icons that are easily recognized representing tool functions that are easily accessed on the computer screen. These tools are selected with a click of a button. Many software tools mimic dimensional media functions. For instance, pressure-sensitive functions allow the crayon and chalk tools to add thicker color each time the mouse or stylus scrubs across the screen. Texture tools add canvas, sandpaper, even snakeskin patterns underneath the soft drawing tool marks. Smear or smudge tools add a fantasy-like quality, softening edges like working with dimensional pastels. The potential for developing techniques using the computer for art therapy is limited only by the therapist's creativity and understanding of the process, just as in any other art medium (McLeod, 1999).

Kate Collie and Davor Cubranic (Collie 1998; Collie and Cubranic 1999) are at the forefront of developing art therapy services with a telehealth model in mind and have conducted research on just how art therapy could be effectively offered through existing telehealth and computer technology. They were developing ways to create distance art-based psychosocial services for people with cancer or other traumatic illnesses and a framework for designing real-time (synchronous) art therapy telehealth services (Malchiodi, 2000, p. 28).

The ideas about art therapy and telehealth emerged from a cross-disciplinary research project conducted as a collaboration between Kate Collie, MFA, MA, and Davor Cubranic, MSc, in Vancouver, British Columbia, Canada, one an artist and a counselor and the other a computer scientist. The project was an exploratory study of telehealth issues in which computer-supported distance art therapy is used as an example of a low-cost, innovative alternative to the usual forms of distance mental health services. The purpose was to outline issues specifically pertaining to distance art therapy that arose during the first phase of the participatory design process, and to show how computer-supported distance art therapy could be uniquely suited to telehealth (Collie, 1999).

Telehealth was a relatively new area of research and development focused on the use of telecommunications technologies to increase equality of access to health care (Collie, 1999, p. 186). It was felt that communication media could be used to overcome some of the barriers that had caused certain people to be underserved, such as the elderly, people in remote areas, people who are home-based or home-bound, people outside the cultural mainstream, people in lower socioeconomic groups, and people with disabilities or disabling illnesses according to Brauer (1992). Telehealth encompasses both physical and mental health education.

As the project was being planned, the researchers were thinking specifically of addressing the needs of people whose mobility is limited due to chronic illness—a group that is expected to expand dramatically as the population ages (Collie & Cubranic, 1999, p. 186). To meet the health care needs of an aging population and to foster an equitable use of available health care resources, it was important to explore alternatives to the established ways of delivering health care and to make services available to people in their own homes. Research about distance psychological services was lagging behind the

expansions that were occurring in this new field (Collie & Cubranic, 1999). In addressing the problem of non-verbal interpersonal communication that is generally an important element of psychotherapy, Collie and Cubranic (1999) stated,

the absence of visual cues—that aid in making accurate assessments and verifying identity—is assumed to present the greatest challenge in distance mental health care. Videoconferencing is a partial solution to this problem, but there are other potential difficulties—such as protecting confidentiality, ensuring privacy, protecting against distractions, obtaining adequate referral information for other locations, and dealing with the fact that the client and therapist may be covered by different laws, tax codes, and standards of practice—that could undermine any form of distance delivery of mental health services (p. 186).

All in all, the co-researchers saw distance art therapy as something of value with real potential for expanding access to mental health care. The researchers liked using the system and seemed to have no trouble coming up with social protocols to deal with the complexities of managing an art therapy session with people who cannot see each other. Aspects of the art therapy process that had been anticipated to be identified as serious problems, such as lack of visual cues and confidentiality did not emerge as significant impediments. The overall sentiment was that art therapy and computers are a good combination for telehealth, for reasons that have to do with art as a medium of expression, the nature of the art therapy process, computers as a medium of communication, particular qualities of computer images, and certain psychological effects of using a computer (Collie & Cubranic, 1999).

It was noticed during the course of the study that the playfulness of the art making process seemed to counteract the coldness of the computers, and it was surprising that neither the mechanical nature of computers nor the lack of a tactile dimension seemed to be significant problems. The researchers continued to be surprised by how quickly people took to the computer systems, whether they were familiar with computers or not, by how much fun they had with it. During the discussion, the researchers heard many comments about the ease with which people could express themselves with the computer art program, and about inhibitions disappearing—which could be an important factor in distance therapeutic situations where formation of trust could be delayed by the lack of face-to-face contact (Collie & Cubranic, 1999).

In computer-supported distance art therapy, the art gives an important visual dimension to the distance therapeutic encounter. It provides another channel (in addition to speech) for nuanced communication—one that is both more flexible and more direct than the typical forms of text-based computer communication (e-mail and on-line chat). Additionally, the art provides some protection against on-line misrepresentation. (Collie & Cubranic, 1999, p. 187).

It is important to note that in computer-supported distance art therapy the client is still co-present with the art, even when the therapist is somewhere else. In art therapy the client has a therapeutic relationship with the art as well as with the therapist according to McNiff (1992), and it may be that the geographical separation between the client and the therapist affects distance art therapy much less than verbal forms of distance therapy. All three of the art therapists on the research team saw ways to take advantage of the geographical separation between therapist and client, and could imagine ways in which

therapy could be enhanced by greater privacy and greater focus on the artwork (Collie & Cubranic, 1999, p. 190).

The Therapeutic Relationship and Art Therapy

Although art therapists have generated various specific definitions of art therapy, most of them fall into two related theoretical concepts. The first concept is the belief in the inherent healing power of the creative process of art making. This view embraces the idea that the process of making art is therapeutic in and of itself. This process is sometimes referred to as art as therapy. The second concept of art therapy is based on the idea that art is a means of symbolic communication. This approach is often referred to as art psychotherapy which emphasizes the product—drawings, painting, and other art expressions—as helpful in communicating issues, emotions, and conflicts within the context of a therapeutic relationship (Malchiodi, 2007).

According to Wadeson (1980), it is within the therapeutic relationship that the therapy begins, develops, matures, and ends (p. 32). She felt that speaking of therapy without taking into consideration the relationship between the therapist and the client would be to ignore one of its most basic ingredients (Wadeson, 1980). Together, patient and therapist create a matrix in which verbal and nonverbal communications come alive as both parties are touched by common experience. Therapists tap the artists within in the ongoing process of maintaining the individual holding environments that will provide the space, energy, and impetus for patients to change (Robbins, 1987, p. 21).

Art therapy imposes some special factors in the therapeutic relationship. The relationship does not only include the therapist and the client(s), but also each client's relationship to the art product that they have created. Within the art therapy relationship, the art therapist attunes to the pre-verbal psychological life of the patient and attempts to

communicate through the art process. With the use of this sensitivity, emotional communication and art media selection, essential aspects of the therapeutic holding environment are constructed (Robbins, 1987). “As therapists, we constantly create and evolve structures that organize the energy in the therapeutic relationship. Those structures, or holding environments, provide the framework for symbolic communications. This holding environment encompasses both verbal and nonverbal art communication,” (Robbins, 1987, p. 172). The art product, as the manifestation of this nonverbal communication, becomes an extension of the client and must be respected as such; therefore any art therapy intervention must be considered within the context of the therapeutic relationship. The client’s creativity, as well as the therapist’s, encompasses the entire psychotherapeutic process (Wadson, 1980, p. 7).

According to Robbins (2000),

the real relationship between patient and therapist becomes every bit as important as the transference, as the therapist opens himself up and taps the various parts of himself that may mirror, complement, or confront the various internal representations of the patient. In essence, the therapist creates a holding environment in which empathy is the basis of communication. Empathic contact becomes a bipolar bridge that respects defenses while addressing the wish to be understood. Like the creator of a fine piece of art, the therapist who is receptive to the many levels of verbal and nonverbal communication from his patient communicates back on many levels (Robbins, 2000, p. 27).

Robbins (2000) described the bipolar bridge as a “psychological space which is projected both in the therapeutic relationship and into the artwork when used. It is a space where the me and you of patient’s and therapist’s pasts find expression through image and symbol.” He explained how those representations express themselves as energy sensation, color, rhythm, volume, and weight. “Slowly, with the artwork and therapist’s holding, organizing, reflecting back the patient’s internal pathological state, the patient is given the chance to play with unresolved polarities and representations to find new integrations and solutions” (p. 27).

When speaking of the therapeutic relationship in terms of the computer, many questions arise. One study in which the audiographic communication for distance counseling was researched, implications and limitations on the use of computers in therapy were reported. The study reported on issues that have received little attention in the literature but which are important to the development and implementation of online services (Collie et al, 2002). These issues include concerns about technical failure, the relevance for people with disabilities, the need for clinical procedures and communication guidelines, and the lack of shared physical presence. The lack of shared physical presence was considered an important issue, but lack of visual cues was not seen as a serious impediment (Collie et al, 2002, p. 280). Another issue that was discussed at length was confidentiality of Internet communication. It was not considered any worse a problem than in other forms of therapeutic communication—assuming the counselor/therapist understands the limits to confidentiality imposed by the medium and explains them adequately to the client. The problem of building trust and cohesion when group members do not see each other was mentioned repeatedly, however, many ways of overcoming the problem were offered and the participants involved in the study did not feel that it would be

impossible to develop trust and cohesion in an online group. The team's comments about privacy, protection from the gaze of the counselor, and relevance to people with disabilities supported the ongoing development of audiographic communication systems for distance delivery of counseling or therapy (Collie et al, 2002, p. 281).

CHAPTER 3: METHODOLOGY

Design

This study is a descriptive study using a web-based survey. The survey included questions that elicited both quantitative and qualitative responses which were organized into the following categories pertaining to the use of computerized art making: 1) The current utilization of computerized art making; 2) The specific methods or computer software programs being used; 3) The clinical populations with whom the digital art making is being implemented by; 4) The comparisons with other art media in art therapy; 5) The cognitive, emotional and interpersonal effects of the computerized art making experience within the therapeutic relationship; 6) The issues of art storage and confidentiality when using computerized art making; 7) The prevalence of computer art making in the field of art therapy; 8) The integration of computerized art making into art therapy; 9) The timing of computerized art media interventions in art therapy; 10) The overall experience of computerized art making in art therapy treatment within the context of the therapeutic relationship.

Location of the Study

The survey was administered electronically, therefore, there was no specific location for the study defined.

Time Period for the Study

The data collection for this study began after Drexel University IRB approval was received on February 27, 2008. This research protocol was approved to continue through December, 2008.

Enrollment Information

This study was limited to practicing art therapists in the United States. The study participants were limited to professional and professional credentialed American Art Therapy Association members who provided an email address. No racial and ethnic parameters were set, so members of all ethnic, racial, religious and socioeconomic groups were eligible for the study.

Participant Type

Participants were practicing professional and professional credentialed art therapists in the United States.

Participant Source

Participants were recruited through the American Art Therapy Association (AATA) membership directory.

Recruitment

Participants were recruited through the AATA membership directory. The participants were selected to participate in the survey according to credentials, membership category and email accessibility. The following was the process for recruitment:

- The participants were recruited from the American Art Therapy Association (AATA) membership directory published on the AATA website.
- AATA members who were listed in the membership categories of “professional” and/or “professional credentialed” were selected from the membership directory.

- An Excel© spreadsheet was created to organize potential participants' email addresses in alphabetical order by state. There were no identifiers to link the participants to their names rendering all participants anonymous.
- An e-mail announcement of the study (see Appendix C) was sent to the AATA member's list. The posting included:
 - The title and a brief description of the research study
 - Inclusion and exclusion criteria
 - A confidentiality statement
 - A statement of the minimal risk of a breach of confidentiality
 - A link to the survey
- Participants were asked to self-select after reviewing inclusion and exclusion criteria.
- Instructions for completing the survey were sent to participants directing them to the survey link.
- Volunteers were asked NOT to reply to the e-mail but rather to click on the link.
- Participants were informed that their responses to the survey would remain anonymous.
- Participation was anonymous, as the survey did not include any link to the identity of the participant.
- Electronic and paper recruitment lists with names and email addresses were kept in a locked secured cabinet in the Creative Arts in Therapy office at Drexel University and were shredded at the conclusion of the study.

- One week after the survey was sent to participants, a reminder email announcement was sent to participants who had not responded.

Participant Inclusion Criteria

The following participant inclusion criteria were utilized for this study:

- Individuals who were practicing art therapists who were listed in the categories of “professional” members or “professional credentialed” members of AATA.
- Professional and professional credentialed AATA members who had email addresses published in the membership directory.
- Individuals who were practicing in the United States.

Participant Exclusion Criteria

- Individuals who did not meet the participant inclusion criteria and who were not practicing art therapists in the United States were excluded from this study.
- Students were excluded from participating in the study.
- Associate and retired members of the AATA were excluded from the study. Associate members were not art therapists. Retired members were not currently practicing.
- Participants from the AATA members’ list who did not have a complete email address listed on the AATA website were excluded from the study.

Investigational Methods & Procedures

Instrumentation

Web-Based Survey

The survey (Appendix C) was created specifically for this research only. It was not tested for reliability or validity although a pilot study was conducted on drafts of the final version. The pilot study began immediately after IRB approval. An email announcement of the pilot study (Appendix B) was sent to 10 participants involved in market research. There were eleven topics covered in both the pilot survey and study survey, and they included: 1) Demographic information; 2) What is the current utilization of computerized art making; 3) What are the specific methods or computer software programs being used; 4) Who are the clinical populations with whom the computer art making is being implemented by; 5) What are the comparisons with other art media in art therapy; 6) What is the cognitive, emotional and interpersonal effects of the computerized art making experience within the therapeutic relationship; 7) What are the issues of art storage and confidentiality when using computerized art making; 8) What is the prevalence of computer art making in the field of art therapy; 9) How is the use of computerized art making integrated into art therapy; 10) How and when should computerized art media be incorporated into art therapy, and; 11) How can this experience be used in art therapy treatment.

Data Collection

Data Collection I - Pilot Survey

A pilot study was conducted prior to actual data collection in order to receive feedback about the construction of the survey. The Pilot Survey involved the following:

- Participants included 10 healthy participants involved in market research

- Participants were sent an email announcement (Appendix A) and were instructed to click on the survey link to respond to the survey (Appendix B).
- The survey completion time was estimated to be 30 minutes.
- The survey consisted of quantitative and qualitative questions.
 - The first section of the survey consisted of demographic questions regarding the participants' age, gender, geographic location, experience as an art therapist, and computer experience.
 - The format included multiple choice, drop down menu and open ended questions.
 - The remaining sections of the survey consisted of various questions relating to the use of computerized art making including what was the current utilization of computerized art making; what was the specific methods or computer software programs being used; who was the clinical populations with whom the computer art making is being implemented by; what was the comparisons with other art media in art therapy; what was the cognitive, emotional and interpersonal effects of the computerized art making experience; what were the issues with art storage and confidentiality when using computerized art making; what was the prevalence of computer art making in the field of art therapy; how was the use of computerized art making integrated into art therapy; how and when was computerized art media incorporated into art therapy; and, how was this experience used in art therapy treatment.

- There were open forum qualitative narrative questions that included questions relating to cognitive, interpersonal and emotional experiences of using a computer in art making.
- For the purpose of the pilot study, a qualitative question was asked at the end of the survey requesting input for areas of improvement of the survey, if applicable.
- Completed surveys were electronically recorded and processed through the web-based survey program, ZAPSurvey©.
- There was only one change to the study survey which resulted from the pilot study, and this involved the recommendation of a structural change to a drop down menu.

Data Collection II - Survey Administration (30 minutes)

- Participants who determined that they met the criteria were instructed to click on the survey link in the announcement (Appendix C) to respond to the survey (Appendix D).
- The survey completion time was estimated to be 30 minutes.
- The survey consisted of quantitative and qualitative questions.
 - The first section of the survey consisted of demographic questions regarding the participants' age, gender, geographic location, experience as an art therapist, and computer experience.
 - The remaining sections of the survey consisted of various questions relating to the use of computerized art making including what was the current utilization of computerized art making; what were the specific methods or computer software programs being used; who were the clinical

populations with whom the computer art making was being implemented by; what were the comparisons with other art media in art therapy; what were the cognitive, emotional and interpersonal effects of the computerized art making experience; what were the issues of art storage and confidentiality when using computerized art making; what was the prevalence of computer art making in the field of art therapy; how was the use of computerized art making integrated into art therapy; how and when was computerized art media be incorporated into art therapy; and, how was this experience being used in art therapy treatment.

- The format included multiple choice, drop down menus and open ended questions.
- There were open forum qualitative narrative questions that included questions relating to cognitive, interpersonal and emotional experiences of using a computer in art making.
- One week prior to the closing date of the survey, a reminder email announcement was sent to participants who had not responded to the survey.
- Completed surveys were electronically recorded and processed through the web-based survey program, ZAPSurvey©.

Data Analysis

The survey consisted of quantitative and qualitative questions. Quantitative data was analyzed via the ZAPSurvey© functions which addressed the frequency, distribution, and percentage of responses in each category. All data from ZAPSurvey© was downloaded into the SPSS database for analysis. Further analysis was conducted through the use of Microsoft Excel© and its spreadsheet software functions after data was copied

from the SPSS database. These analyses included correlations between demographic data and substantive data to determine the relationship between age, years of experience, regional and cultural influences and the overall utilization of computerized art making. This data from the survey was downloaded into the SPSS system. To evaluate the correlation between selected dependant variables, a Spearman's rho was calculated. A Chi Square analysis was performed to evaluate if the relationships were significant. Cross Tabulation was used to describe the nature of the significant relationships. The level of significance was set at an alpha level of .05. Tables were then created based on the significance of the correlations. The quantitative data of the first section was reported through the use of graphs, tables, or figures which addressed the distribution of frequency and responses. The qualitative data was sorted, color coded and categorically analyzed to determine the predominant trends and themes. Correlational data was reported based on recurring themes throughout the survey. Overall, the data was described texturally integrating the quantitative and qualitative results.

Operational Definitions of Terms, Concepts, Variables

Digital Imagery Technology (DIT): Any of the digital devices or software programs that record or are used to produce art including digital cameras, digital camcorder scanners, and computer-based graphic design programs.

Computerized Art-Making: The creation of artwork using computer software and hardware i.e., mouse, stylus, light pen.

Possible Risks & Discomforts to Participants

The study posed minimal risks and discomforts to the participants. All participants were informed that their responses were anonymous which minimized the risks. Participants were advised that they might experience minimal discomfort about

potential security and confidentiality breaches in responding to an electronic survey. There was very slight risk that internet data could be accessed by hackers and that confidentiality may be breached.

Special Precautions to Minimize Risks or Hazards

The ZAPSurvey© was a secure site that was believed to protect anonymity. Also, the surveys were anonymous in that no data that could potentially identify the participants was required. This aspect of anonymity was explained to potential participants in the announcement (Appendix C). The survey questions did not address personal information and the survey was anonymous which contributed to the assessment of minimal risk.

CHAPTER 4: RESULTS

Overview

The research question for this study was “How can art therapists integrate computerized art making as a medium into art therapy theory and practice?” The method used to answer the research question was a web-based survey containing 52 questions of which necessitated quantitative and qualitative responses. The survey was distributed to credentialed art therapists practicing in the United States. 3,983 email addresses were collected from the American Art Therapy Association website and organized by state on a spreadsheet in preparation for distribution to art therapists who met the inclusion criteria.

Presentation of Data

The data will be presented by topic according to the content of the survey categories. First, the demographic information about the participants will be presented. Following the section on demographics, the data will represent the educational elements of the participants, career experience, computer experience and level of comfort using a computer, computer art making experience and computer art making experience with clients, along with opinions relating to cognitive, emotional and interpersonal effects of computer art making.

The survey content was guided by the following categorical components: (1) The current utilization of computerized art making; (2) The specific methods or computer software programs being used; (3) The clinical populations with whom the digital art making is being implemented by; (4) The comparisons with other art media in art therapy; (5) The cognitive, emotional and interpersonal effects of the computerized art making experience within the therapeutic relationship; (6) The issues of art storage and

confidentiality when using computerized art making; (7) The prevalence of computer art making in the field of art therapy; (8) The integration of computerized art making into art therapy; (9) The timing of computerized art media interventions in art therapy; (10) The overall experience of computerized art making in art therapy treatment within the context of the therapeutic relationship.

Data Analysis

The pilot survey and the study survey consisted of quantitative and qualitative questions. Quantitative data was analyzed via the ZAPSurvey© functions which addressed the frequency, distribution, and percentage of responses in each category. All data from ZAPSurvey© was downloaded into the SPSS database system for analysis. Further analysis was conducted through the use of Microsoft Excel© and its spreadsheet software functions after the data was copied from the SPSS database system. These analyses included correlations between demographic data and substantive data to determine the relationship between age, years of experience, and the overall utilization of computerized art making. The quantitative data of the first section was reported through the use of graphs which addressed the distribution of frequency and responses. The qualitative data was sorted, color coded and categorically analyzed to determine the predominant trends and themes. This data was presented by verbatim narrative. The correlational data was presented in tables and was based on recurring themes throughout the survey. The data received from the pilot survey was used to make structural changes to the study survey. The pilot survey resulted in one change to the study survey which was a modification to the drop down menu of one question. Overall, the data was described texturally integrating the quantitative and qualitative results.

Participants

Age, Gender, and Education

The survey was sent via email to 3,983 participants. Of those, 2,476 were returned to the sender as either undeliverable or returned due to the participants having a spam blocker which would not allow them to receive emails from unknown senders. 361 individuals responded to the survey, but 53 participants did not meet the published inclusion criteria or chose to not continue through the survey. The final sample consisted of 208 participants which included 188 females and 20 males whose ages ranged from less than 25 years of age (10%) to over 60 years of age (10%). The age distribution was as follows: (a) two participants (10%) were less than 25 years of age, (b) 37 participants (18%) were between the ages of 26-30 years of age, (c) 50 participants (24%) were between the ages of 31-40 years of age, (d) 48 participants (23%) were between the ages of 41-50, (e) 28 participants (13%) were between the ages of 51-55, (f) 22 participants (11%) were between the ages of 56-60, and (g) 22 participants (10%) were over 60 years of age. Figure 1 presents the percentage of the ages represented in the study.

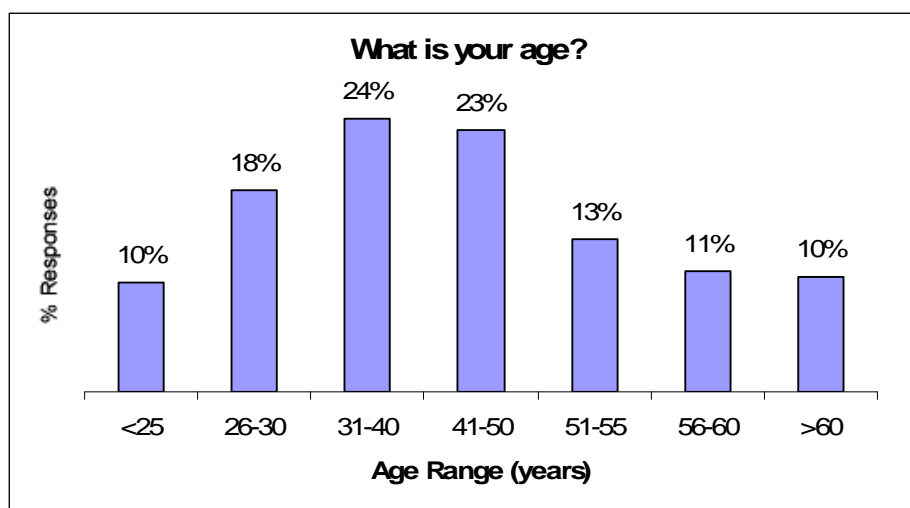


Figure 1: Percentage of Ages Represented in the Study

Gender and Age Distribution

Figure 2 represents the gender distribution and age of females (188) and males (20), who responded to the survey, in the field of art therapy.

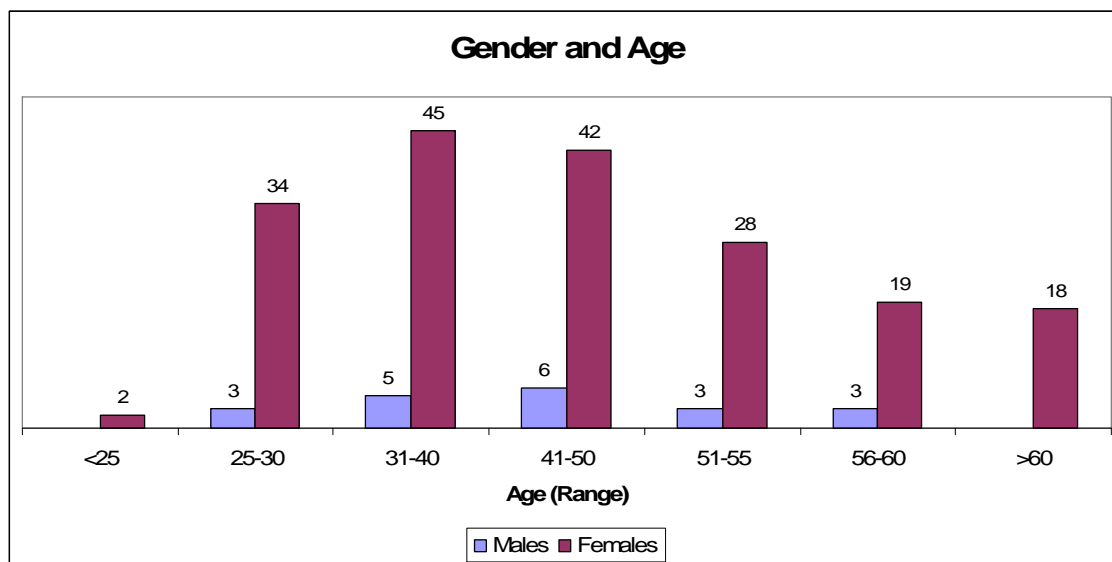


Figure 2: Participant Age Distribution by Gender ($N=208$)

Undergraduate Education

191 participants (92%) graduated from an accredited art therapy program and 16 participants (8%) did not graduate from an accredited art therapy program. All participants graduated from an art therapy program in the United States.

When asked the question, “What did you receive your undergraduate education in?” the individuals responded with the following answers: Art (21%), Fine Art (21%), Psychology (13%), Education (4%), Graphic Design (1%), Other (39%). The “Other” responses resulted in a wide range of undergraduate degrees being received which included Anthropology, Science, Business, Communications, Counseling and Therapy,

Literature and German. Figure 3 represents the various field of study that practicing art therapists received their undergraduate degree in.

156 (75%) participants considered themselves fine artists. 51 (25%) participants did not consider themselves fine artists.

156 (75%) participants considered themselves fine artists. 51 (25%) participants did not consider themselves fine artists which are not represented in a graph.

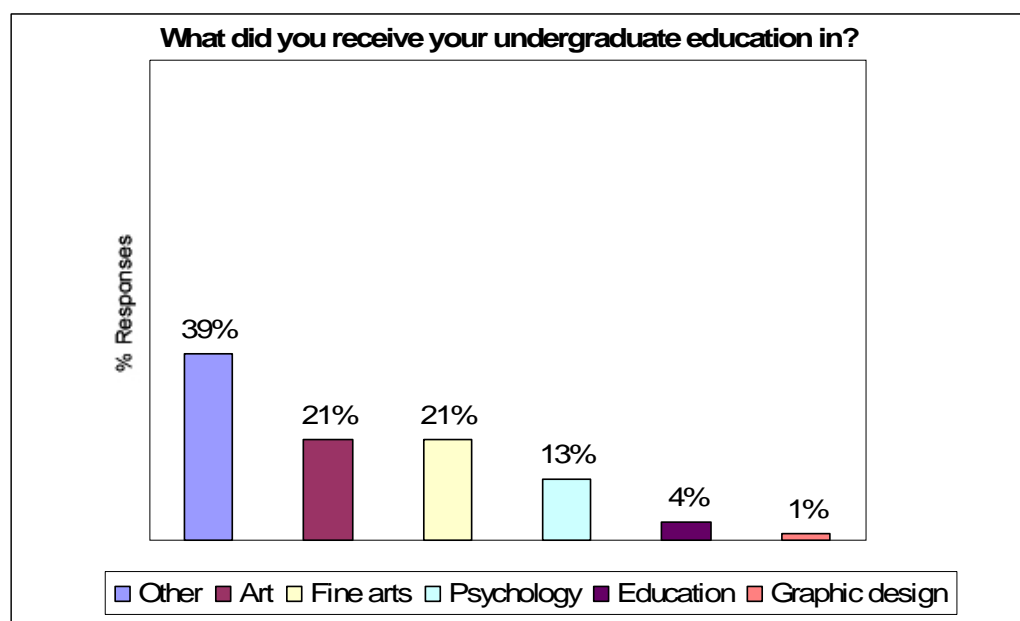


Figure 3: Undergraduate Degree Received by Participant

Art Experience

Media Preference

Participants were asked the question, "What is your preferred medium to use as an artist?" (Select all that apply). Majority of the participants reported the use of paint as their preference, the next two that were most preferred were collage and "other," then 3D media and pencil, then cray pas, and crayons were the least preferred. The "Other"

response included: wood, pen & ink, egg shells, empty tea bags, oil pastels, yarn, thread, colored pencil, video, textured media, modeling paste, water color, metal, oil paint, water color, acrylic, paper, beads, music making, linoleum, fiber art, fabric, found objects and charcoal. (See Figure 4)

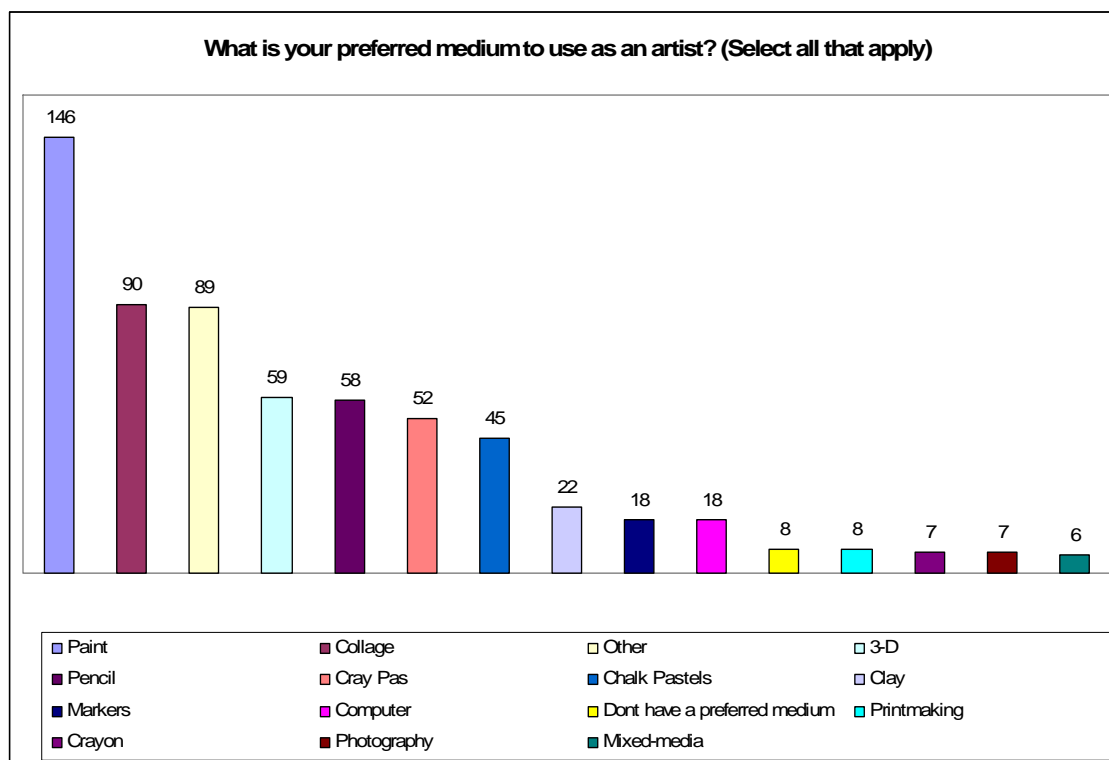


Figure 4: Preferred Medium to Use as an Artist

Figure 5 represents the participants' preferred medium to use in treatment. Majority of the participants reported that this was determined by the patient's needs, next was collage, then paint, then markers, then cray pas, then pencil, then 3-D media, then chalk pastel, then crayon, then "Other," then "don't have a preferred medium," then computer. The "Other" response to this questions included: clay, sand tray, play therapy, scratchboards, origami, model magic, video, wood, found objects, fine art reproductions, oil, pastels, printmaking, fabric, book making, textured materials, beads,

yarn, play dough, fiber, plastic cups, colored pencils, mixed media and found objects.

Please note that clay was the most preferred in the “Other” response.

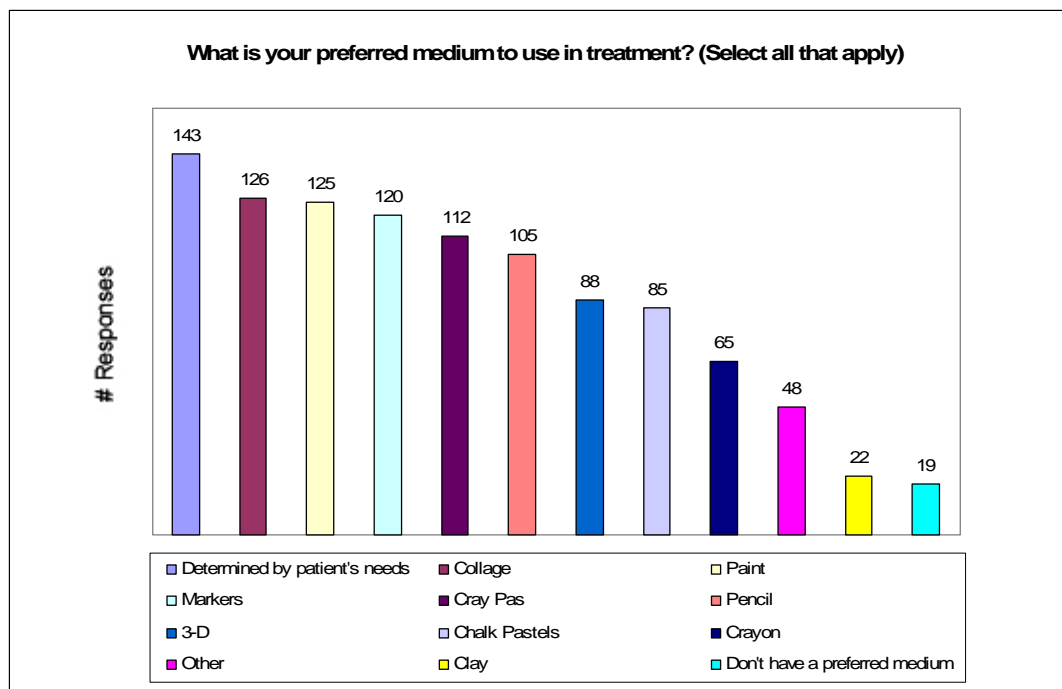


Figure 5: Preferred Medium to Use in Treatment

Career Experience

Practice Settings

The 208 participants reported experience practicing art therapy as shown in Figure 2. The category of Career Experience includes how long the participant had been practicing art therapy, what types of settings the participant had worked in during his/her career, and in how many art therapy sessions per week the participant partook. 156 (75%) participants considered themselves fine artists. 51 (25%) participants did not consider themselves fine artists. When asked for how long the participants had been practicing art therapy, 58 participants (28%) reported practicing for less than five years; 53 participants (25%) reported practicing art therapy for 5-10 years; 36 participants

(17%) reported practicing art therapy for 11-15 years; and 61 participants (29%) reported practicing art therapy for over 15 years. Please note that the inclusion criteria were that the participant must be a practicing art therapist. Figure 6 represents how long each participant had been practicing art therapy.

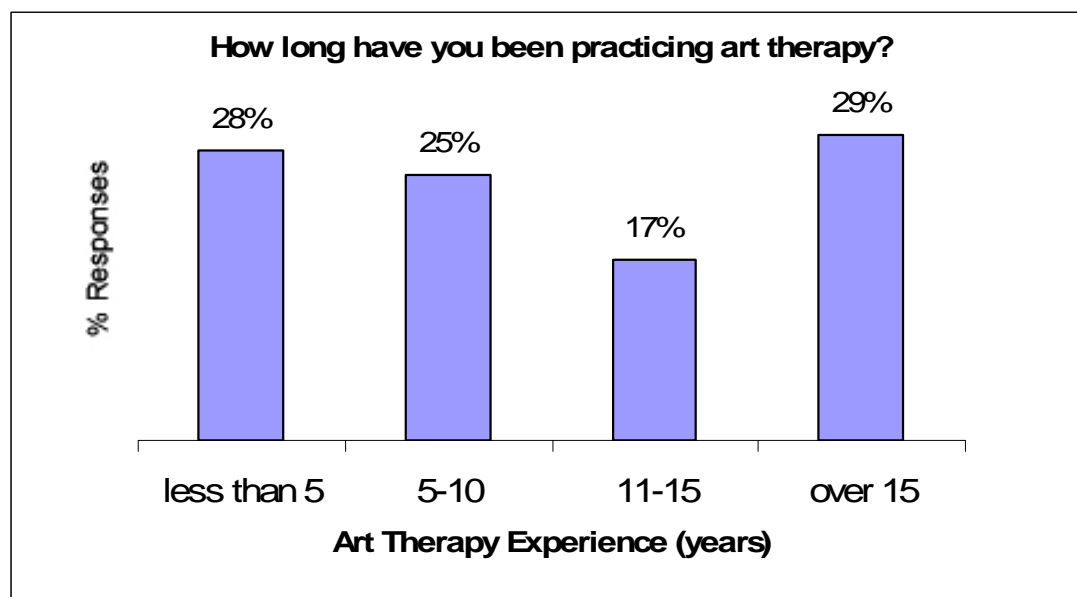


Figure 6: Art Therapy Career Experience

Next, the participants were asked to respond to the question “In what types of settings have you worked during your career and for how long? Please select all that apply.” Overall, participants had more experience working in mental health settings than in any other setting especially early in their career. The participants were also asked to list “Other” in response to this question if they had worked in a setting other than those listed. This resulted in the following settings of which the participants have worked in while practicing art therapy: Majority of the participants who answered “Other” worked in private practice. Other responses included hospice, nursing homes, shelters and geriatric centers. Figure 7 summarizes participants’ reported career practice settings.

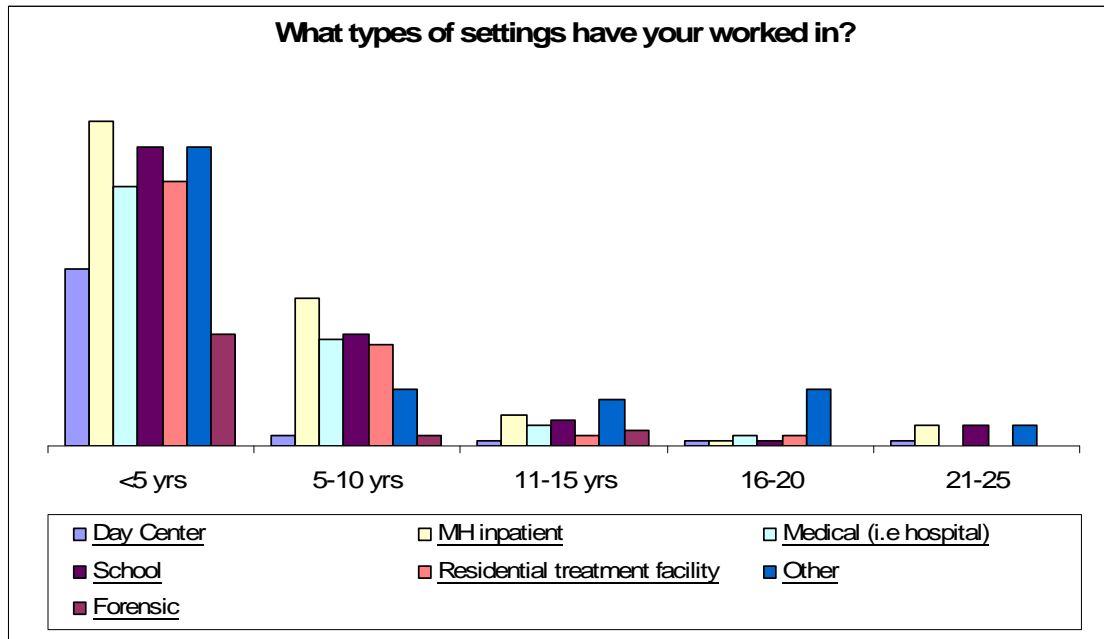


Figure 7: Career Practice Settings

Participants were asked how many art therapy sessions per week they engage in on average. Majority of the participants (63) reported that they had five to ten art therapy sessions per week. 50 participants reported having less than five art therapy sessions per week, 63 participants reported having 5-10 art therapy sessions per week, 42 participants reported having 11-15 art therapy sessions per week, 33 participants reported having 16-20 art therapy sessions per week, 11 participants reported having 21-25 art therapy sessions per week, and 6 participants reported having greater than 25 art therapy sessions per week. (See Figure 8)

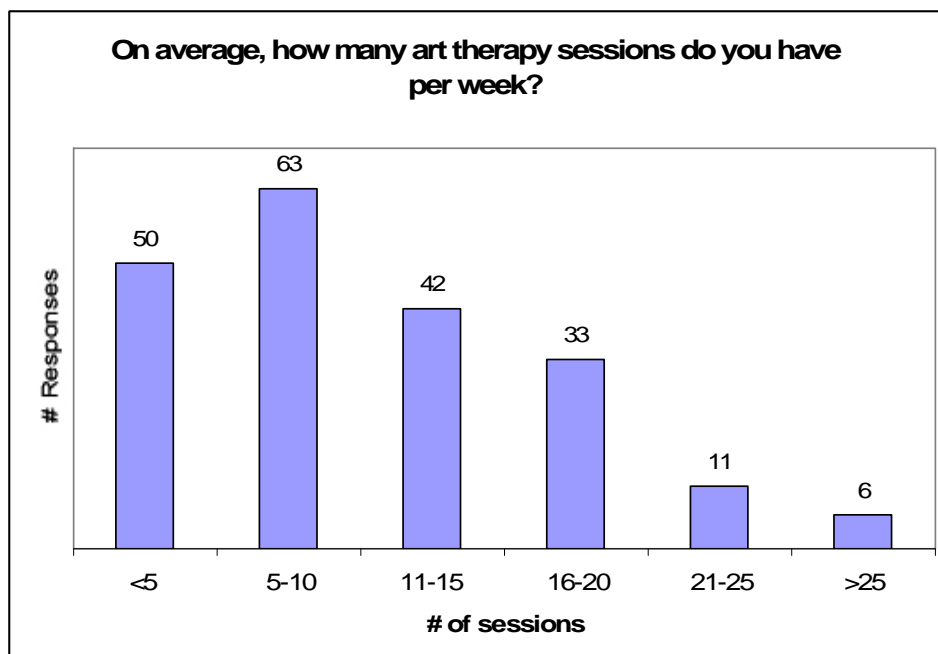


Figure 8: Art Therapy Sessions Per Week

Computer Experience

This section addresses participants' responses to questions relating to the participants' experience using a computer.

Using a Computer in Practice

Of the individuals who responded to the question "What is your level of comfort with using a computer?" 136 participants (66%) reported being very comfortable with using a computer and 71 participants (34%) reported being somewhat comfortable with using the computer. This question was relating to general computer use. There is no figure representing this.

Figure 9 represents how much overall computer experience the participants had. 7% reported less than five years, 29% reported 5-10 years, 30% reported 10-15 years, and 35% reported over 15 years of computer experience.

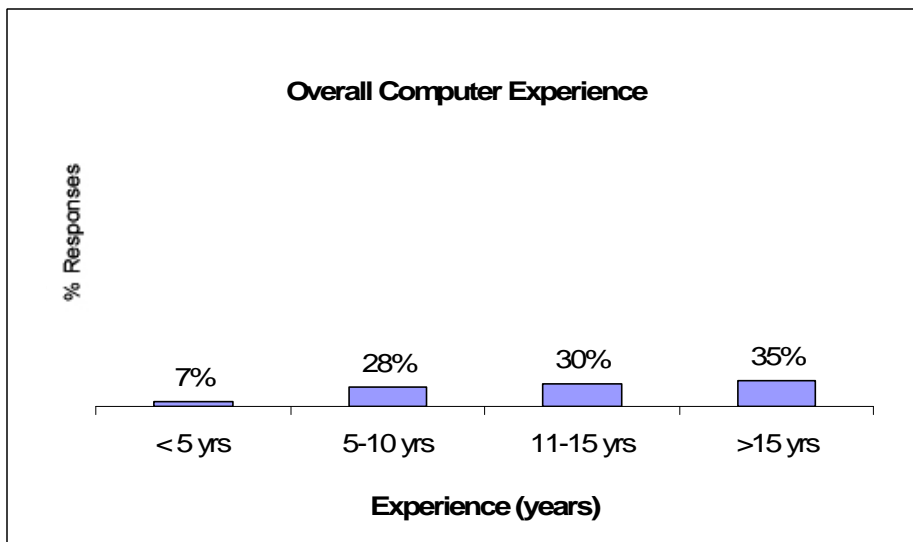


Figure 9: Overall Computer Experience

Figure 10 represents the use of computers in art therapy clinical practice. 112 participants (54%) reported using the computer “very much”; 69 participants (33%) reported using the computer “somewhat”; 22 participants (11%) reported using the computer “very little” and 4 participants (19%) reported using the computer “never” in their clinical practice.

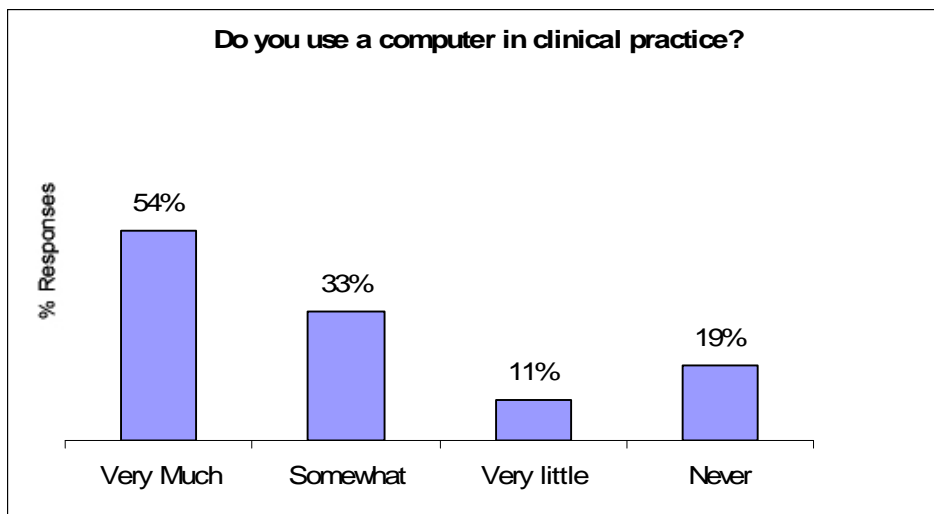


Figure 10: Computer Use in Clinical Practice

Figure 11 represents the importance of computers being used in art therapy practice. Majority of the participants (52%) are not using computers in art therapy practice, and, therefore, answered NA. 11% felt that a computer is either very important to important in practice and 37% felt that the computer is “not very important” in their practice.

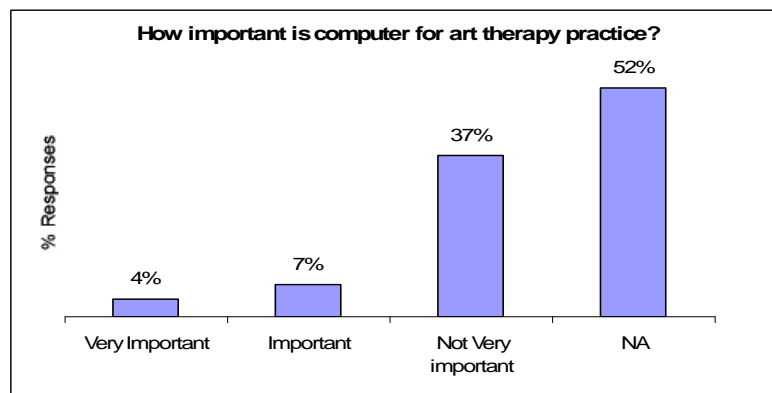


Figure 11: Importance of Computer Use in Clinical Practice

Participants were asked to respond to the question, "How important is the use of computers in general in your practice?" The majority of the participants (74%) responded that the use of computers in general was either very important or important to their work. (See Figure 12)

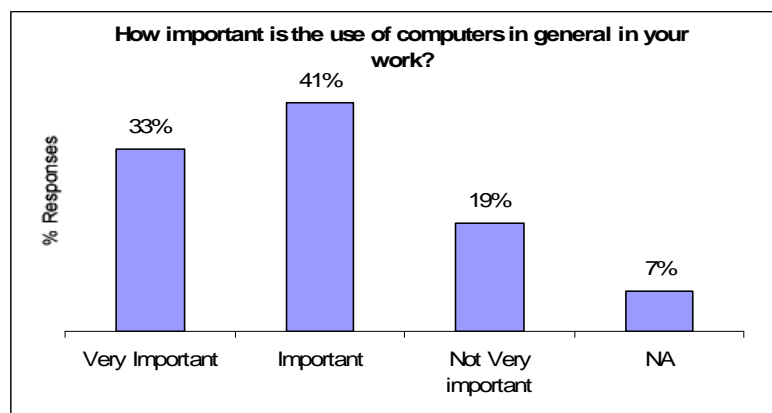


Figure 12: Importance of Computers in General

Computer Art Making

Computer use with therapists and with clients

Participants were asked if they are currently using a computer in practice for their clients to create artwork. Figure 13 indicates that 28 (14%) of the participants who responded to the survey are using computers in their practice for clients to create artwork and 179 (86%) of the participants who responded to the survey are not using computers in their practice for their clients to create artwork.

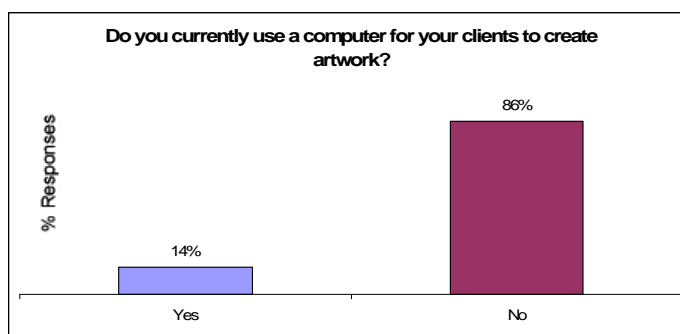


Figure 13: Use of Computers in Practice for Clients to Create Artwork

Participants were asked if they currently use a computer to create their own artwork. 55 participants (27%) reported using a computer to create their own artwork and 151 participants (73%) reported not using a computer to create their own artwork. (See Figure 14)

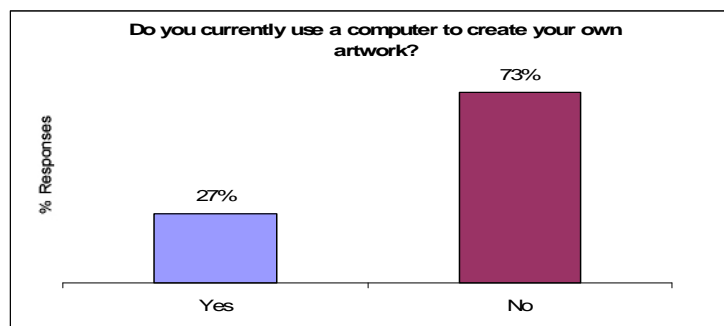


Figure 14: Using Computer to Create Personal Artwork

Participants were asked on average, how many art therapy sessions per week involved the use of computers for art making. 171 participants (96%) reported using the computer for art making less than five sessions per week, 3 participants (1%) reported using the computer for art making 5-10 sessions per week, 3 participants (2%) reported using the computer for art making 11-15 sessions per week, and 1 participant (1%) reported using the computer for art making 16-20 sessions per week. (See Figure 15)

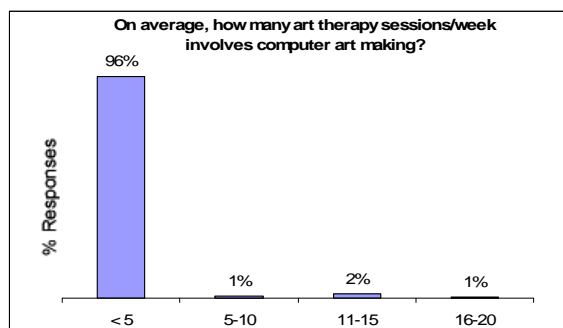


Figure 15: Art Therapy Sessions Involving Computer Art Making

Figure 16 represents how many years the participants have been using computers with clients to create artwork. 24 participants (13%) reported using a computer less than five years to create artwork with clients, 6 participants (3%) reported using a computer 5-10 years to create artwork with clients, 1 participant (1%) reported using a computer 11-15 years to create artwork with clients, and 50 participants (83%) reported not using a computer with their clients to create artwork.

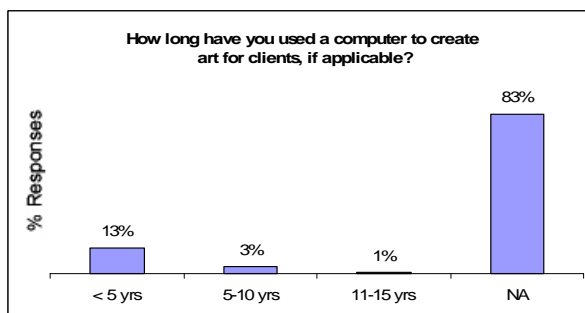


Figure 16: Years Creating Artwork with Clients

Participants were asked what the computer is used for in their practice. The majority of the participants responded that they use the computer mainly for internet purposes. Some of the other responses included email use, administrative purposes, to keep notes, other purposes, to create their own artwork and to have patients create artwork. The “other” response included that the participants used a computer in their practice for research, article writing, maintain private practice website, creation of images and music for relaxation in therapy, visual supports, archiving artwork, bookmarking and journal projects, presentations, interactive websites for client's use, creation of images for patient to work from, Video/Musical Recording and Editing, Video Therapy, creation of collage materials for client's use, to visit websites such as UTUBE to listen to music that youth identify as important to them, use with digital camera, marketing, gathering music, networking with other artists, college classes online, to learn about clients via my space and UTUBE, and Telehealth. (See Figure 17)

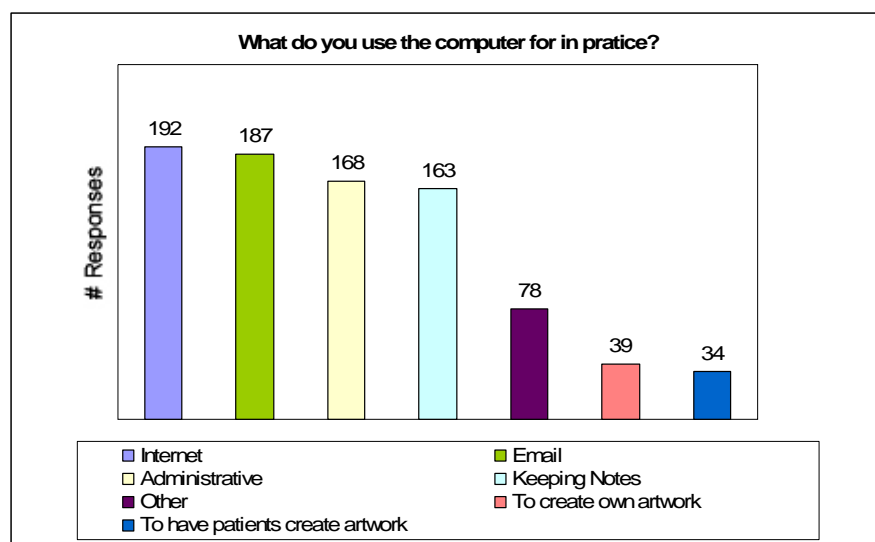


Figure 17: Computer Use in Practice

The participants were asked the question, “In your professional opinion, what populations would benefit most from computerized art making?” Majority of the participants (127) felt that adolescents could benefit most from the use of computerized art making and few (12) felt that “none” would benefit from the use of computerized art making. “Other” populations who would benefit by the use of computerized art making included: the physically disabled, people with addictions, anxiety disorders, Autism Spectrum Disorders, Pervasive Developmental Disorders, client’s during bereavement, Cancer patients due to compromised immune systems, Cerebral Palsy patients, client's who were comfortable with a computer, developmentally disabled, homebound, in a medical setting, patient’s with OCD, patients who suffer from Parkinson's disease, patient’s who suffered from PTSD, the mentally impaired, and tactile defensive patients. (See Figure 18)

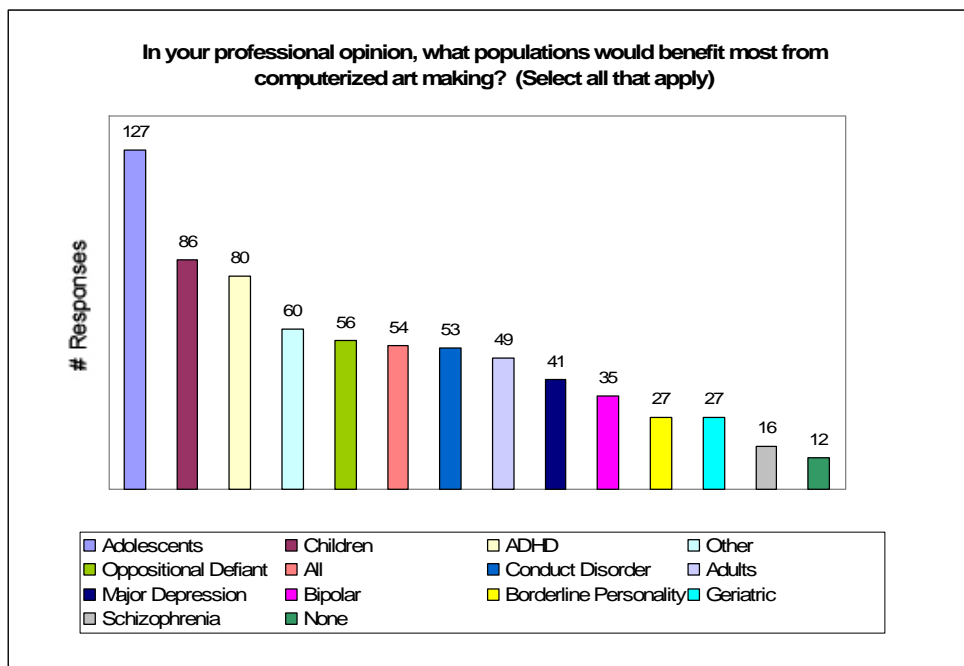


Figure 18: Populations Who Would Benefit from Computerized Art Making

Participants were asked with which populations they are currently using computerized art making. The following is the distribution: 1 participant responded “Schizophrenia,” 7 participants responded “Borderline Personality Disorder,” 9 participants responded “Bipolar,” 10 participants responded “Major Depression,” 16 participants responded “ADHD,” 15 participants responded “Oppositional Defiant Disorder,” 14 participants responded “Conduct Disorder,” 20 participants responded “Children,” 27 participants responded “Adolescents,” 10 participants responded “Adults,” 4 participants responded “Geriatric,” 161 participants responded “None,” and 32 participants responded “Other.” The “Other” response included: Forensic patients, PTSD, Anxiety Disorders, Pervasive Developmental Disorders, young adults based upon their interests, OCD, Autism/Asperger’s Syndrome, and substance dependence combined with mental disorder. (See Figure 19)

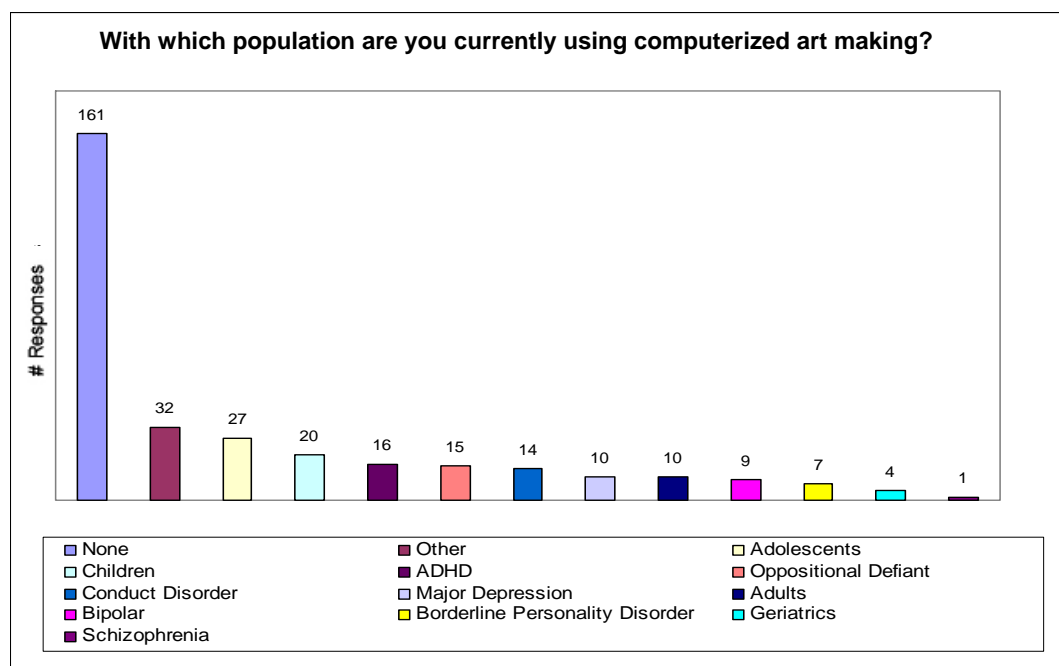


Figure 19: Populations Using Computerized Art Making

Participants were asked what factors would support their use of computers in art therapy practice. 130 participants responded that computer software was a factor in supporting their use of computers in art therapy, 103 participants responded that the availability of a computer was a factor, 77 participants responded that computer training was a factor, and 66 participants responded that computer training was a factor. 88 participants responded that “Other” was a factor in supporting their use of computers in art therapy practice. Those responses included: support by administration to purchase computers and software, availability to work in a confidential space, and proof of effects of computer art making in the field of art therapy. (See Figure 20)

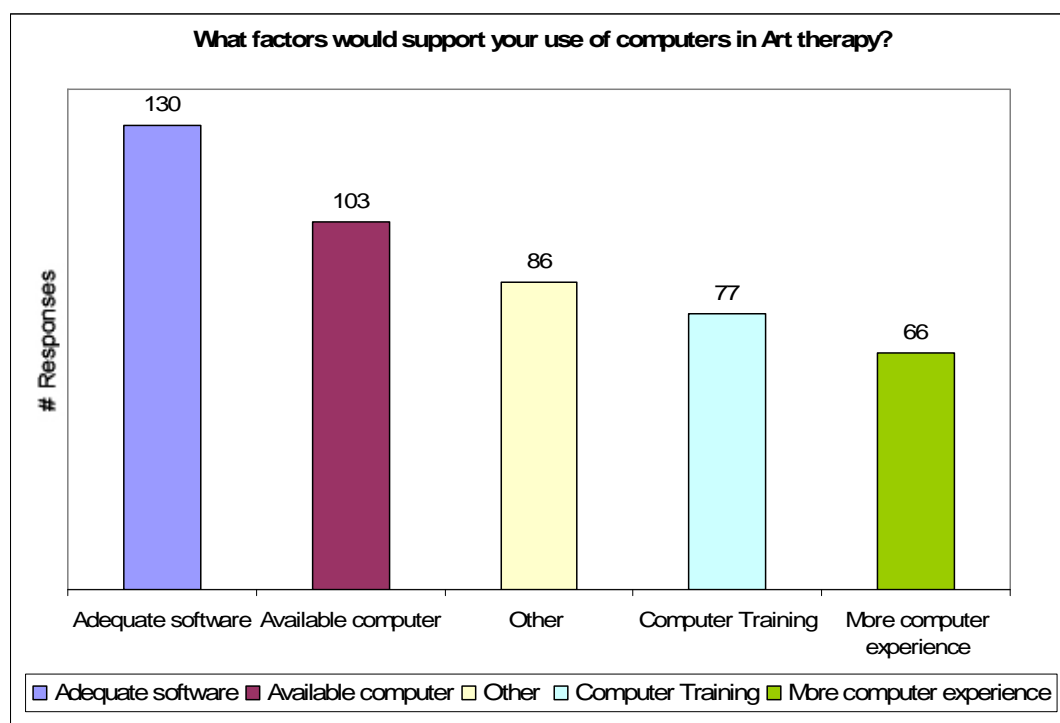


Figure 20: Factors to Support Use of Computers in Art Therapy

Participants were asked to report the benefits of using the computer for art therapy. 137 participants reported that a benefit is that there is no mess to clean up, 129

reported that the artwork is easy to recall, 121 reported that the supplies are minimal, 116 participants reported that there were no sink required, 102 participants reported easy storage, 94 participants reported that the computer is easy to clean and sanitize, 92 participants reported accessibility, 72 participants reported easy to wheel in and out of patients' rooms, 67 participants reported "other," and 14 participants reported that there is no benefit to using a computer for art therapy. The "Other" responses included: mastery of technology, benefit to adolescents and children who are very comfortable using a computer, tolerance, the computer appears to be an "adult" activity for patients who may be resistant to drawing with "childlike" materials. (See Figure 21)

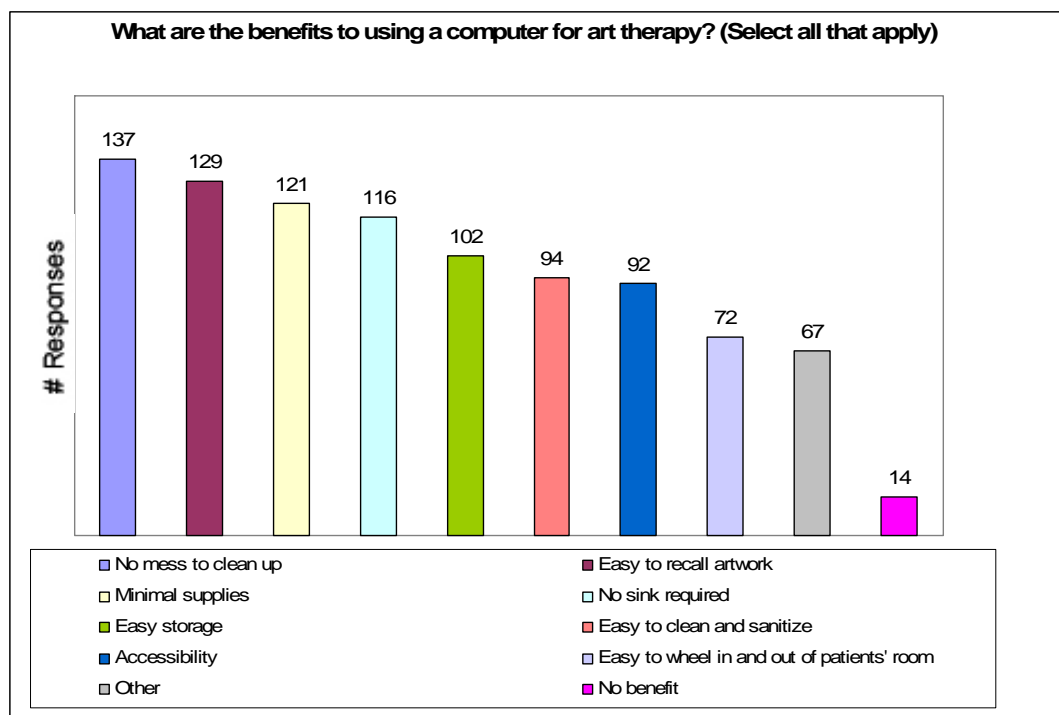


Figure 21: Benefits to Using Computers for Art Therapy

Participants were asked at what point in therapy they would offer computerized art making as a medium. Majority of the responses were "in conjunction with traditional

media.” The response of “other” included: for patients with physical disabilities and limitations, for patients with allergies to certain media, if patient had an interest in this media, and when the participant mastered using a computer. (See Figure 22)

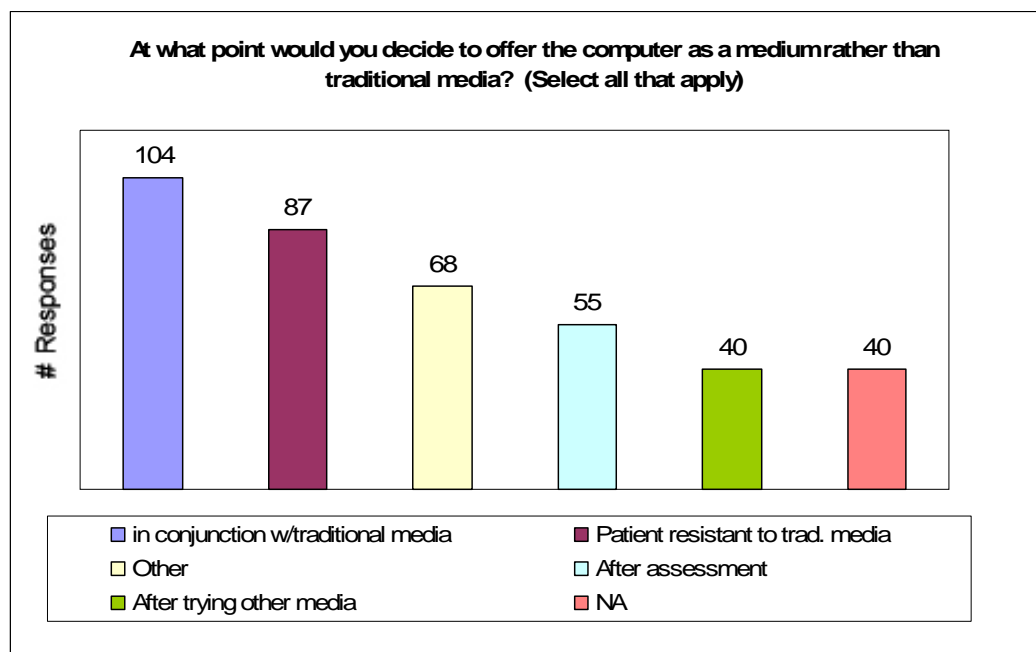


Figure 22: Offering Computer Art as a Medium

Use of Computer Art Making in the Field of Art Therapy

Software and Input Devices Used

Figure 23 represents the input devices preferred by the participant when creating computer artwork. 102 participants responded “NA” to this question, 78 participants preferred a mouse, 44 participants preferred “Other,” 43 participants preferred to use the keyboard, 38 participants preferred to use a light pen, and 32 participants preferred to use a touch screen. The “Other” responses included: scanner, digital camera, drawing tablet, video, downloadable photos, camera, picture editing software, and trackball mouse.

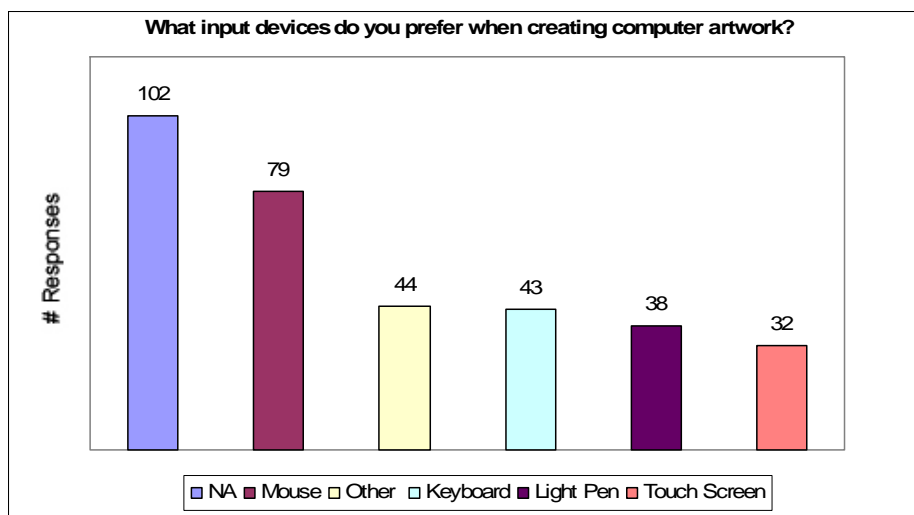


Figure 23: Input Devices Preferred by Participants

Participants were asked what input devices their clients prefer to use when creating artwork during art therapy. 156 participants responded “NA,” 35 participants responded “Other,” 27 participants responded “mouse,” 16 participants responded “keyboard,” 16 participants responded “touch screen,” and 10 participants responded “light pen.” The “Other” response included: digital camera, digital video, camera, pre-made images rather than creating their own images, and drawing tablet. (See Figure 24)

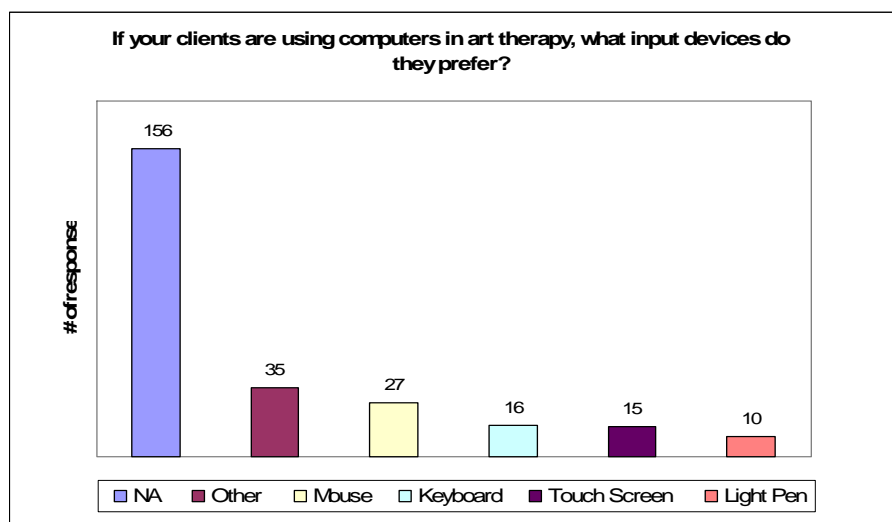


Figure 24: Input Devices Clients Prefer

Participants were asked the questions, “What computer software applications do you currently use for general use?” Figure 25 represents the current software utilization. The software utilization will be listed from highest to lowest: MicrosoftWord, PowerPoint, Excel, PhotoShop, “Other,” Publisher, NA, Illustrator. The “Other” response included: QuarkXpress, PrintShop, Corel PainterX, Digital Camera Software, Adobe Premiere video editing software, Apple Sound Studio, Adobe Acrobat, Outlook, Video Editing, Software, Windows MovieMaker, Picture It, Apple Logic Studio and Final Cut, Comic Life for Mac, Mac Canvas 9, iPhoto, PageMaker, Quicken, OpenOffice, InDesign, Sony Picture Studio, iTunes, Picture Manager, Picasa Photo Software, CorelDraw, Dragon Speaking Naturally speech, software, and Apple iWork Software i.e., Keynote, Pages, Numbers.

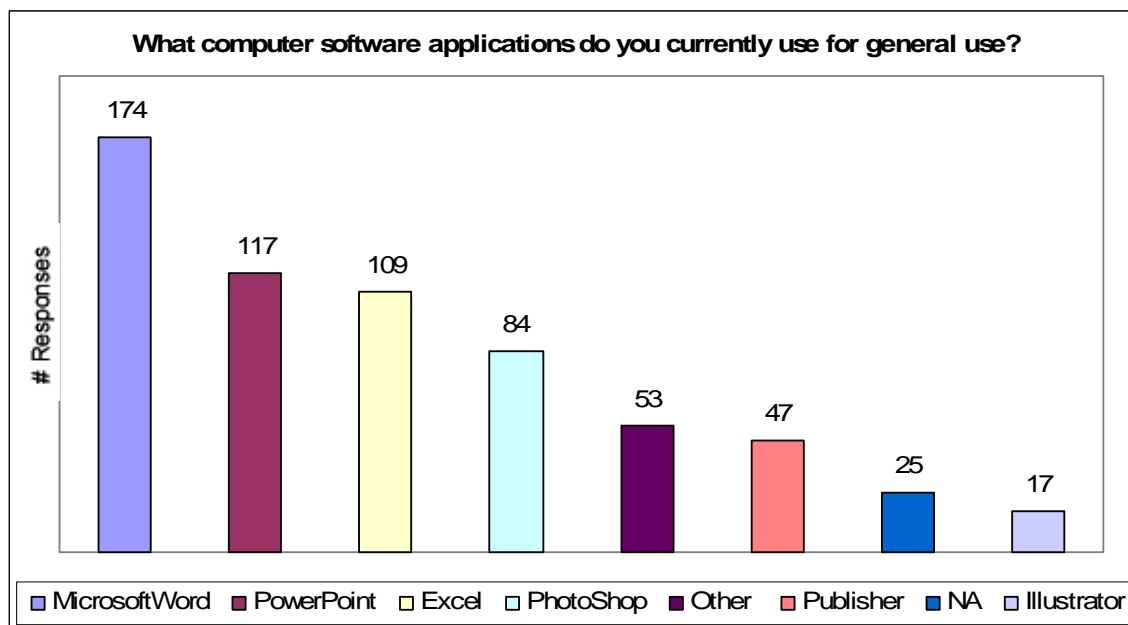


Figure 25: Software Used for General Use

Participants were asked to select the computer software applications they use to create computerized art. 106 participants reported “NA” to this question, 68 participants reporting using PhotoShop, 54 participants responded “Other,” 29 participants reported using MicrosoftWord, 23 participants reported using Illustrator, 22 participants reported using PowerPoint, 20 participants reported using Paint, 14 participants reported using Publisher, and 3 participants reported using Excel to create computerized art. The “Other” response included: Paintshop, PrintShop, PhotoStudio, PainterX, Director, Corel Painter, QuarkXpress, Picture It, Logic, Final Cut, Pro Tools, Comic Life, Virtual Therapy, Kali, iPhoto, PhotoDraw, InDesign, Picture Manager, GIMP, GarageBand, Flash, Premiere, and Fireworks. (See Figure 26)

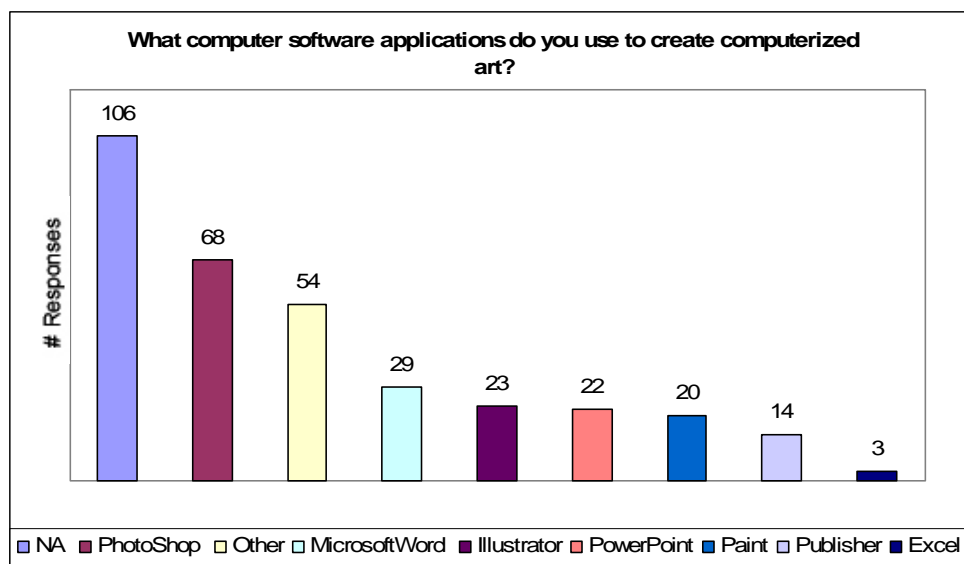


Figure 26: Software for Computerized Art

Factors to Support and Not Support Use of Computers in Art Therapy

Participants were asked, “What factors would support your use of computers in Art Therapy?” Majority of the responses were that adequate software would support use of computers in art therapy, next, having a computer available, next, “Other,” next,

computer training, and lastly, more computer experience. The “Other” response included: technique training, Adaptive technology for clients with cognitive and physical disabilities, a budget for materials, client interest, secured environment, and support from employers. (See Figure 27)

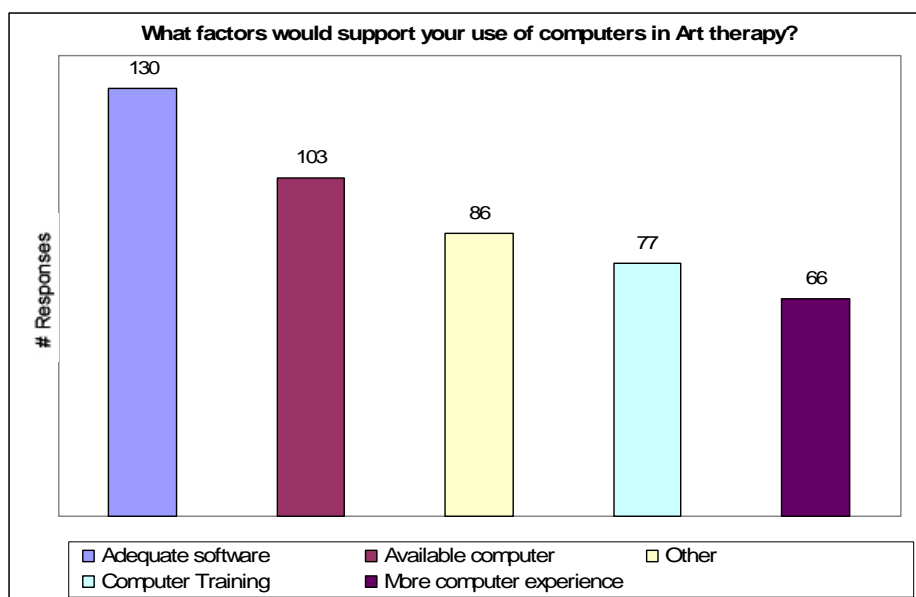


Figure 27: Support of Computers in Art Therapy

Figure 28 represents deterrent factors to computer use in practice. 118 participants reported that “Other” factors would deter them from using a computer in practice which will be described, 79 participants reported that the cost of computers would deter them from using a computer in practice, 73 participants reported that the lack of comfort with computer software would deter them from using the computer in practice, 57 participants reported that software is inadequate, 33 of the participants reported that they don’t feel it would benefit patients, 31 participants reported that lack of comfort with a computer would deter them from using a computer in practice, and 16 participants responded NA. The “Other” responses included: cost, availability, mobility,

lack of training, lack of information relating to computerized art making, lack of sensory qualities, safety issues pertaining to cords and patients falling, not conducive to setting, not conducive to population i.e., elderly in nursing homes.

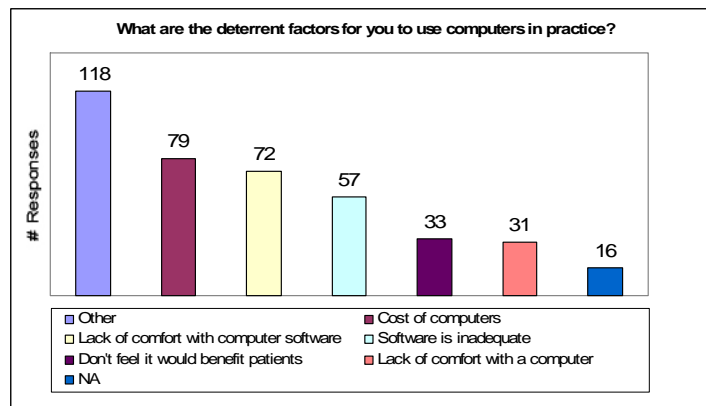


Figure 28: Factors that Deter the Use of Computers in Art Therapy

Computer Art Making in Graduate Studies

Participants were asked if they felt that computer art making should be part of the curriculum in graduate art therapy studies. 155 (78%) responded “yes” and 43 (22%) responded “no.” (See Figure 29)

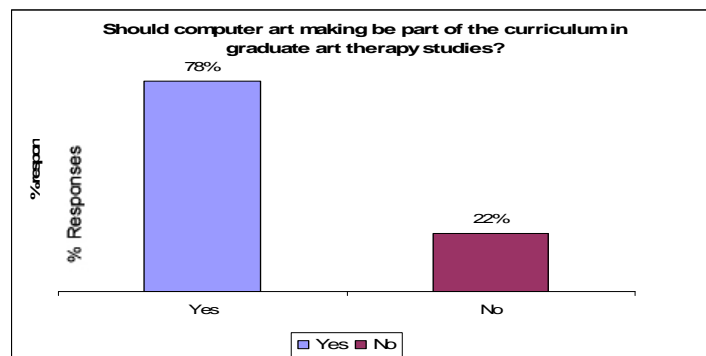


Figure 29: Curriculum for Graduate Art Therapy Studies

In Figure 30, the participants were asked, “How much training in computer art therapy should be incorporated into graduate studies?” 86 participants responded that it should be an elective, 75 participants responded “Other,” 34 participants responded that it

should be a required course, 29 participants responded that it should be a part of experiential, and 9 participants responded “none.” The “Other” response included: “Part of general studio/materials classes,” “it should be a prerequisite,” and “continuing education.”

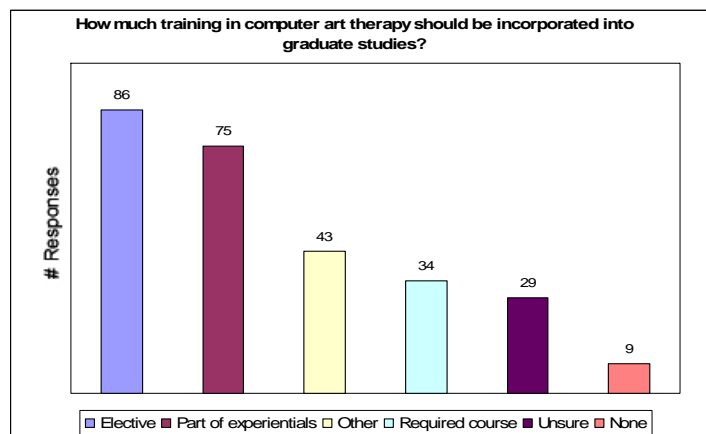


Figure 30: Training in Graduate Studies

In Figure 31, the participants were asked “How many art therapists do you know use computers for practice?” 63% (129) of the participants reported “None,” 36% (73) reported “A Few,” 10% (2) reported “Many.”

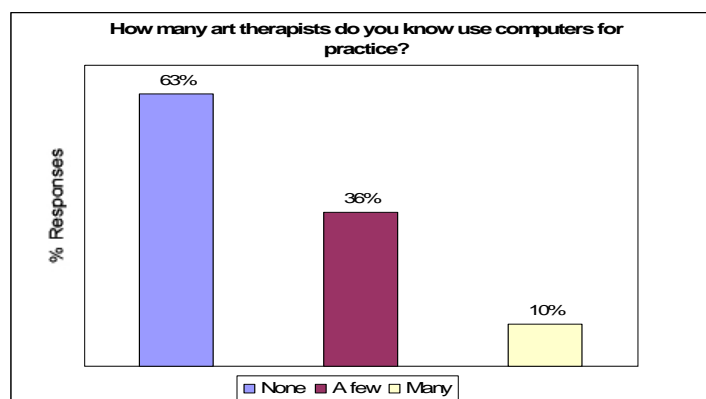


Figure 31: Art Therapists Using Computers for Practice

Open Ended Questions

The participants were asked to respond to several qualitative open-ended questions. The participants were asked to describe different aspects of the cognitive, interpersonal, emotional and therapeutic effects of using a computer to create artwork. The open-ended section of the survey also included questions that would elicit answers based on professional experience with computerized art making. Several responses to these questions resulted in assumptions based on no experience with using this media.

Themes were derived from frequency and commonalities in responses. They were then color-coded and reported.

The first question to be addressed is, “In your professional experience, what are the cognitive effects of using computerized art making?” The second question to be addressed is, “In your professional experience, what are the emotional effects of using computerized art making?” The third question to be addressed is, “In your professional experience, what are the interpersonal effects of using computerized art making?” The fourth question to be addressed is, “Do you believe there could be potential issues relating to confidentiality when using a computer for art making? Why or why not?” The fifth question to be addressed is, “When using a computer in art therapy, briefly explain the therapeutic relationship during this process (if applicable).” The last question to be addressed is, “How can computers be used in Art Therapy Treatment? Explain briefly.” It is important to keep in mind that the majority of the participants who responded to the qualitative questions have either little or no experience with using a computer in therapy. For many, the answers are based on assumptions, not professional experience.

In response to the question, “In your professional experience, what are the cognitive effects of using computerized art making?” The most common themes were:

- Enhance problem solving
- Ego strengthening
- Aide in sequencing and focus
- Help with hand-eye coordination
- Increase self-esteem by mastering use of software
- Promote frustration tolerance
- Increase attention span
- Engage both right and left brain hemispheres

The most frequent theme was that the computer would engage both right and left hemispheres of the brain. The following statements are verbatim relating to right and left brain engagement:

I am aware of use of computers for cognitive rehabilitation, so I believe it has the ability to be used in a wide variety of approaches and functional ability/skill levels. Also, I have read that it helps integrate both right and left brain functions which makes sense to me.

Left brain engages software, right brain engages creative process, less regression due to software protocols and clients appear more grounded when dealing with emotional issues

Don't know - imagine can't offer half of what real art materials do.

Way too left brained for most.

The second question to be addressed is, “In your professional experience, what are the emotional effects of using computerized art making?” Some of the themes that emerged in response to this question were:

- Emotional effects were the same as traditional media
- Increased self-esteem
- Self-soothing
- Detachment
- Instant gratification
- Control
- Disconnect from social interaction

Some participants reported that there could be a sense of detachment. Some felt this could be a positive effect and some felt as though this could hinder treatment. Many felt as though the computer was a vehicle for instant gratification and control. There was some concern about a disconnect from social interaction, but these statements were based on lack of experience. These statements are verbatim:

The tactile experience is changed. However a stroke on the keyboard, mouse pad, or Wacom tablet can be likened to that of a brush on canvas. Ultimately, the emotional response is dependent upon the effort put into a piece of artwork and the final result, as with traditional media. Computers can also provide clear boundaries between the artist and the artwork itself that sometimes becomes blurred.

Some of my clients had never used a computer - they enjoyed the immediate results. They were frightened they discovered how easy it is.

Can be isolating if used incorrectly. If used correctly it can be empowering and provide an exciting approach to developing skills which in turn develops positive self-esteem.

I think it has the full range of emotional experience- as do all art mediums. On the one end of the spectrum, it can be distancing- the connection to the art work is not as strong as the client is learning to use some of the software. But it can be as powerful as any other medium as the client learns to manipulate images and a connection to the art work develops over time.

In response to the question, “In your professional experience, what are the interpersonal effects of using computerized art making?” The common themes that emerged were:

- Impersonal
- No connection to the media
- Isolating
- Shared experience
- Connection with outside world
- Facilitation of group therapy
- Normalizing for specific populations
- Create a sense of mastery

Some participants felt that the computer would appear to be impersonal and that there would be no connection to the media. Some expressed that they imagined that

using a computer in therapy would be isolating while others felt that it was a shared experience, not only between the therapist and the client, but because the computer can be used globally. It could connect clients with the outside world. There were also questions regarding group therapy with this medium and how that could take place with a computer. Most of the participants who responded to this question had no experience with using the computer in therapy. Some expressed that the computer can be normalizing for young adults who are comfortable with this medium. Another theme that emerged was that the computer would create a sense of mastery. Therefore, the answers were a reflection of many of the participant's opinions and assumptions. Responses are listed verbatim below:

It depends on the type of art making and how interactive the process is. I specifically teach social skills to kids on the Autism Spectrum, so the computer is used as a interpersonal connecting tool.

I have found that my adolescent clients - many of whom have behavioral issues - often are interested in using the computer when they are not interested in making art in traditional ways.

Using computers in art making can created a sense of isolation if not done in a holding environment. Also, using the computer can remind us of barriers that technology has brought to authentic communication.

I use this medium very selectively because it can cause withdrawal and isolation with some individuals. For students that I feel will benefit from the computer

medium, there is interaction between the therapist and client while using the computer. Self Photography is used and can assist with self-esteem and reflection. I find it to be success oriented. The client is able to use the skills learned in their academics, own art making and for job skills.

The next qualitative question asked, “Do you believe there could be potential issues relating to confidentiality when using a computer for art making? Why or why not?” The common themes that emerged were:

- Accessibility
- Security
- Portability
- Recommendations

Some participants reported that the computer would make the client’s artwork easily accessible unless files were password protected. There was concern about artwork being shared via the internet. There was also concern that the computer devices are portable and that this would increase the risk of accessibility and losing files. There were suggestions offered to alleviate the risks relating to confidentiality such as password protection and the backing up of files to external devices. Many felt as though there would be no more confidentiality issues with computer art making than with traditional media. It was expressed that the potential issues relating to accessing computer files would be comparable to being able to access client’s files in a filing cabinet. The participant’s responses are listed below verbatim:

There are certainly issues of confidentiality when clients are using shared computers. Simple corrections to this problem include password protected

artwork or having clients save files on an external storage device. Overall, I don't believe that the threat to confidentiality is much greater than attempting to store traditional media that cannot fit neatly into a case file.

I think that there are HUGE issues with confidentiality when using a technology; and most don't take that seriously AT ALL (i.e. sharing passwords or not having passwords, allowing others to create accounts, downloading mal/ware, adware/software [which compromises the computer and makes it vulnerable], blinding trusting others to secure and back up data without understanding, etc.). People are already very sloppy, and don't take it seriously until something tragic happens.

Definitely! The nature of computers makes them just as vulnerable as anything else on the computer hard drive. I tend to use a non networked computer with clients or ask them to provide a way for the info to be saved (a flash drive) so nothing remains on the computer itself.

Not really. Computer files can be transferred to a secure system.

The fifth question was relating to the therapeutic relationship while creating computerized art making. The question was, "When using a computer in art therapy, briefly explain the therapeutic relationship during this process (if applicable)." It was described by the participants that the therapeutic relationship was the same with computer

art making as with traditional media. “Therapist may act as teacher, observer, co-experiencer, container, commentator, active therapist.” Some themes that emerged were:

- Therapist acting as teacher
- Creation of any kind of artwork was therapeutic
- Relationship strengthened
- Foster ego-support
- Resistance

The participants stated that the creation of artwork was therapeutic in and of itself whether it was with traditional media or computerized. A common theme was that the therapeutic relationship would begin with teaching the client how to use the software. This would be the same as teaching a client how to use other art materials. It was also expressed that the relationship could be strengthened through the multi part process of creating artwork via the computer collaboratively between the therapist and the client. Some other responses to this question are listed verbatim:

Same as traditional art therapy. Offer teaching and support while the client creates.

The computer is not the medium, the programs and bytes are. The computer is simply the moderator like a paint brush that helps you use paint. The therapeutic relationship is between the digital art environment, the client and the therapist in the same way that the therapeutic relationship is between the paint, the client, and the art therapist...not with the paintbrush.

When I've used computers with clients in the past, it has helped foster ego-support and confidence with some, and with others, has led to increased resistance. Some of my adolescent clients would become more preoccupied with using the computer for video games and internet rather than art making. So, depending on the client, sometimes incorporating the computer led to more creative freedom and comfort in the session, and other times led to more conflicts in the relationship when clients became frustrated and dismissive of the task due to not being able to use the computer for specific purposes they were accustomed to using it for.

The sixth question asked the participants, "How can computers be used in Art Therapy Treatment? Explain briefly." Themes that emerged were:

- Technology was the way of the future
- Children with ADHD could benefit
- Could be used as another choice of media in art therapy

The most common theme that emerged from this question was that technology is the way of the future and that computers will likely become a medium of choice for the younger generations due to their comfort level with the computer. It was mentioned several times that children with ADHD could benefit from the use of computers in therapy. Another theme that emerged was that the computer could be used as another choice of media in art therapy. It is important to note, once again, that the majority of the participants who answered the qualitative questions were not currently using computers in therapy. Below are responses verbatim from this question:

When appropriate, it can be used as a choice of media just like any other material. Just another media to choose from for the client's needs.

Images may be executed on computer as in any other media in response to task prompts/themes; may be designed to encourage experimentation with images thus enhancing flexible/divergent thinking, problem-solving; confidence-building. If multiple terminals are available, presentations on ways to manipulate tools can be followed by individual experimentation. I also utilize basic template drawings of house, tree, person, bridge as starting points for patients to elaborate on individually. Also provide structure through directives to engage use of multiple tools, layers, media and color choices to maximize benefit of opportunities unique to this medium.

I work with people with developmental disabilities. I could see using art making programs with preset shapes that are easily selected and manipulated, in the same way the therapist may present a stencil as an option to create shapes. I also could see the computer as being an interesting medium for introducing art making to someone who is resistant to the art making process due to fears of becoming dirty, as is sometimes the case with people who have OCD. Computers would also be an interesting way to connect with children and teens, who often spend large amounts of time on the computer, and may relate to computers better than traditional art media. Introducing art making through the use of computers could also be beneficial to kids and teens in the long term- beyond termination of therapy. Teaching young people to use programs that are often used in graphic

design professions may unintentionally (but positively) expose them to career choices in the future. In addition, I think it would be important to have a printer, where the art piece can be quickly printed and then placed upon a wall- I find it easier to see and review what I have made on a computer once its printed onto paper. It would also be interesting to combine traditional art making with computerized art making- printing out artwork from the computer and then drawing or adding 3D material directly on top of the printed art piece. You could also encourage clients to use their own images made on the computer as collage images- i.e. print out the images, cut them out, and rearrange them onto a piece of paper like you would with magazine photos.”

TECHNOLOGY can be used in a multitude of ways; I've seen comic book art, digital stories, and paint programs used. If the client likes it, and it can be used in a therapeutic way, then it should be used. But just like any other art material, the therapist should be completely comfortable with it, so that the client can create freely.

To provide an alternative vessel of expressions. Creativity is all about choices, and even though I do not use computers in art therapy, it is another way to provide choices for clients who often have no control over anything in their lives.

I do not believe they should be a part of art therapy, my feeling is that this process connects with an object, one that provides such easy immediate programmed

response... I do not advocate for use of computers as part of the therapeutic experience.

Correlational Data

The correlational data is an integration between the qualitative and quantitative data reported. It was based on the frequency of themes and common themes throughout the study.

To evaluate the correlation between selected dependant variables, a Spearman's rho was calculated. A Chi Square analysis was performed to evaluate if the relationships were significant. Cross Tabulation was used to describe the nature of the significant relationships. The level of significance was set at an alpha level of .05. (See Table 1)

Table 1. The correlations between relevant dependent variables are presented in the following table. Relationships that are significant at $p=.01$ and $p=.05$ are indicated with ** and * respectively.

		Correlations												
What is your age?	What is your age?	What did you receive your undergraduate degree in?	What is your level of comfort with using a computer?	How much overall computer experience do you have?	Do you use a computer in your practice? (Please use include use for art therapy, administrative responsibilities, etc.)	Do you currently use a computer for your clients to create artwork?	If using computer art clients how long have you been using this medium?	Do you currently use a computer to create artwork?	Should computer art be a part of the curriculum in graduate studies?	In therapy with a patient how often do you utilize a computer in art therapy?	How important is the use of computers in general in your practice?	How important is the use of computer art making in your practice?	On average, how many art therapy sessions do you have per week?	
Correlation Coefficient	1.000	-0.126	.179**	1.000	-.063	.061	.055	.212**	.087	.267**	.121	.151*	-.048	
Sig. (2-tailed)		.070	.010		.363	.386	.460	.002	.225	.000	.082	.029	.497	
N	208	208	207	208	208	207	181	206	198	196	206	207	205	
Correlation Coefficient		1.000	.018	-.068	-.061	.023	.062	.007	-.064	-.001	-.003	.041	-.051	
Sig. (2-tailed)			.800	.328	.384	.742	.410	.923	.374	.967	.966	.554	.463	
N	208	219	207	208	207	207	207	206	198	196	206	207	206	
Correlation Coefficient		1.000	-.273**	1.000	-.259**	1.000	.164*	.260**	.098	.169**	.582**	.107	-.050	
Sig. (2-tailed)			.000		.000		.028	.000	.173	.018	.000	.126	.476	
N	207	207	207	207	207	207	180	205	197	196	205	206	204	
Correlation Coefficient		1.000	.198**	-.095	.210**	1.000	.933**	.432**	.068	.362**	.250**	.559**	-.157*	
Sig. (2-tailed)			.000	.172	.002		.000	.000	.345	.000	.000	.000	.025	
N	207	207	206	207	206	207	180	205	197	195	205	206	204	
Correlation Coefficient		1.000	.236**	-.081	.164*	1.000	.1000	.414**	.089	.379**	.232**	.593**	-.150*	
Sig. (2-tailed)			.000	.328	.000		.028	.000	.240	.000	.002	.000	.045	
N	181	181	180	181	180	180	181	179	174	174	179	181	179	
Correlation Coefficient		1.000	.325*	-.146*	.260**	1.000	.414**	1.000	.172	.296**	.243**	.333**	-.040	
Sig. (2-tailed)			.000	.036	.000		.000	.000	.196	.000	.000	.000	.571	
N	206	206	205	206	205	205	179	206	196	195	204	205	204	
Correlation Coefficient		1.000	-.039	-.014	-.088	1.000	.089	.088	1.000	.311**	.229**	.134	.018	
Sig. (2-tailed)			.374	.586	.847		.240	.172		.000	.000	.001	.802	
N	198	198	197	198	197	197	174	196	198	190	196	198	195	
Correlation Coefficient		1.000	.165*	-.073	.169**	1.000	.379**	.296**	.311**	1.000	.189**	.332**	-.043	
Sig. (2-tailed)			.021	.309	.018		.000	.000	.000	.000	.008	.000	.549	
N	196	196	195	196	196	195	174	195	190	196	194	195	194	
Correlation Coefficient		1.000	.148**	-.052	.107	1.000	.232**	.243**	.188**	.188**	1.000	.138*	-.225**	
Sig. (2-tailed)			.034	.052	.000		.002	.000	.001	.008	.000	.048	.001	
N	206	206	205	206	205	205	179	204	196	194	206	205	204	
Correlation Coefficient		1.000	.145*	-.058	.107	1.000	.593**	.333**	.134	.332**	1.000	1.000	-.219**	
Sig. (2-tailed)			.041	.040	.000		.000	.000	.061	.000	.048	.000	.002	
N	207	207	206	207	206	206	181	205	198	195	205	207	204	
Correlation Coefficient		1.000	-.051	.091	-.050	1.000	-.150*	-.040	.018	-.043	-.225**	-.219**	1.000	
Sig. (2-tailed)			.070	.193	.025		.045	.571	.802	.001	.000	.002	.000	
N	205	205	204	205	204	204	179	204	195	194	204	204	205	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 2 is a representation of the participant's age and their use of computers in practice. Participants between the ages of 26-50 reported using the computer more frequently in practice than those over 50. This may be due to the age of the participants and their lack of computer training and experience.

Table 2

Cross Tabulation between Age and Computer Use in Practice

(N=207)

Age	Very Much	Somewhat	Very Little	Never	Total
<25 yrs	0	2	0	0	2
26-30 yrs	20	14	2	1	37
31-40 yrs	30	13	7	0	50
41-50 yrs	31	10	6	1	48
51-55 yrs	9	15	3	1	28
55-60 yrs	13	8	0	1	22
>60 yrs	9	7	4	0	20
Total	112	69	22	4	207

Table 3 represents what the participant's age was who are using the computer to create their own artwork. It appears as though the participants whose ages ranged from 26-50 are using the computer to create their own artwork more than the other age groups represented. Therefore, there is a correlation between age and the use of the computer to create own artwork. Older participants who may not have much computer training and experience with using a computer to create artwork are not using it to create their own artwork.

In Table 4, the participants were asked the question, “What did you receive your undergraduate degree in? * Do you use a computer in your practice? (Please include use for art therapy, administrative responsibilities, etc.)” There did not appear to be a relationship between what the participant’s received their undergraduate degree in and if they used a computer in practice.

Table 3

Cross Tabulation between Age and Use of Computer to Create Own Artwork

(N=206)

Age	Yes	No	Total
<25 yrs	0	2	2
26-30 yrs	14	23	37
31-40 yrs	18	32	50
41-50 yrs	15	32	47
51-55 yrs	1	26	27
55-60 yrs	5	17	22
>60 yrs	2	19	21
Total	55	151	206

Table 4

Cross Tabulation between Undergraduate Degree and Computer Use in Practice

(N=207)

	Very much	Somewhat	Very Little	Never	Total
Art	26	13	5	2	46
Business	2	0	0	1	3
Education	6	2	0	0	8
Fine arts	27	14	4	1	46
Graphic design	1	2	0	0	3
Psychology	14	10	4	0	28
Other	36	28	9	0	73
Total	112	69	22	4	207

In Table 5, the participants were asked, “What did you receive your undergraduate degree in? * Do you currently use a computer to create your own artwork?” According to the results of the correlational data, there did not appear to be a relationship between what the participants received their undergraduate degree in and if they used a computer to create their own artwork. Those who received their undergraduate degree in business were no more likely to use the computer to create their own artwork than those who received their undergraduate degree in graphic design or fine art.

Table 5

Cross Tabulation between Undergraduate Degree and Computer Use to Create Own Artwork

(N=206)

	Yes	No	Total
Art	15	31	46
Business	0	3	3
Education	1	6	7
Fine arts	13	33	46
Graphic design	0	3	3
Psychology	4	24	28
Other	22	51	73
Total	55	151	206

Table 6 represents overall computer experience and level of comfort with using a computer. There did appear to be a relationship with greater years of experience yielding greater comfort with using a computer.

Table 6

Cross Tabulation between Overall Computer Experience and Comfort Level with the Computer

(N=207)

	Very Comfortable	Somewhat Comfortable	Total
<5 yrs	2	12	14
5-10 yrs	36	21	57
11-15 yrs	39	24	63
>15 yrs	59	14	73
Total	136	71	207

Table 7 represents level of comfort with using a computer and how often the participant would utilize the computer in art therapy. There did not appear to be a relationship between these two variables. Whether or not the participant was comfortable with using a computer did not impact computer use in art therapy.

Table 7

Cross Tabulation between Level of Comfort with Using a Computer and the Computer Being Utilized in Therapy with a Patient

(N=195)

	Frequently	Sometimes	Infrequently	Never	Total
Very comfortable	13	48	34	33	128
Somewhat comfortable	2	19	22	24	67
Total	15	67	56	57	195

Table 8 represents level of comfort with using a computer and the importance of computer art making in your practice. There did not appear to be a relationship between these two variables. Whether the participants were comfortable or not with using a computer, they were still not using the computer for art making in their practice.

Table 8

Cross Tabulation between Level of Comfort with Using a Computer and the Importance of Using a Computer for Art Making in Practice

(N=206)

	Very Important	Important	Not Important	NA	Total
Very comfortable	7	13	51	65	136
Somewhat comfortable	1	2	25	42	70
Total	8	15	76	107	206

Table 9 represents level of comfort using a computer and the importance of using a computer in general in practice. There did not appear to be a relationship between these two variables.

Table 9

Cross Tabulation between Level of Comfort with Using a Computer and the Importance of Using a Computer in General in Practice

(N=205)

	Very Important	Important	Not Important	NA	Total
Very comfortable	51	51	23	9	134
Somewhat comfortable	16	32	17	6	71
Total	67	83	40	15	205

Table 10 represents level of comfort with using a computer and the number of sessions with clients that involves computer art making. There did not appear to be a relationship between these two variables.

Table 10

Cross Tabulation between Level of Comfort with Using a Computer and Number of Sessions with Clients that Involves Computer Art Making

(N=177)

	<5 yrs	5-10 yrs	11-15 yrs	>25	Total
Very comfortable	114	5	2	1	122
Somewhat comfortable	53	1	1	0	55
Total	167	6	3	1	177

Table 11 represents level of comfort with using a computer and how long participants have been using computer art making with clients. It appears as though there is a relationship between comfort level with the computer and length of time using computers in art making with clients. This could represent that participants who are more comfortable with the computer are beginning to use computers to create artwork with clients since the majority who are using computers to create artwork have been doing so for less than five years.

Table 12 represents level of comfort with using a computer and if the participants are using a computer for their clients to create artwork. In this table, there is a significant relationship between level of comfort with using a computer and if the participants are using the computer for clients to create artwork. The relationship is that even though

participants are very comfortable or somewhat comfortable they are not using the computer for clients to create artwork.

Table 11

Cross Tabulation between Level of Comfort with Using a Computer and How Long Participant Has Been Using This Medium

(N=181)

	<5 yrs	5-10 yrs	11-15 yrs	NA	Total
Very comfortable	22	5	1	91	119
Somewhat comfortable	2	1	0	59	62
Total	24	6	1	150	181

Table 12

Cross Tabulation between Level of Comfort with Using a Computer and Currently Using a Computer for Clients to Create Artwork

(N=206)

	Yes	No	Total
Very comfortable	25	110	135
Somewhat comfortable	3	68	71
Total	28	178	206

Table 13 represents level of comfort with using a computer and the use of a computer in your practice including for art therapy, administrative responsibilities, etc.).

There did appear to be a relationship between level of comfort with using a computer and

the use of a computer in practice. The table indicates that those who are very comfortable to somewhat comfortable are using the computer in practice very much.

Table 13

Cross Tabulation between Level of Comfort with Using a Computer and Using a Computer in Practice

(N=206)

	Very much	Somewhat	Very Little	Never	Total
Very comfortable	87	39	8	2	136
Somewhat comfortable	25	29	14	2	70
Total	112	68	22	4	206

Table 14 represents level of comfort with using a computer and the use of a computer to create own artwork by the participant. There appears to be a significant relationship between these two variables in which even though the participants are comfortable using the computer they are not using it to create their own artwork.

Table 14

Cross Tabulation between Level of Comfort with Using a Computer and the Use of a Computer to Create Own Artwork

(N=205)

	Yes	No	Total
Very comfortable	50	84	134
Somewhat comfortable	5	66	71
Total	55	150	205

CHAPTER 5: DISCUSSION

Overview

This chapter will present an interpretation of the results from this research study by synthesizing the relevant material from the literature review content with the results of the study. Major findings are summarized, followed by a discussion of the limitations of the study, clinical applications and implications for future research.

Results

The results were reported based upon the categories that were used in the survey to organize the questions and the data. The discussion of the results will begin with the demographic information including gender, age, and education, first. Next, career experience, computer experience and art and art making experience will be discussed. The last section describes the clinical applications, major findings and implications for future research based on the results of the study.

Demographics

The demographic information resulted in 208 participants responding to the survey. 75% (188) of the participants were female and 25% (20) of the participants were male. Majority of the participants who responded to the survey were between the ages of 31-50. 75% (156) of the participants considered themselves fine artists. 42% of the participants received their undergraduate degrees in either fine art or art and 39% received their undergraduate degree in something other than the choices given. This resulted in a wide range of educational backgrounds of the participants which was important to the study in order to have a representative sample.

It appeared as though early in the careers of the participants, they worked in various settings ranging from schools to inpatient mental health settings. It also appeared

that participants who had worked for many years were more likely to work in private practice later in their careers.

Undergraduate Education

The participant's educational background varied from art to German. According to the results of the study, there did not appear to be a relationship between educational background and the use of computers in therapy. The participant who had a business degree was no more likely to use computer art making in art therapy than the participant who had a degree in graphic design or art.

Career Experience

Practice Settings

The participants who responded to the survey ranged equally in art therapy experience from less than five years to over 15 years. The participants with 11-15 years of experience represented only 17% of the total participants who responded to the survey.

The participants reported that they mostly had less than five to 11-15 art therapy sessions per week.

Computer Experience

Using a Computer in Practice

66% of the participants who responded to the survey reported being very comfortable with using a computer, and 34% of the participants reported being somewhat comfortable with using a computer. Although the participants reported being comfortable with using a computer, they still were not using a computer in therapy according to the results. 87% of the participants were using a computer in clinical practice and 75% reported that computers were very important or important in general in their work, but only 11% of the participants reported that computers were important in art

therapy practice. Comfort level with using a computer did not appear to be a factor in participants using a computer in art therapy practice according to the results of the study. This appeared to be due to the participants' computer use being more around administrative tasks, internet use and email rather than the use of computerized art making with clients. According to the qualitative data, participants may be more likely to use computerized art making in therapy if they were trained with this medium. The participants appeared from the survey results to be apprehensive to use this medium due to their lack of experience and training.

While the participants reported that using a computer for practice was very important, the results indicated that the participants were not using a computer for art making either for themselves or with clients. There were more participants using the computer for their own art making rather than using the computer for their clients to create artwork. Majority of the participants were using the computer administratively rather than creatively based on the results of this study. The literature reviewed supported these findings. A previous study yielded the same results. It appeared in that study also that technology was being used as a presentation tool or teaching tool rather than an art making tool (McLeod, 1999).

Art Experience

Media Preference

The participants reported using a wide variety of media to create their own artwork. The results indicated that paint was the preference to other materials. The participants also reported using a wide range of materials varying from found objects, to beads and fiber art. The participants reported that they enjoyed the tactile qualities of traditional media, and they expressed a concern for the lack of sensory qualities of using

a computer to create artwork. The statement, “lack of” sensory qualities was made throughout the survey responses. The computer offers “unique” sensory qualities just as the various art media does. It is recommended that further research be conducted in order to determine if the uniqueness of the qualities of computer art making would have an effect on the client, on the therapist and/or on treatment. One participant stated, “I enjoy giving patients options of materials, the tactile, the, sensoral interaction is important for many.” This was also stated in a study researching how technology training affects its use in art therapy. The participants (N=43), reported that they are reluctant to use technology because it does not meet the sensory needs of clients (Orr, 2006). Therefore, further research is needed to determine the sensory qualities and effects of computers while being used as an art making tool.

In art therapy, art materials or media play an important role in art therapy treatment. Robbins (2000) stated that art materials are “an organic part of theory, technique and the processes of creativity development and therapeutic change,” (p.104). Although there are certain qualities with any art material that may make it more or less appropriate for use with a specific clinical population, art materials can be used in a multitude of ways to promote an ever adapting holding environment that is sensitive to a patient’s changing levels of ego integration, defenses, resistances, and object representations (Robbins, 2000).

When the participants were asked what was their preferred medium to be used in treatment, they stated that this was determined based on the patient’s needs. Robbins (2000) stated that art therapists make media choices in treatment based on assessing the psychological development, psychodynamics such as ego functions, and the level of

object relations maturity of art therapy clients. Therefore, media plays a very important role in art therapy treatment.

Although art therapists tailor the choice of media based on the needs of the client according to Robbins (2000), the results of the study indicate that the computer is still not being used in art therapy for treatment. The qualitative data indicated that the computer could be an effective medium with those individuals who are diagnosed with ADHD as well as with children, and individuals who may be tactile defensive. Even though the participants discussed the benefits of using a computer with specific populations and with specific circumstances, the computer still is not being used in treatment according to the results of this study. It is important to note that the majority of the participants who responded to the survey and offered opinions and suggestions for populations who could benefit from computerized art making, had never used this medium in practice. Majority of them had never used this medium to create their own artwork either.

Computer Art Making

Computer Use by Therapists and Clients

Of the participants, only 14% reported using a computer for their clients to create artwork. 27% were using the computer to create artwork themselves.

The participants reported that clients with ADHD, adolescents and children would benefit the most from computerized art making. They reported that adolescents and children would greatly benefit due to their comfort level with using a computer as children are being introduced and exposed to computers at a much younger age than previous generations.

In previous research, the same findings were reported,

Today's youth (particularly teens and young adults) find it difficult to live without newer technologies such as compact discs, graphic-based video games, MP3 players, high powered computers, cell phones, and digital assistants, some of which were not available even five years ago (Orr, 2006, p. 191).

Another study surveyed middle school students to see how often they use the internet outside of school. The study resulted with the students reporting that they were very familiar with the internet and considered themselves either intermediate or advanced in their level of understanding and experience. 84% of the students surveyed spent at least an hour or more on the internet each week. The research indicated that the current generation of students in our society is grounded in visual culture that requires an understanding of technology-based multi-sensory communication (Orr, 2006). The novelty of using computers helps break barriers in working with adolescents and other reluctant, non-communicative clients (McLeod, 1999, p. 201)

The participants in this study also reported that the computer would be an effective medium for people with ADHD as a way to help them to focus and feel a sense of control. Another population that was mentioned throughout the study who would benefit from this medium was clients with physical disabilities. It was reported that this population could gain a sense of control and mastery from using the computer especially if adaptive technology was available. Some of this data was based on the participant's actual experience with using computer art making in therapy, but the majority of the data was based on the participant's opinion rather than actual experience with using a computer for computer art making in therapy.

One participant stated verbatim,

This is a time when technology is a part of everyday life. Children are introduced to computers from infancy and are very comfortable with a computer. Handheld computer games offer software that allows children to draw images and have these images come to life.

The literature also states that the best part of computer-assisted art therapy is the empowerment for clients who find natural dimensional media limiting as stated by McLeod (1999), as could be the case with clients with physical disabilities.

The process of computer art is no longer restrictive or difficult to master. Programs are set up in a very intuitive manner, with recognizable icons representing tool functions available at the edge of the screen (McLeod, 1999, p. 201).

Although, computers may be effective with certain clinical populations, they may not be appropriate for others. This depends upon careful assessment of the patient's mental status, psychodynamics, and treatment goals. No art tool—including the computer—suits all needs or situations, but most can be used well in a therapeutic context if the therapist knows the properties and potentials they hold (Parker-Bell, 2003, p. 180).

Considerations in Computer Use in Art Therapy

The participants reported that if they had adequate software and a computer available, they would be more likely to use the computer in therapy. The participants reported that they were not familiar with computer art software or directives using a computer. This may be a deterrent in using the computer in therapy. This once again, is related to knowledge and training with computerized art making. If participants had some training, they may feel more comfortable with this medium

The results of the study indicated that much of the computer art software being used was Mac based software which requires a Mac computer rather than a personal computer. Mac computers are costly due to their graphic capabilities which could be discouraging to potential employers and art therapists in private practice. Also, cost could impact whether art therapists would buy a Mac computer for home or personal use adding to the lack of comfort around computer art making with this type of computer. It is important to note that there are various computer software packages available on the market today to accommodate all types of computers. These packages range from very inexpensive and user-friendly to very expensive and complicated to use. With the internet availability, these software packages can be easily researched. This study resulted in a variety of software being used in the field that may assist art therapists with such research.

Some of the software reported being used in the field is complicated software for users who do not have sufficient training. This could also be a factor as to why art therapists are reluctant to use computerized art making in therapy.

It was reported by 78% of the participants that computerized art making should be part of the curriculum, whether it be an elective or part of an experiential, in graduate studies. Only nine participants reported that it should not be incorporated into graduate studies. This may indicate that if art therapists had knowledge and training with computerized art making, they may be more likely to integrate this medium into treatment. Continuing education courses in computer art therapy are recommended, as this may be a useful resource for art therapists who are interested in acquiring more skill and training with this medium to do so.

Some of the benefits to using a computer in art therapy that would support its use are that there is no mess to clean up and the artwork is easy to recall as reported by the participants. Also, the participants reported that there are minimal supplies and no sink required which may be beneficial in certain settings, especially a hospital setting. One participant reported that the computer would be an effective medium to use with patients who may have an allergy to traditional media.

Although most of the participants were not using the computer for art therapy, they reported that if they were, they would offer the computer in conjunction with traditional media. They would also offer the computer to patients who were resistant to traditional media. Participants reported that computer art making is just another medium to offer to clients. Participants reported that they would also support the use of computerized art making if the client had an interest in this medium. The difficulty with this is that it is up to the therapist to give that choice, and if the therapist is not comfortable with using the computer to create artwork, it will not be offered.

It was described in the open-ended responses that the therapist can act as a teacher and guide when using the computer in therapy. This will enhance the therapeutic relationship according to the results of the study. Although this was reported in the survey results, according to Robbins (2000), the teacher within the therapist must be used sparingly, depending on whether the patient can internalize help that facilitates self-cohesion and independence or will sink into a passive, dependent conforming role (p. 43). Wadeson (1995) described this role more as offering technical assistance rather than the role of a teacher. It is important for the art therapist to be cognizant of what her role is as art therapist rather than teacher.

Majority of the participants discussed many different factors that would deter their use of computers in therapy. Cost appeared to be the most common theme among the qualitative responses. It appeared as though the cost of computers, software, and various supplies needed for computer art making would make it difficult in certain settings to use the computer with clients. Participants reported that budget constraints at their settings did not permit the purchase of computers or supplies for art therapy. It was also reported that availability to use a computer is a deterrent factor. This may be due to budget limitations or to lack of mobility of the computer in circumstances where the computer would need to be brought to a patient. Some of the participants expressed that their lack of training in computer software would deter them from this medium. Others expressed that the computer lacked sensory qualities. Another theme was that the computer was not conducive to group therapy. A few participants expressed safety concerns with using a computer in that clients could trip over cords, and one participant had witnessed a client throw a computer in therapy. Below are statements verbatim by participants relating to this topic:

would miss contact with materials (paint, clay, pastels, paper, wood, etc.),
cutting, gluing

In my personal experience, focusing on the relationship with the computer seems to detract from goals of interpersonal therapy.

I prefer to interface with clients and feel there is more "flow" in the act of making art, in the moment, with client.

I would need training on how to make art with a computer.

Lack of availability of computers for consumer use, and lack of experience doing art therapy using a computer

I've always been an advocate of using computers in art therapy but have never had access to the proper materials to make this happen. A computer lab for patient's to create their own artwork would be a dream come true.

Use of Computer Art Making in the Field of Art Therapy

Software and Input Devices Used

For those participants using the computer to create artwork, they reported using a wide range of software from Mac based software to photography software. The researcher investigated cost of the software that is being used by the participants in the field of art therapy. This information was obtained by internet searches and also from advertisements in the local newspapers. Some of the software is very costly and difficult to use without training, but other software is user friendly and inexpensive. There is software available for various skill levels. It is important that art therapists have training in computer art making software at some level or this medium will not be used in the future which is why it is recommended that art therapists have the resources available to obtain this knowledge and training.

Interpretation of Major Findings

The purpose of this study was to research how computers are being used in art therapy theory and practice and to learn more about the utilization of computers in art

therapy, the software and input devices being used, and the populations who computerized art making is being used with.

The major findings of this research were that with more education and training with computer software, the participants would be more likely to use the computer in therapy. It appeared that the lack of use was more about insecurities around not being comfortable with computer art software and the computer itself. It was also mentioned that if the participants were informed as to what directives could be implemented in computer art therapy, the participants would be more likely to try this medium in practice. The interpersonal effects, cognitive effects, and emotional effects could not be measured due to the participant's lack of professional experience with this medium.

Some of the resistance to using a computer in art therapy appeared to be due to the participant's lack of experience and training pertaining to computer software and the implications of using a computer in therapy. Some participants reported that if they knew how to facilitate computer art therapy, they would implement computerized art making in their treatment plan.

For some, it was expressed that there is no place for computers in art therapy theory and practice. The participants who expressed this opinion discussed the history of art and art media explaining the benefits, effects and dynamics of using traditional art media throughout history. Due the lack of historical data relating to computerized art making, it is difficult to compare art making with traditional media and computerized art making in terms of benefits, effects and dynamics. There is very limited research currently that specifically addresses these issues with computerized art making, therefore, warranting further research. It is important to note that the majority of the participants who responded to the survey had never used computerized art making in therapy or for

themselves. Few of the participants stated that they would never use computer art making in therapy while others appeared to be curious about the use of computerized art making and expressed that they would be interested in the results of this study. Therefore, many of the responses to the survey were based on assumption and not actual experience.

Because the responses to the survey were given by participants with very little knowledge and experience with using the computer to create artwork, this has been described further in the limitation section of this study.

It was stated in one article from 1997 that the primary resistance for using this medium in practice had been from clinicians (Wright & Wright, 1997). Based on the results of this study, it appears as though this is still true today. Even though the literature is from 1997, it is important to recognize that resistance by art therapists may still be a factor in computers not being used in art therapy in 2008. This lack of use could be due to the art therapist's lack of experience and training in the use of computerized art making and the lack of research relating to the effectiveness of this medium and the implications of using this medium in art therapy.

Common Themes

In the process of analyzing the data, several themes emerged. Some of the themes that emerged were:

- The participants did not have the education in computer use which was a factor in having confidence to embark on trying a new medium in practice.
- Lack of computer experience was also a recurring theme amongst the participants.

Many of the participants expressed that they did not use a computer very often

except for internet, administrative tasks and email. They were not comfortable with using the computer for anything other than that.

- Lack of tactile qualities with a computer was also a concern of the participants.
- Populations who would benefit were adolescents, children, clients with ADHD and clients with physical disabilities.

The lack of sensory qualities of computer art making was a common theme throughout the study. The literature is limited with regards to the sensory qualities of the computer being compared with the sensory qualities of traditional media. Because the research is so limited with regards to sensory qualities, it is difficult to address these issues in this research study. It is mentioned throughout the literature that there may be limitations pertaining to tactile stimulation or lack of tactile stimulation while using a computer, but there has been no research comparing traditional media's sensory qualities to computerized art making's sensory qualities. In one article addressing computers and art therapy, the author stated that after long sessions on the computer, she had often felt a tremendous hunger for the tactile stimulation and physical generation of energy that traditional art making can provide. The author also went on to say that traditional media can be effectively combined with digital images in a give-and-take relationship (Parker-Bell, 2003). Once again, there is no literature that directly addresses the issues of sensory qualities relating directly to computerized art making.

The general theme throughout this research was that computers are the way of the future, and even those who not using computers to create art work in therapy, expressed an interest in the outcome of this study.

It appeared as though the opinions of the participants were based on the artistic aspects of art therapy rather than the clinical aspects of art therapy. One participant

stated, “you need to spend more time on fine art, you cannot be a good art therapist if you do not know all processes of creating.” This is an important statement which could be a factor in the lack of computer use in art therapy. Throughout the study, the participants reported their own lack of experience and training with computer art making software. They also expressed concern about their client’s lack of training using different types of software. The therapist would need to be knowledgeable about the software in order to assist his/her clients in using this medium just as with any other type of medium. This is an important aspect of computerized art making in art therapy which could support the need for training in using this medium. Barbara Parker-Bell (as cited in Peterson et al, 2005) wrote about the possibilities associated with the use of computers for art therapy. Her article considered the notion that computers may be underutilized because many art therapists are not educated in the operation of computer hardware and software related to graphic design (p. 140). Hartwich and Brandecker (1997) concluded, “Prejudice against the computer comes more from the therapists than from patients” (p. 372). Art therapists may resist the use of computer art making in therapy more than their clients (Peterson et al, 2005, p. 140).

Because it was reported that computerized art making should be a part of graduate studies, it may be important to research further if computerized art making should be a pre-requisite of being accepted into an art therapy program. Art therapists may be more comfortable with using this medium if they have been trained to use it which has been addressed in the limitations section of this paper.

Another factor that is important to the use of computerized art making in art therapy was that most of the art therapists who responded to the survey did not know anyone using this medium in therapy. 63% (129) of the participants reported not

knowing anyone in the field using computerized art making in art therapy. 39% (73) reported only knowing a few people, and only 10% or 2 people out of 208 participants who responded to the survey knew “many” people using computerized art making in art therapy. This could be an influencing factor as to why computers are not being used in the field. If art therapists are not trained in this medium and do not have support from peers, they may be less likely to try something new. This may be an important factor in integrating this medium into art therapy theory and practice.

Clinical Applications

It is evident by the research that computerized art making is not being used in art therapy theory and practice. It appears as though with education and proper training with computer hardware and software this medium may be more widely used in practice. Further research on the effectiveness of computerized art making in therapy is needed to investigate this further.

Many possibilities for creative work on the computer are evolving. Adaptive equipment, creativity, and image-altering software are just the beginning of computer options for art therapists (Parker-Bell, 2003, p. 184). There has been some indication that interaction with a computer can enhance the art therapy process (Collie & Cubranic, 1999, p. 187).

McLeod (1999) states,

The process of computer art is no longer restrictive or difficult to master. Programs are set up in a very intuitive manner with recognizable icons representing tool functions on the edge of the screen. Tools are selected with the click of a button. Many software tools mimic dimensional media functions such as pressure-sensitive functions that allow crayon and chalk

tools to add thicker color very easily. Texture tools add canvas, sandpaper and even snakeskin patterns underneath the soft drawing tool marks. Smear and smudge tools add a fantasy-like quality, softening edges like working with dimensional pastels. The best part of computer-assisted art therapy is the empowerment for clients who find natural dimensional media limiting (p. 201).

The survey results indicated that children, adolescents and people with ADHD and disabilities could benefit from the use of computerized art making in therapy. The literature addresses this and states that “computers can make art therapy easier for people with disabilities and attention difficulties and can be used in settings that are not equipped to handle the messiness of traditional art materials” (Collie & Cubranic, 1999, p. 187). Occasionally, computers may be the only art tool suitable for some physically challenged people (Parker-Bell, 2003, p. 181).

Robbins (2000) stated,

Experience using a wide range of media is what will give the therapist a participative awareness of the potentialities of various materials, allowing him to capitalize on their inherent qualities as well as more creative or subtle applications to address the therapeutic issues at hand (p. 104).

Limitations of the Study

Limitations of the study will be identified beginning with technical aspects of the email list and the survey data base ZAPSurvey©. The email addresses were extracted from the American Art Therapy Association website. Many of the addresses on the list were not current, therefore, over 2,000 emails were returned as undeliverable. Other

emails were returned as the participants had spam blocker turned on and, therefore, participants could not receive email from unknown senders.

Because the questionnaire was distributed via email, there could have been biases toward technology in that the participants who were comfortable with using a computer responded and those who were not comfortable with using a computer did not respond. Also, the title of the survey could have discouraged participants in responding if the participant's view of computer use in therapy is negative. This could have also skewed the results negatively if the participant's motivation for completing the survey was to express their disapproval for the use of computers in art therapy. The results could have been skewed positively if the participant's who were comfortable with using the computers were responding based on that.

Because the majority of the participants represented were female, the results of the survey could have been skewed. There may have been a different outcome had gender been distributed more evenly.

Technical Aspects

Technical difficulties arose when an email reminder was sent one week after the survey was initially distributed. The email reminder resulted in notices being sent every two hours which caused frustration for some of the participants. The participants emailed the co-investigator expressing their frustration with receiving multiple emails. This may have influenced their responses to the survey, and it may have also caused the participants to not respond at all to the survey.

In addition, the first few days of the survey, participants had difficulty closing out of the survey. There was no way to tell if the participant's responses were recorded in the final responses. Also, the completion time was listed as 30 minutes. Although, the

survey did not require 30 minutes to complete, this may have deterred participants from committing to complete the survey.

Another limitation to the survey itself was that the co-investigator had hoped to keep the survey open for at least three weeks, but had to close it after only two weeks due to time constraints.

Survey Structure

With regards to the actual structure of the survey, there were a few questions that asked about preference for media either by the participant or the client. This question required a “select all that apply” response. The co-investigator inadvertently did not have “clay” on the list of choices although there was a place to list “other” of which participants did add clay at that time. 3-D media was on the list, but should have been more specific to types of 3-D media. Clay is a very important and a frequently used medium in art therapy, and it should have been an option to select from. This was added as a separate medium and illustrated as such on the bar graphs after hand counting the responses in the qualitative section of the survey.

It was assumed by the co-investigator that the participants owned a computer. This should have been a question on the survey along with the type of computer that the participants owned if applicable.

The survey structure appeared to be easy to complete, as there were no recommendations by the participants for improvements. The questions were short and concise in order to engage the participants. There were limited qualitative questions in an effort to save time so that participants would not be deterred from continuing with the survey. Some questions were redundant but necessary in order to evoke different

responses to allow the responses to be clear as to how computerized art making is being utilized in practice.

Results

The next section will describe limitations regarding the results of the survey. The majority of the participants were female. There was not a representative sample of gender for the study. Another limitation is that many of the participants who responded to the study had little or no experience with computer art making either with patients or with themselves. For many people in this field, the fact that they considered themselves an artist or fine artist may have influenced their view on computer art making. Because the therapist must function in two worlds simultaneously—the world of psychotherapy and art—he must be able to integrate different levels of expertise (Robbins, 2000, p. 115).

Implications for Future Research

It is hoped that this discussion will stimulate further research on computerized art making in the field of art therapy theory and practice. Many themes emerged that would warrant further research such as the lack of experience and education around the use of computers in therapy as this appeared to be a main concern of the participants.

The study resulted in specific areas that need to be researched further. They are listed below:

Lack of Experience and Training

Because it appeared as though the participants did not have sufficient experience and training with computerized art making, they were reluctant to use this medium. The results supported this finding in that 78% of the participants reported that computerized art making should be a part of the graduate studies curriculum. 161 participants reported further that it should be an elective or part of experientials. This may indicate that if art

therapy students had training with this media, they may feel more comfortable using it in therapy. Continuing education may be an alternative for art therapists to gain skill and training with using this medium.

According to the literature, there is a need for art therapy graduate programs to look at the issue of technology use within art therapy to best prepare current and future art therapists to work with such media in the field (Orr, 2006, p. 191). The literature states that there are universities offering “Computer Assisted Art Therapy” programs as an elective in graduate studies (Orr, 2006).

Sensory Qualities of Media

In addition, the sensory qualities of traditional media should be compared with the sensory qualities of computerized art making to determine the effects, cognitively, emotionally and interpersonally on the client. The properties and nature of art media is central to the theory and practice of art therapy.

Robbins (2000) states,

Although there are inherent qualities in any given art material that may make it more or less appropriate for use with any given diagnostic category, art materials can be used in a multitude of ways to promote an ever adapting holding environment sensitive to a patient’s changing levels of ego integration, defenses, resistances, object representations, and the like (p. 104).

The lack of tactile qualities of computerized art making was mentioned throughout the survey. It appeared as though there a perception by the participants that there is a lack of sensory qualities when using a computer for art making. A question to be researched further would be to look at the concern of tactile qualities in terms of the possible uniqueness of the computer’s sensory qualities rather than the lack of the

computer's sensory qualities. Robbins (2000) talks about the importance of texture from the perspective of the touch issues of any given patient. On one level, these issues have to do with one's style of relating to others, as seen projected into the "texture" of the therapeutic relationship (p. 106). He goes on to discuss how different textures can represent different things to each patient. Materials can be used to mirror, complement, or confront such dimensions. A patient at a presymbiotic level may require a material that provides soothing, comforting sensations. It might become important to use different textures with an autistic child, or actually stroke him, to help shift the focus from proprioceptive workings to a cathection of the external body (p. 107). If one looks at the computer in terms of unique sensory qualities rather than a lack of sensory qualities, it may be more likely to be used in therapy.

Effectiveness

Another area of research that is extremely important to the field of art therapy is the effectiveness of using a computer as a medium in art therapy theory and practice. There needs to be evidence-based research in order to support the use of computerized art making in art therapy theory and practice. This can only be achieved by conducting human subject's studies in which the cognitive, emotional and interpersonal implications of using a computer in art therapy can be investigated further possibly by conducting a case study.

Populations

Because adolescents and children were mentioned throughout the survey's qualitative results as populations who would benefit from this medium, these populations should be investigated further in using computerized art making. Also, ADHD clients and clients with physical disabilities should be included in this investigation due to the

opinions of the participants when asked what populations could benefit from computerized art making. The literature reflects this which was described previously in this discussion.

Conclusion to Discussion

This topic was an ambitious and controversial topic for the field of art therapy. It is also a necessary topic to research further as technology is the way of the future. The field of art therapy may be ready to embrace this medium once there is sufficient proof of effectiveness and benefits, if any. This can only be achieved through further research.

In conclusion, although many of the participants responded that they felt very to somewhat comfortable using a computer, they were not using the computer for computerized art making. Their comfort level with using a computer was related to the use of computers for internet use, administrative tasks, and email, not computerized art making. This appeared to be, once again, due to lack of training and experience with using computer art making in therapy.

Orr (2006) states,

As the field of art therapy grows and develops, it is constantly integrating new tools to meet the needs of clients. Technology is one such tool that has received increased attention recently. As much as art therapists may cry that technology is cumbersome, difficult, or even counterproductive to therapeutic interactions, computer, electronic, and digital technology have become part of daily life, both personal and professional (p. 191).

In the event that this study is considered a basis for future studies, the analyses conducted and recommended may prove helpful in providing a framework for future research.

CHAPTER 6: SUMMARY AND CONCLUSIONS

This study was conducted to explore the current utilization of computerized art making in art therapy theory and practice. The research questions was, “How can computerized art making be integrated into art therapy theory and practice?”

The rationale for addressing this research question was that there was minimal research on the qualities of the art experience and the therapeutic implications of using computer generated art in art therapy.

The literature reviewed included contextual information relating to the use of computers in healthcare, mental health, and art therapy. The literature concluded that technology plays an important role in society today and especially in healthcare. With children today being exposed to computers at an early age, the future of healthcare in many different aspects will undoubtedly be impacted by the use of technology. The field of art therapy is one field in mental health that could greatly benefit from the use of computers in treatment according to the literature.

A survey was developed and distributed to credentialed practicing art therapists in the United States. The survey content was guided by the following categorical components: 1) Demographic information; 2) What is the current utilization of computerized art making; 3) What are the specific methods or computer software programs being used; 4) Who are the clinical populations with whom the computer art making is being implemented by; 5) What are the comparisons with other art media in art therapy; 6) What is the cognitive, emotional and interpersonal effects of the computerized art making experience within the therapeutic relationship; 7) What are the issues of art storage and confidentiality when using computerized art making; 8) What is the

prevalence of computer art making in the field of art therapy; 9) How is the use of computerized art making integrated into art therapy; 10) How and when should computerized art media be incorporated into art therapy, and; 11) How can this experience be used in art therapy treatment.

The data analysis of the participants' survey responses identified factors as to why computers are not being utilized in art therapy. For one, many participants expressed that they were not comfortable with using the computer for art making because they were not experienced or trained with the different software available that is used to create artwork. Therefore, the participants reported in the study that computerized art making should be part of graduate studies whether it be as an elective or part of the curriculum. This may suggest that if the participants had experience and training around the use of computerized art making, they may be more likely to use it in therapy. Another factor was that although many of the participants were very comfortable using a computer, they were using it only for email and administratively, not creatively. Also, the majority of the participants did not know of any colleague using the computer in art therapy. This may be influential to the participants engaging in computerized art making with clients, as there would not be support from colleagues if needed.

The data also represented the participant's concern for the unique sensory qualities of a using a computer to create artwork and the effects of using this medium in therapy. Because art therapy is built on the inherent qualities of traditional art media and the role that media plays in therapy, this concern is one that warrants further research.

This study resulted in many other areas for further research. The computer is a potentially important tool to be considered as a medium in art therapy theory and practice. Research with human subjects would be a more valid study when looking at

cognitive, emotional, interpersonal and therapeutic relationships when using a computer for art making. Also, human subject's studies would also give a better understanding as to the limitations and benefits, if any, to using a computer in art therapy.

References

- Al-Ubaydli, M. (2004), Clinical Review: Handheld Computers. *BMJ*, 328, 1181-1184.
- American Art Therapy Association (2008). *About Art Therapy*. Retrieved March 16, 2008, from <http://www.arttherapy.org/>
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders, text revision (4th Ed.)*. Washington, DC: American Psychiatric Association.
- Bloom, B.L. (1992). Computer-assisted psychological intervention: a review and commentary. *Clinical Psychology Review*, 12, 169-197.
- Brauer, G. (1992). Telehealth: The delayed revolution in health care. *Medical Progress Through Technology*, 18, 151-163.
- Canter, D.S. (1987). The therapeutic effects of combining Apple Macintosh computers and creativity software in art therapy sessions. *Art Therapy: Journal of the American Art Therapy Association*, 4(1), 17-26.
- Canter, D.S. (1989). Art therapy and computers. In H. Wadeson, J. Durkin & D. Perach (Eds.), *Advances in art therapy* (pp. 296-316). New York: John Wiley & Sons.
- Collie, K., & Cubranic, D. (1999). An art therapy solution to a telehealth problem. *Art Therapy Journal of the American Art Therapy Association*, 16(4), 186-93.
- Collie, K., & Cubranic, D. (2002). Computer-Supported Distance Art Therapy: A Focus on Traumatic Illness. *Journal of Technology in Human Services*, 20(1-2), 155-171.
- Collie, K., Cubranic, D., & Long, B. (2002). Audiographic communication for distance counseling: a feasibility study. *British Journal of Guidance and Counseling*, 30(3), 269-284.

- Denham, P. (1993). Nine-to fourteen-year-old children's conception of computers using drawings. *Behaviour & Information Technology*, 12(6), 346-358.
- Dinkmeyer, D., Jr., & Carlson, J. (Eds). (1983). Special issue on computers. *Elementary School Guidance and Counseling*, 18(1).
- Eng, T.R., Maxfield, A., Patrick, K., Deering, M.J., Ratzan, S.C., & Gustafson, D.H. (1998). Access to health information and support: A public highway or a private road? *JAMA*, 280, 371-1375.
- Ford-Jones, A. (2003). What physicians and parents should know about the Internet. *Pediatric Child Health*, 8, p. 257-259.
- Fryrear, J.L., & Corbit, I.E. (1992). *Photo art therapy. A Jungian perspective*. Springfield, Illinois: CC Thomas.
- Greist, J., Gustafson, D., Stauss, F., Rowse, G., Luaghren, T., and Chiles, J. (1973). Computer interview for suicide-risk prediction. *American Journal of Psychiatry*, 130, p. 1327-1332.
- Gussak, D., & Nyce, J. (2005). To Bridge Art Therapy and Computer Technology: The Visual Toolbox. *Journal of the American Art Therapy Association*, 22(3), 194-196.
- Henderson, K. (1991). Flexible sketches and inflexible data bases: Visual communication, conscription devices, and boundary objects in design engineering. *Science, Technology, and Human Values*, 16(4), 448-473.
- Hartwich, P., & Brandecker, R. (1997). Computer-based art therapy with inpatients: acute and chronic schizophrenics and borderline cases. *The Arts in Psychology*, 24(4), 367-373.

- Jones, S. (2000). Psychiatric-mental health nursing and the Web. *Archives of Psychiatric Nursing*, 14(5), p. 211-212.
- Levick, M. (1983) *They could not talk and so they drew*. Springfield, Illinois: Charles C. Thomas Publisher.
- McLeod, C. (1999). Empowering creativity with computer-assisted art therapy: an introduction to available programs and techniques. *Art Therapy Journal of the American Art Therapy Association*, 16(4), p. 201-205.
- McNiff, S. (1999). The Virtual Art Therapy Studio. *Journal of the American Art Therapy Association*, 16(4), 197-200.
- Malchiodi, C. (2000). *Art Therapy & Computer Technology: A Virtual Studio of Possibilities*. London and Philadelphia: Jessica Kingsley Publishers.
- Maroldo, G. (1990). Computer Projective Drawings of Juvenile Offenders and College Freshmen. *Psychological Reports*, 67, 1136-1138.
- Mertens, D. (2005). *Research and evaluation in education psychology: Integrating diversity with quantitative, qualitative, and mixed methods (2nd ed.)*. California: Sage Publication.
- Miller, K., Bunch-Harrison, S., Brumbaugh, B., Kutty, R, FitzGerald, K. (2005) Meaning of Computers to a Group of Men Who Are Homeless. *The American Journal of Occupational Health*, 59(2), p. 191-197
- National Telecommunications and Information Administration. (2002, February). A nation online: How Americans are expanding their use of the internet. Retrieved February 15, 2008, from <http://www.ntia.doc.gov/ntiahome/dn/anationonline2>
- Naumburg, M. (1987). *Dynamically Oriented Art Therapy*. Magnolia Street Publishers: Chicago, Illinois.

- Newman, M.G., Consoli, A.J., and Taylor C.B. (1997). Palmtop computer program for treatment of GAD: development of a cost-effective psychotherapy aid. *Behavior Modification*, 32, p. 11-18.
- Nickerson, E.T. (1983). Art as a play therapeutic medium. *Handbook of Play Therapy*, ed. C.E. Schaefer and K.J. O'Connor. New York: Wiley.
- Orr, P. (2006). Technology Training for Future Art Therapists: Is There a Need? *Journal of the American Art Therapy Association*, 23(4), 191-196.
- Parker-Bell, Barbara (2003). Embracing a Future with Computers and Art Therapy. *Journal of the American Art Therapy Association*, 22(3), 180-185.
- Parkin, A. (2000). Computers in clinical practice: applying experience from child psychiatry. *BMJ*, 321, 615-618.
- Peterson, B., Stovall, K., Elkins, D., & Parker-Bell, Barbara (2005). Art Therapists and Computer Technology. *Journal of the American Art Therapy Association*, 22(3), 139-149.
- Proudfoot, J., Swain, S., Widmer, S., Watkins, E., Goldberg, D., Marks, I., Mann, A., and Gray, J.A. (2003). The development and beta-test of a computer-therapy program for anxiety and depression: hurdles and lessons. *Computers in Human Behavior*, 12(3), p. 277-289.
- Repique, R.J. (2007). Computers and Information Technologies in Psychiatric Nursing. *Perspectives in Psychiatric Care*, 43(2), p. 77-83.
- Robbins, A. (2000). *The Artist as Therapist*. Philadelphia: Jessica Kingsley Publishers.
- Rubin, J. (2001). *Approaches to Art Therapy Theory and Technique Second Edition*. Philadelphia, PA: Brunner-Routledge.

- Rubin, J. (1984). *Child Art Therapy Second Edition. Understanding and helping children grow through art*. New York: Van Nostrand Reinhold Company, Inc
- Schaefer C., and Cangelosi, D. (2002). *Play Therapy Techniques*. Lanham, Maryland Rowman & Littlefield Publishers, Inc.
- Scheck-McAlearney, A., Schweikhart, S., & Medow, M. (2004). Doctors' experience with handheld computers in clinical practice: qualitative study. *BMJ*, 328:1162 (15 May).
- Stock, S., Davies, D., Davies, K., & Wehmeyer, M. (2006). Evaluation of an application for making palmtop computers accessible to individuals with intellectual disabilities. *Journal of Intellectual & Developmental Disability*, 31(1), p. 39-46.
- Straker, L., Pollock, C., & Burgess-Limerick (2006). Towards evidence-based guidelines for wise use of computers by children. *International Journal of Industrial Ergonomics*, 36, p. 1045-1053.
- U.S. Department of Commerce. (2000, October). Falling through the net: Defining the Digital Divide. Retrieved February 15, 2008, from <http://www.ntia.doc.gov/ntiahome/fttn99/charts.html>
- Wadson, H. (1980). *Art Psychotherapy*. New York, NY: John Wiley & Sons
- Wadson, H., Durkin, J., & Perach, D. (1989). *Advances in Art Therapy*. New York: John Wiley and Sons, Inc.
- Wadson, H. (1995). *The Dynamics of Art Psychotherapy*. New York, NY: John Wiley & Sons
- Waller, D. (2004). *Group Interactive Art Therapy. Its use in training and treatment*. Brunner Routledge: New York, NY

- Weinberg, Diane J. (1985). The Potential of Rehabilitative Computer Art Therapy for the Quadriplegic, Cerebral Vascular Accident and Brain Trauma Patient. *Art Therapy, June*, 66-72.
- Whitten, J.L., Bentley, L.D., & Dittman, K.C. (2001). Systems analysis and design methods (5th ed.). New York: McGraw-Hill.
- Winnicott, D.W. (1971). *Therapeutic Consultations in Child Psychiatry*. New York: Basic Books.
- Wright, J. and Wright A. (1997). Computer-assisted psychotherapy. *Journal of Psychotherapy Practice and Research*, 6, p. 315-329.

APPENDIX A



E-Mail Announcement Request for Volunteers Pilot Study

Principal Investigator **Nancy Gerber, PhD, ATR-BC, LPC**, and Co-Investigator **Barbara A. Kuleba, BA**, from the Hahnemann Creative Arts in Therapy Program at Drexel University, in Philadelphia, Pennsylvania, USA, invite volunteers to participate in a web-based survey as a part of a research study in partial fulfillment of Mrs. Kuleba's master's degree. The survey will explore the aspects and implications of integrating computerized art making as a medium in art therapy theory and practice.

Title of the Study: The Integration of Computerized Art Making as a Medium in Art Therapy Theory and Practice

Purpose of the Study: The purpose of this research study is to address how art therapists can integrate computerized art making as a medium in art therapy theory and practice.

Inclusion Criteria:

- Healthy participants involved in market research

Exclusion Criteria:

- Individuals who do not meet the participant inclusion criteria

Estimated Survey Completion Time: 30 minutes

Instructions for Participation and Confidentiality:

- Please **DO NOT** respond to this e-mail.
- Anonymity and confidentiality of individuals who qualify under the Inclusion Criteria will be protected by responding to a secure website via the hyperlink below.
- Volunteers are instructed to respond to the survey by clicking on the survey link:
- <http://www.zapsurvey.com/Survey.aspx?id=ae252e24-b6b9-409e-8571-bdbf3e469417>
- Please note that websites can be violated and, therefore, protection of anonymity cannot be fully guaranteed.
- Participation in this study is voluntary. Volunteers may choose to not answer any questions that might cause undue anxiety. You may end the survey at any time if you decide not to participate.
- ***Please complete and submit this survey by February 15, 2008.***

This research study is being conducted by a member of Drexel University.

APPENDIX B



Phase I - Pilot Study: The Integration of Computerized Art Making as a Medium in Art Therapy Theory and Practice

Appendix B

1. Are you a practicing art therapist in the United States? (If no, please do not complete the survey.)

Yes

No

2. How long have you been practicing art therapy professionally?

< 5 yrs

5-10 yrs

11-15 yrs

>15 yrs

3. Are you a male or female?

Male

Female

4. What is your age?

<25

25-30

31-40

41-50

51-55

56-60

>60

5. What state do you reside in?

If other:

6. What state(s) do you practice in?

If other:

7. What did you receive your undergraduate degree in?

If other:

8. What did you receive your master's degree in?

If other:

9. Did you graduate from an accredited art therapy program?

Yes

No

10. At what institution did you receive your graduate art therapy training?

If other:

11. In what types of settings have you worked during your career and how long? (Select all that apply)

	< 5 yrs	5-10 yrs	11-15 yrs	16-20 yrs	> 20 yrs
School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical Setting (i.e., hospital)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mental Health Setting Inpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mental Health Setting Outpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forensic Setting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Residential Treatment Facility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Day Center	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. If you checked "other" in Question 11, please list other settings and length of time worked in that setting.

13. What is your level of comfort with using a computer?

Very Comfortable

Somewhat Comfortable

Not Comfortable

14. How much overall computer experience do you have?

< 5 yrs

5-10 yrs

11-15 yrs

> 15 yrs.

15. Do you use a computer in your practice? (Please include use for art therapy, administrative responsibilities, etc.)

Very Much

Somewhat

Very Little

Never

16. How have you used a computer in your practice (Select all that apply)?

Administrative

Keeping Notes

To create own artwork

To have patients create artwork

Internet

Email

Other (Please Specify)

17. Do you currently use a computer for your client's to create artwork?

Yes

No

18. Do you currently use a computer to create your own artwork?

Yes

No

19. If using computer art making with clients, how long have you been using this medium?

< 5 yrs,

5-10 yrs

11-15 yrs

> 15 yrs.,

NA

20. On average, how many art therapy sessions do you have per week?

- < 5
- 5-10
- 11-15
- 16-20
- 21-25
- >25

21. On average, how many art therapy sessions per week involve computer art making?

- <5
- 5-10
- 11-15
- 16-20
- 21-25
- >25

22. On average, how many sessions per client involve computer art making?

- <5
- 5-10
- 11-15
- 16-20
- 21-25
- >25

23. How important is the use of computers in general in your practice?

- Very important
- Important
- Not very important
- NA

24. How important is the use of computer art making in your practice?

- Very important
- Important
- Not very important
- NA

25. What factors would be a deterrent for you in using computers in Art Therapy? (Select all that apply)

- Lack of comfort with a computer
- Lack of comfort with computer software
- Don't feel it would benefit patients

Software is inadequate

Cost of computers

NA

Other (Please Specify)

26. What factors would support your use of computers in Art Therapy? (Select all that apply)

More computer experience

Computer Training

Available computer

Adequate software

Other (Please Specify)

27. What input devices do you prefer when creating computer artwork? (Select all that apply)

Mouse

Light Pen

Keyboard

Touch Screen

NA

Other (Please Specify)

28. If your clients are using computers in art therapy, what input devices do they prefer? (Select all that apply)

Mouse

Light Pen

Keyboard

Touch Screen

NA

Other (Please Specify)

29. What computer software applications do you currently use for general use? (Select all that apply)

MicrosoftWord

Excel

PowerPoint

Publisher

PhotoShop

Illustrator

NA

Other (Please Specify)

30. What computer software applications do you use to create computerized art? (Select all that apply)

MicrosoftWord

Excel

PowerPoint

Publisher

PhotoShop

Illustrator

Paint

NA

Other (Please Specify)

31. What computer software applications do your client's use for computerized art making? (Select all that apply)

MicrosoftWord

Excel

PowerPoint

PhotoShop

Illustrator

Paint

NA

Other (Please Specify)

32. In your professional opinion, what populations would benefit most from computerized art making? (Select all that apply)

Schizophrenia

Borderline Personality

Bipolar

Major Depression

ADHD

Oppositional Defiant

Conduct Disorder

Children

Adolescents

Adults

Geriatric

All

None

Other (Please Specify)

33. In your professional opinion, what populations would benefit the least from computerized art making? (Select all that apply)

Schizophrenia

Borderline Personality

Bipolar

Major Depression

ADHD

Oppositional Defiant

Conduct Disorder

Children

Adolescents

Adults

Geriatric

All

None

Other (Please Specify)

34. What population are you using computerized art making with? (Select all that apply)

Schizophrenia

Borderline Personality

Bipolar

Major Depression

ADHD

Oppositional Defiant

Conduct Disorder

Children

Adolescents

Adults

Geriatric

None

Other (Please Specify)

35. What is your preferred medium to use in treatment? (Select all that apply)

Pencil

Paint

Collage

- Cray Pas
- Chalk Pastels
- Crayon
- Markers
- 3-D
- Computer
- Don't have a preferred medium
- Determined by patient's needs
- Other (Please Specify)

36. What is your preferred medium to use as an artist? (Select all that apply)

- Pencil
- Paint
- Collage
- Cray Pas
- Chalk Pastels
- Crayon
- Markers
- 3-D
- Computer
- Don't have a preferred medium
- Other (Please Specify)

37. What are the most important qualities of traditional media?

38. What are the qualities of traditional media that you enjoy the least?

39. In your professional experience, what are the cognitive effects of using computerized art making?

40. In your professional experience, what are the emotional effects of using computerized art making?

41. In your professional experience, what are the interpersonal effects of using computerized art making?

42. Do you believe there could be potential issues relating to confidentiality when using a computer for art making? Why or why not?

43. Do you believe there are issues with art being stored electronically? (If yes, please explain)

No

Yes (Please Explain)

44. What are the benefits to using a computer for art therapy? (Select all that apply)

Accessibility

Easy to wheel in and out of patients' room

Easy to clean and sanitize

No sink required

No mess to clean up

Minimal supplies

Easy storage

Easy to recall artwork

No benefit

Other (Please Specify)

45. At what point would you decide to offer the computer as a medium rather than traditional media? (Select all that apply)

- After assessment
- After trying other media
- Patient resistant to using traditional media
- In conjunction with traditional media
- NA
- Other (Please Specify)

46. In therapy with a patient how often would you utilize the computer in art therapy?

- Frequently
- Sometimes
- Infrequently
- Never

47. How many art therapists do you know who are using the computer as a medium in art therapy?

- Many
- A Few
- None

48. Should computer art making be a part of the curriculum in graduate studies? (If no, skip to Question #50).

- Yes
- No

49. How much training in computer art therapy should be incorporated into graduate studies?

- Required course
- Elective
- Part of experientials
- Unsure
- None
- Other (Please Specify)

50. When using a computer in art therapy, briefly explain the therapeutic relationship during this process (if applicable).

51. How can computers be used in Art Therapy Treatment? Explain briefly.

52. Identify any suggestions for changes, additions, and/or deletions that you feel would improve this survey.

Powered by **ZAPSurvey**
Powered by ZapSurvey

Finished

Quit

APPENDIX C



E-Mail Announcement Request for Volunteers

Principal Investigator **Nancy Gerber, PhD, ATR-BC, LPC**, and Co-Investigator **Barbara A. Kuleba, BA**, from the Hahnemann Creative Arts in Therapy Program at Drexel University, in Philadelphia, Pennsylvania, USA, invite volunteers to participate in a web-based survey as a part of a research study in partial fulfillment of Mrs. Kuleba's master's degree. The survey will explore the aspects and implications of integrating computerized art making as a medium in art therapy theory and practice.

Title of the Study: The Integration of Computerized Art Making as a Medium in Art Therapy Theory and Practice

Purpose of the Study: The purpose of this research study is to address how art therapists can integrate computerized art making as a medium in art therapy theory and practice.

Inclusion Criteria:

- Individuals who are practicing art therapists who are professional members or professional credentialed members of AATA.
- Individuals who are practicing art therapists who are listed in the categories of "professional" members or "professional credentialed" members of AATA. A professional member is an individual who has completed professional training in art therapy. A professional credentialed member is an individual who has been approved for professional membership by the American Art Therapy Association (AATA) and who maintains current registration (ATR) and or certification with the Art Therapy Credentials Board (ATCB) (AATA Membership Director, 2004-2005)
- Individuals practicing in the United States.

Exclusion Criteria:

- Individuals who do not meet the participant inclusion criteria and who are not practicing art therapists in the United States will be excluded from this study.
- Students are excluded from participating in the study.
- Associate and retired members of the AATA are excluded from this study. Associate members are not art therapists. Retired members are not currently practicing.
- Participants recruited from the AATA member's list who do not have a complete email address listed on the AATA website will be excluded from the study.

Estimated Survey Completion Time: 30 minutes


Instructions for Participation and Confidentiality:

- Anonymity and confidentiality of individuals who qualify under the Inclusion Criteria will be protected by responding to a secure website via the hyperlink below.
- Please **DO NOT** respond to this e-mail

- Please note that websites can be violated and, therefore, protection of anonymity cannot be fully guaranteed.
- Participation in this study is voluntary. Volunteers may choose to not answer any questions that might cause undue anxiety. You may end the survey at any time if you decide not to participate.
- ***Please complete and submit this survey by March 14, 2008.***

This research study is being conducted by a member of Drexel University.

APPENDIX D



The Integration of Computerized Art Making as a Medium in Art Therapy Theory and Practice

Appendix D

1. Are you a practicing art therapist in the United States? (If no, please do not complete the survey.)

Yes

No

2. How long have you been practicing art therapy professionally?

< 5 yrs

5-10 yrs

11-15 yrs

>15 yrs

3. Are you a male or female?

Male

Female

4. What is your age?

<25

25-30

31-40

41-50

51-55

56-60

>60

5. What state do you reside in?

If other:

6. What state(s) do you practice in?

If other:

7. What did you receive your undergraduate degree in?

If other:

8. What did you receive your master's degree in?

If other:

9. Did you graduate from an accredited art therapy program?

Yes

No

10. At what institution did you receive your graduate art therapy training?

If other:

11. In what types of settings have you worked during your career and how long? (Select all that apply)

	< 5 yrs	5-10 yrs	11-15 yrs	16-20 yrs	> 20 yrs
School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Medical Setting (i.e., hospital)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mental Health Setting Inpatient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mental Health Setting Outpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forensic Setting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Residential Treatment Facility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Day Center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. If you checked "other" in Question 11, please list other settings and length of time worked in that setting.

13. What is your level of comfort with using a computer?

Very Comfortable

Somewhat Comfortable

Not Comfortable

14. How much overall computer experience do you have?

< 5 yrs

5-10 yrs

11-15 yrs

> 15 yrs.

15. Do you use a computer in your practice? (Please include use for art therapy, administrative responsibilities, etc.)

Very Much

Somewhat

Very Little

Never

16. How have you used a computer in your practice (Select all that apply)?

Administrative

Keeping Notes

To create own artwork

To have patients create artwork

Internet

Email

Other (Please Specify)

17. Do you currently use a computer for your client's to create artwork?

Yes

No

18. Do you currently use a computer to create your own artwork?

Yes

No

19. If using computer art making with clients, how long have you been using this medium?

< 5 yrs,

5-10 yrs

11-15 yrs

> 15 yrs.,

NA

20. On average, how many art therapy sessions do you have per week?

- < 5
- 5-10
- 11-15
- 16-20
- 21-25
- >25

21. On average, how many art therapy sessions per week involve computer art making?

- <5
- 5-10
- 11-15
- 16-20
- 21-25
- >25

22. On average, how many sessions per client involve computer art making?

- <5
- 5-10
- 11-15
- 16-20
- 21-25
- >25

23. How important is the use of computers in general in your practice?

- Very important
- Important
- Not very important
- NA

24. How important is the use of computer art making in your practice?

- Very important
- Important
- Not very important
- NA

25. Do you consider yourself a fine artist?

- yes
- no

26. What factors would be a deterrent for you in using computers in Art Therapy? (Select all that apply)

- Lack of comfort with a computer
- Lack of comfort with computer software
- Don't feel it would benefit patients
- Software is inadequate
- Cost of computers
- NA
- Other (Please Specify)

27. What factors would support your use of computers in Art Therapy? (Select all that apply)

- More computer experience
- Computer Training
- Available computer
- Adequate software
- Other (Please Specify)

28. What input devices do you prefer when creating computer artwork? (Select all that apply)

- Mouse
- Light Pen
- Keyboard
- Touch Screen
- NA
- Other (Please Specify)

29. If your clients are using computers in art therapy, what input devices do they prefer? (Select all that apply)

- Mouse
- Light Pen
- Keyboard
- Touch Screen
- NA
- Other (Please Specify)

30. What computer software applications do you currently use for general use? (Select all that apply)

- MicrosoftWord
- Excel
- PowerPoint

- Publisher
- PhotoShop
- Illustrator
- NA
- Other (Please Specify)

31. What computer software applications do you use to create computerized art? (Select all that apply)

- MicrosoftWord
- Excel
- PowerPoint
- Publisher
- PhotoShop
- Illustrator
- Paint
- NA
- Other (Please Specify)

32. What computer software applications do your client's use for computerized art making? (Select all that apply)

- MicrosoftWord
- Excel
- PowerPoint
- PhotoShop
- Illustrator
- Paint
- NA
- Other (Please Specify)

33. In your professional opinion, what populations would benefit most from computerized art making? (Select all that apply)

- Schizophrenia
- Borderline Personality
- Bipolar
- Major Depression
- ADHD
- Oppositional Defiant
- Conduct Disorder
- Children
- Adolescents

- Adults
- Geriatric
- All
- None
- Other (Please Specify)

34. In your professional opinion, what populations would benefit the least from computerized art making? (Select all that apply)

- Schizophrenia
- Borderline Personality
- Bipolar
- Major Depression
- ADHD
- Oppositional Defiant
- Conduct Disorder
- Children
- Adolescents
- Adults
- Geriatric
- All
- None
- Other (Please Specify)

35. What population are you using computerized art making with? (Select all that apply)

- Schizophrenia
- Borderline Personality
- Bipolar
- Major Depression
- ADHD
- Oppositional Defiant
- Conduct Disorder
- Children
- Adolescents
- Adults
- Geriatric
- None
- Other (Please Specify)

36. What is your preferred medium to use in treatment? (Select all that apply)

- Pencil
- Paint
- Collage
- Cray Pas
- Chalk Pastels
- Crayon
- Markers
- 3-D
- Computer
- Don't have a preferred medium
- Determined by patient's needs
- Other (Please Specify)

37. What is your preferred medium to use as an artist? (Select all that apply)

- Pencil
- Paint
- Collage
- Cray Pas
- Chalk Pastels
- Crayon
- Markers
- 3-D
- Computer
- Don't have a preferred medium
- Other (Please Specify)

38. What are the most important qualities of traditional media?

39. What are the qualities of traditional media that you enjoy the least?

40. In your professional experience, what are the cognitive effects of using computerized art making?

41. In your professional experience, what are the emotional effects of using computerized art making?

42. In your professional experience, what are the interpersonal effects of using computerized art making?

43. Do you believe there could be potential issues relating to confidentiality when using a computer for art making? Why or why not?

44. Do you believe there are issues with art being stored electronically? (If yes, please explain)

No

Yes (Please Explain)

45. What are the benefits to using a computer for art therapy? (Select all that apply)

- Accessibility
- Easy to wheel in and out of patients' room
- Easy to clean and sanitize
- No sink required
- No mess to clean up
- Minimal supplies
- Easy storage
- Easy to recall artwork
- No benefit

Other (Please Specify)

46. At what point would you decide to offer the computer as a medium rather than traditional media? (Select all that apply)

After assessment

After trying other media

Patient resistant to using traditional media

In conjunction with traditional media

NA

Other (Please Specify)

47. In therapy with a patient how often would you utilize the computer in art therapy?

Frequently

Sometimes

Infrequently

Never

48. How many art therapists do you know who are using the computer as a medium in art therapy?

Many

A Few

None

49. Should computer art making be a part of the curriculum in graduate studies? (If no, skip to Question #50).

Yes

No

50. How much training in computer art therapy should be incorporated into graduate studies?

Required course

Elective

Part of experientials

Unsure

None

Other (Please Specify)

51. When using a computer in art therapy, briefly explain the therapeutic relationship during this process (if applicable).

52. How can computers be used in Art Therapy Treatment? Explain briefly.

Powered by
ZAPSurvey
Powered by ZapSurvey

Finished

Quit