

The Use of Information and Communication Technology (ICT) in Art Therapy and Art Counseling

Nikolaos Tsergas¹, Orfanos Ioannis², Stavros Fragkos³, Kalouri, Ourania⁴

¹Associate Professor, Democritus University of Thrace Department of Social Work, Komotini, Greece

²Counselor MA, PH.Dc. UNIWA

³Assistant Professor, Democritus University of Thrace Department of Social Work, Komotini, Greece

⁴Professor ASPETE, School of Pedagogical and Technological Education, Department of Education Athens, Greece

ABSTRACT: This article focusses on highlighting how new technologies are transforming art counseling and art therapies, such as art therapy, music therapy, etc. This is a literature review in this important scientific area. Initially, emphasis is placed on the broader application possibilities and advantages of using technology in therapeutic and counseling intervention, without neglecting the highlighting of the disadvantages and general reservations that arise. The utilisation of new technologies in counselling and art therapies is a powerful and promising additional dimension, opening up new horizons for therapists and clients, despite the challenges that require attention and significantly involve the issue of ethical responsibility.

KEYWORDS: Information and Communication Technology, Art Counselling, Art Therapies

INTRODUCTION

A few decades ago, software began to be developed to assist and support counseling and therapy interventions, focusing on more complex forms such as art therapy and music therapy. Other forms of treatment, such as phototherapy, video art, and film/movie creation, are also based on new technologies and the possibilities they offer.

Several forms of art therapy and/or therapies using art are evolving and changing the methodology of intervention with the help and use of new technologies; at the same time, by enriching technical capabilities, we can overcome the existing limitations of assistance and therapy (Collie & Čubranić, 2002; Awang, & Ahmad, 2024). The emergence of digital/electronic arts and their application have revealed a new range of possibilities for systematic interventions based on a variety of artistic activities in different forms, such as sound, music, image, video, and their applications (Chau, & Ho, 2023).

In addition, digital arts enable the creation of multicultural works and forms of expression, and through these various art forms, they help to achieve very positive therapeutic results (Orr, 2007, Hahna, Hadley, Miller, & Bonaventura, 2012). The use of ICT intensifies and optimizes therapeutic effects, encourages client participation in guidance and counseling, therapeutic intervention, and facilitates the diagnostic process.

The integration of new technologies into traditional guidance and counseling practices has created new challenges for therapists' personal development, the renewal of theoretical approaches, and the realistic expansion of treatment and counseling to a large number of beneficiaries and people who need it but who have or feel they have barriers to accessing the relevant services. However, new information and communication technologies raise questions about the impact of the framework and principles of art therapy, related to the ethics of counseling and therapy (Furman, 2013).

The use of computers in art therapy and counseling: prospects for development

The use of new technologies in guidance, counseling, and therapy began some time ago, with the aim of facilitating guidance and counseling interventions, therapeutic acts, and initial diagnostic assessment training (Newman, Consoli, & Taylor, 1997; Kalouri, Nikolaou, & Tsergas, 2009).

Diane Weinberg (1985) acknowledges that, initially, the use of computers provided considerable assistance in supporting patients who had suffered head trauma, stroke, and quadriplegia, and especially in their psychosocial rehabilitation.

The use of new technologies has been widespread in a variety of contexts in practice, such as education, lifelong learning, health (Weinberg, 2019) and also in the field of art. The first programs were developed in the context of arts education, which aims to increase learner participation in the creative learning process using special software. On this basis, similar efforts have been developed in the field of art therapy, guidance, and counseling using new technologies.

Counseling and therapeutic intervention in this case becomes quite complex (composite nature of art counseling), combining electronic and digital art methods with the artistic healing process in various forms of traditional art use. The complex nature of these counseling, guidance, and therapy interventions has provoked reactions that emphasize the contrasts between art and technology, creativity and the adoption of a mechanistic view (Proudfoot et al., 2003 ; Zubala, Kennell,& Hackett, 2021).

As Cathy Malchiodi (2000) notes, developments in the field of information technology and social media networking continue to influence art therapy. Similarly, a number of websites are developing, and digital materials, methods, and software are being applied not only in the field of online communication, but also in traditional workshops, creating modeling methods and modern electronic artistic materials for therapeutic communication, which is a highly creative form of communication (Kalouri, O. R., Tsergas, N., Botou, A., & Antonopoulou, A. (2021).

Artistic activities and the Digital Studio for counselors

Many counselors and therapists try to compare the benefits of art therapy with the use of new technologies and traditional therapy, while recognizing the advantages that art therapy provides. However, there are many reservations and doubts about the use and integration of technology in the field of counseling, guidance, and therapy.

This is why it is necessary to update and examine the skills and attitudes of clients towards new technologies before embarking on a process that involves complex activities and requires a degree of autonomy in terms of psychological functions and maturity that not all participants possess (Malchiodi, 2000 ; Zeevi, 2021).

The use of microcomputers makes it possible to save and maintain the various stages of artistic creation and access the relevant procedures associated with therapeutic intervention (Kolodyazhna, Mnozhynska, Chernyak, & Kyrychenko, 2025). In addition, clients have the opportunity to review the course of their treatment by observing the process of creating visual art, which has been easily preserved in digital form.

New technologies enable counselors/therapists to explore the obstacles encountered by clients/counselees in the process of their personal development, examine projective processes, and define a concrete image for the client/patient's current situation or progress. ICT also facilitates the monitoring of clinical intervention, guidance, and counseling, assists in investigating communication and the relationship with the counselor/therapist, facilitates research and documentation on the effectiveness of the intervention, provides feedback to the counselor/therapist, and helps redesign the intervention curriculum (Hartwich & Brandecker, 1997).

Digital technologies (digital imagery) affect the process and setting of counseling and therapy, influence communication, the therapeutic relationship, and therapeutic change in the client (Peterson et al., 2005). The use of new technologies offers to clients/patients the opportunity to cope with traumatic experiences (Vincelli, 1999), create images and representations that have therapeutic value (Carlbring & Andersson, 2006), facilitating the process of adjustment in a safe and secure environment, and feel satisfied by their participation in a creative process (McLeod, 1999 ; Srivastava, & Gule, 2025).

Deborah Canter (1989) has worked systematically on the use of ICT for art therapy with young people suffering from serious psychiatric disorders, such as antisocial behavior, depression, and abuse. The use of appropriate software enables the development of their creativity, visual expression, self-awareness, self-understanding, and essential skills. The counselor plays an important role as a mediator, helping young people to use digital programs. However, in clinical practice, the use of automated programs should be avoided, as they can pose a number of dangers for the treatment of problems in young people (Canter, 1987 and 1989) or adults, and can sometimes lead to the interruption of therapy.

Barbara Parker-Bell (2003) encouraged therapists to acquire relevant skills and familiarize themselves with various graphic programs, while Carol McLeod (1999) developed actions and interventions in schools, introducing expressive and creative activities with children and adolescents with problems.

In addition, Kate Collie and Davor Cubranic (1999) applied remote art therapy in a pilot effort to examine the possibilities of supporting clients/patients with cancer. These results also encourage the development of corresponding applications in the future (Collie, & Cubranic, 2002). However, the aim is not to replace the traditional framework of counseling, guidance, and therapy, but to enrich it with new possibilities and to broaden the population of potential clients/beneficiaries of the respective services (Tagliaferri, et al., 2022).

ICT and music therapy: research directions and applications

The development of electronic music, computer technology, and music theory has contributed to significant innovation and expansion in their application and practice in various contexts (Hunt & Kirk, 1997). The first applications of ICT in the field of music therapy were related to the context and application of therapeutic treatment. The results of these studies have promoted understanding of the music therapy process and the training of music therapists (Hasselbring & Duffus, 1981).

The relatively low cost of using new technologies has contributed to the spread of their application as a therapeutic strategy for describing and understanding therapeutic communication between the counselor/therapist and the client/patient (Hahna, Hadley, Miller, & Bonaventura, 2012).

The use of new technologies in music therapy has led to the creation of software that supports therapeutic interventions, guidance, and counseling for children, adolescents, and adults with emotional disorders (Krout, 1994; Jiao, 2025), or even for people with severe disabilities (Nagler, 1998) and complex neurological disorders (Paul & Ramsey, 1998; Leale, Vinciguerra, Di Stefano, Brighina, & Battaglia, 2025). The use of ICT facilitates the multiple processes of music therapy, through the production, listening to, or selection of a certain style of music (Hadley & Yancy, 2011; Lai-Tan, Philiastides, Kawsar, & Deligianni, 2023) as well as its recording and development.

These multiple computer applications can create a dynamic and highly flexible platform for the treatment of clients/patients (platform for therapy) (Yu, Shadd, Kleifges, Myers, & Pearl, 2013). They enable access to treatment through voice recognition, observation of clients'/patients' motor responses, or even detection of eye movements, etc., for people who have serious difficulties participating in therapy due to accidents or illnesses. In other words, ICT can push the boundaries of care in cases where counseling/therapy or even simple communication was difficult or impossible.

B.J. Crowe and R. Rio (2004), following empirical research, succeeded in recording the forms of ICT integration in music therapy practice, the most important of which are as follows:

1. Musical instruments adapted for music production using new technologies
2. Electronic musical instruments
3. The use of technology to assist people with disabilities in a medical context.
4. Technologies for recording music created during music therapy sessions.
5. Technology-based music/sound healing practices and applications.

New technologies in the field of music therapy make therapeutic treatment more flexible, allowing people with neurological disorders, autism, or other physical disabilities to access music therapy.

In conclusion, with regard to ICT and its use, two major trends can be identified: a) the creation of software to facilitate music production, and b) the development of programs for analyzing and codifying therapeutic intervention, with the aim of facilitating understanding and evaluation.

Photography, video, and film

In the field of art therapies, various audiovisual media, such as cameras, video, and filmmaking, have been used in therapeutic methodological approaches (Rubin, 1999: Iyendo, Uwajeh, Oseke, Dong, Adejumo, Umar, Apuke, & Gever, 2023).

Photography is a valuable tool for therapeutic interventions in the context of art therapy; in recent years, photography has been recognized as a specific form of complementary therapy known as photo art therapy (Krauss & Fryrear, 1983; Sabatino, 2023). Photography contributes to the direct expression of people who prefer to express themselves through the visual arts, and helps with self-understanding and the development of interpersonal relationships. Photography creates a special connection with reality, facilitates self-acceptance and adaptation to the real world, which is why it is often used in guidance, counseling, and therapy, especially for rehabilitation (Stevens & Spears, 2009).

Filmmaking is a process that enhances creativity and personal expression (Orr, 2006), improves self-image, and generally acts as a form of empowerment for those suffering from mental health issues; it is also an important research method (Drebing, Mamon, Calixte, Tuval-Mashiach, Patton, Scoglio, Girouard, Fukuda, Gao, & Penk, 2022; Hine, Gladstone, Reupert, O'Dea, Cuff, Yates, Hagström, McGaw, & Foster, 2023).

Video art has already begun to be incorporated as a methodological strategy in the practice and methodology of several treatments through art, particularly in art therapy. As a tool for creativity, it is linked to the production of visual images and creations during the artistic process (Rodríguez Pérez, 2013; Kalouri, Tsergas, Botou, & Antonopoulou, 2021). The integration of video art allows us to focus on the mental processes specific to the development of self-concept, to explore and understand the process of artistic production, while also being a source of new visual and artistic experiences, as well as a source of information and realization with reality (Parr, 2007; Drebing, Mamon, Calixte, Tuval-Mashiach, Patton, Scoglio, Girouard, Fukuda, Gao, & Penk, 2022). On the other hand, video art can deepen the visual experience through empowerment and realistic responses to problems.

Problems and prospects

The utilisation of new technologies by the scientific community, and particularly by the humanities, has consistently been a significant field with many facets. Potential initial reservations due to pre-existing risks in the early stages are called upon to be transformed into necessary changes that decisively impact the effectiveness of the interventions. In this light, new tools and electronic platforms (software, digital art, electronic programs like artificial intelligence) are expanding the possibilities for expression, communication, and therapeutic intervention. Conversely, identifying potential disadvantages, risks, and obstacles, as well as ethical dilemmas within the overall process, is considered essential. For example, the regulation of technology use, the lack of adequately trained scientists in the field, and the risk of limiting creativity are some particularly important issues.

Cheryl Dileo (2000) believes that the development of new technologies influences the music therapy process, creating innovative applications for the future. However, the use of ICT in the field of art therapy does not benefit clients/patients and beneficiaries, because there are currently no specialized intervention programs for specific groups (Magee, 2006). In addition, the use of ICT

inevitably creates problems, risks, or difficulties related to the risk of breach of confidentiality and privacy, as well as the risk that data and information may be dispersed online. Furthermore, reservations have been expressed about software; reserves that focus on the limits of personal expression and the individual's freedom to choose means or activities of artistic expression. This is why it is necessary to develop a body of ethical competencies to address ethical and professional dilemmas and issues in therapeutic practice (Dileo, 2000; Saeidnia, Fotami, Lund, & Ghiasi, 2024; Du Preez, Van Kessel, & Webb, 2024).

At the same time, however, the use of new technologies is driving creative treatment and enriching the code of ethics that governs the profession, although therapists may often be confronted with ethical problems or risks that they do not have the experience or knowledge to deal with (Martinez-Martin, & Kreitmair, 2018; Stoll, Müller, & Trachsel, 2020).

The development of artistic software can expand the range of intervention options and innovations in the therapeutic process (Evans, 2012). It also contributes to redefining the use of artistic and expressive means, strengthening the therapeutic alliance, and increasing client/patient participation in treatment and counseling (Thong, 2007).

CONCLUSION

Arts therapies are used to the treatment of people with serious disorders, but also for the rehabilitation and re-education of people with multiple disabilities, etc. The use of ICT in the practice of these forms of therapy and counseling has several advantages: It facilitates access for people who are unable to participate in counseling or group therapy, or even in a face-to-face therapeutic relationship.

The use of ICT in art therapy maximizes the therapeutic effect, reduces the cost and duration of treatment, while enriching and expanding its treatment possibilities. It contributes to the development of skills to deal with clients'/patients' personal problems and the development of self-help skills. The appropriate use of technology in combination with traditional artistic means does not limit facial expression, but rather promotes the deployment of the creative forces expressed by the face.

New technologies facilitate the process of personal development, enable continuity of care when it is impossible to move the client/patient, help to maintain, process, and use data from the therapeutic process, while supporting research and data processing that would otherwise have been difficult to maintain.

The use of ICT creates a favorable environment for connection and communication between different treatments with and through art and helps to combine them with other expressive and creative processes and activities for the total development of the personality through different artistic approaches.

Although the possibilities that the integration of ICT offers to treatments and counseling through art are very important, the rate and degree of their integration into practice is extremely low. In addition, the possibilities offered by the internet are little used in both the traditional healing process and remote intervention. Many therapists/counselors do not have the training and skills necessary to use ICT in the field of treatment and counseling, or are even phobic about technology and its use. Similar reactions are expressed even by clients/conselees.

In any case, the use of new technologies in the field of treatment and counseling cannot be interpreted as a substitute for the therapeutic relationship, but rather as part of the treatment and counseling process. There are many possibilities offered by the use of ICT or software in terms of both the design and implementation of prevention, treatment, and mental health promotion programs. To this end, the use of ICT helps maintain the quality of life of clients and develop relevant expertise in methodology and culture, which was previously lacking. It also creates the necessary conditions for the dissemination and use of other forms of therapy that are more creative in responding to the complex needs and problems of patients/conselees.

Finally, it increases the educational and training opportunities for therapists and counselors, supports the monitoring process and therapeutic procedures, and contributes to the promotion of research in the areas of intervention and counseling. The use of ICT, despite the ethical dilemmas and difficulties it poses, creates the necessary conditions for scientific development and research in the field of art therapy.

REFERENCES

- 1) Awang, N., & Ahmad, N. (2024). Innovative Digital Technologies in Art Therapy: A Systematic Review of Creative Process and Techniques. *International Journal of Innovation and Industrial Revolution*. <https://doi.org/10.35631/ijirev.618011>
- 2) 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. <https://doi.org/10.1080/07421656.1987.10758695>
- 3) 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.
- 4) Carlbring, P. & Andersson, G. (2006). Internet and psychological treatment. How well can they be combined? *Computers in Human Behavior*, 22, 545–553. <https://doi.org/10.1016/j.chb.2004.10.009>

- 5) Chau, R., & Ho, A. (2023). Understanding the Roles of Art and Design Technology in Art Therapy. In: Amic G. Ho (eds) Human Factors in Communication of Design. AHFE (2023) International Conference. AHFE Open Access, vol 90. AHFE International, USA.<http://doi.org/10.54941/ahfe1003710>
- 6) Collie, K. & Cubranic, D. (1999). An art therapy solution to a telehealth problem. *Art Therapy*, 16(4), 186–193.
- 7) Collie, K. & Čubranić, D. (2002). Computer-supported distance art therapy: A focus on traumatic illness. *Journal of Technology in Human Services*, 20(1-2), 155-171.
- 8) Crowe, B.J. & Rio, R.(2004). Implications of technology in music therapy practice and research for music therapy education: a review of literature. *Journal of Music Therapy*,41(4),282-320.
- 9) Drebing, C., Mamon, D., Calixte, R., Tuval-Mashiach, R., Patton, B., Scoglio, A., Girouard, C., Fukuda, S., Gao, W., & Penk, W. (2022). Pilot outcomes of a filmmaking intervention designed to enhance treatment entry and social reintegration of veterans.. *Psychological services*. <https://doi.org/10.1037/ser0000618>
- 10) Dileo, C. (2000). *Ethical thinking in music therapy*. Cherry Hill, NJ:Jeffrey Books.
- 11) Evans, S. (2012). Using computer technology in expressive arts therapy practice: A proposal for increased use. *Journal of Creativity in Mental Health*, 7(1), 49-63
- 12) Du Preez, E., Van Kessel, K., & Webb, X. (2024). A Systematic Review of the Ethical Considerations of Delivering Video-Based Therapy. *Psychotherapy and Counselling Journal of Australia*. <https://doi.org/10.59158/001c.115608>
- 13) Furman, L. R. (2013). *Ethics in Art Therapy: Challenging Topics for a Complex Modality*. London: Jessica Kingsley Publishers.
- 14) Hadley, S.& Yancy, G. (2011). *Therapeutic uses of rap and hip-hop*. New York, NY:Routledge
- 15) Hahna, N. D., Hadley, S., Miller, V. H., & Bonaventura, M. (2012). Music technology usage in music therapy: A survey of practice. *The Arts in Psychotherapy*, 39(5), 456-464.
- 16) Hartwitch, P. & Brandecker, R.(1997). Computer –Based Art Therapy with Inpatients: Acute and Chronic Schizophrenics and Borderline Cases. *The Arts in Psychotherapy*, 24, (4), 367-373
- 17) Hasselbring, T. S. & Duffus, N. A. (1981). Using microcomputer technology in music therapy for analyzing therapist and client behavior. *Journal of music therapy*, 18(4), 156-65.
- 18) Hine, R., Gladstone, B., Reupert, A., O'Dea, L., Cuff, R., Yates, S., Hagström, A., McGaw, V., & Foster, K. (2023). StigmaBeat: Collaborating With Rural Young People to Co-Design Films Aimed at Reducing Mental Health Stigma. *Qualitative Health Research*, 34, 491 - 506. <https://doi.org/10.1177/10497323231211454>
- 19) Hunt, A. & Kirk, R.(1997). Technology and music: incompatible subjects?. *British Journal of Music Education*,14 (02),151-161.
- 20) Iyendo, T., Uwajeh, P., Oseke, B., Dong, L., Adejumo, A., Umar, I., Apuke, O., & Gever, C. (2023). Effect of Audio-Visual-Based Art and Music Therapy in Reducing Adolescents Post Traumatic Stress Disorder.. *The Journal of adolescent health : official publication of the Society for Adolescent Medicine*. <https://doi.org/10.1016/j.jadohealth.2023.08.056>
- 21) Jiao, D. (2025). Advancing personalized digital therapeutics: integrating music therapy, brainwave entrainment methods, and AI-driven biofeedback. *Frontiers in Digital Health*, 7. <https://doi.org/10.3389/fdgth.2025.1552396>
- 22) Kalouri,O., Nikolaou,N. & Tsergas,N. (2009). L’Informatique comme Instrument de l’Orientation et du Conseil au Cas de la Formation Continue. *Analele Științifice ale Universităţii „Alexandru Ioan Cuza”-Secţ. Ştiinţele Educaţiei, XIII*,127-136.
- 23) Kalouri, O., Tsergas, N., Botou, A., & Antonopoulou, A. (2021). Video Art in Counselling and Therapy: Methods and Applications. *International Journal of Humanities and Social* 11(4), 39-46. doi:10.30845/ijhss.v11n4p6
- 24) Kalouri, O. R., Tsergas, N., Botou, A., & Antonopoulou, A. (2021). Art therapy and counseling for migrant and refugee children. *Journal of Liberal Arts and Humanities*, 2(6), 12-20.
- 25) Kolodyazhna, A., Mnozhynska, R., Chernyak, D., & Kyrychenko, R. (2025). Innovative Quantitative and Analytical Approaches to Art Therapy Utilizing Technology to Address Emotional Burnout. *Communications on Applied Nonlinear Analysis*. <https://doi.org/10.52783/cana.v32.3439>
- 26) Kraus, D. A. & Fryrear,J.L. (eds).(1983). *Phototherapy in Mental Health*. Springfield, Illinois: Charles C. Thomas.
- 27) Lai-Tan, N., Philastides, M., Kawsar, F., & Deligianni, F. (2023). Toward Personalized Music-Therapy: A Neurocomputational Modeling Perspective. *IEEE Pervasive Computing*, 22, 27-37. <https://doi.org/10.1109/MPRV.2023.3285087>
- 28) Krout, R. (1994). Integrating Technology. *Music Therapy Perspectives*, 12(2), 59-60.
- 29) Leale, I., Vinciguerra, C., Di Stefano, V., Brighina, F., & Battaglia, G. (2025). Effectiveness of Telecoaching and Music Therapy in Neurological Disorders: A Narrative Review and Proposal for a New Interventional Approach. *Healthcare*, 13. <https://doi.org/10.3390/healthcare13070826>
- 30) Magee, W. L. (2006). Electronic technologies in clinical music therapy: a survey of practice and attitudes. *Technology and Disability*, 18(3), 139-146.

- 31) Malchiodi, C. A. (2000). *Art therapy and computer technology: A virtual studio of possibilities*. London: Jessica Kingsley Publishers.
- 32) Martinez-Martin, N., & Kreitmair, K. (2018). Ethical Issues for Direct-to-Consumer Digital Psychotherapy Apps: Addressing Accountability, Data Protection, and Consent. *JMIR Mental Health*, 5. <https://doi.org/10.2196/mental.9423>
- 33) 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), 201-205.
- 34) Nagler, J. (1998). Digital Music Technology in Music Therapy Practice. In C. Tomaino (Ed.), *Clinical Applications of Music in Neurologic Rehabilitation*, (pp. 41-49). Saint Louis: MMB
- 35) Newman, M. G., Consoli, A., & Taylor, C. B. (1997). Computers in assessment and cognitive behavioral treatment of clinical disorders: anxiety as a case in point. *Behavior Therapy*, 28, 211–235
- 36) Orr, P. P. (2007). Digital Video Intervention with Special Populations: Looking for Inherent Qualities. *International Journal of Special Education*, 22(1), 118-124.
- 37) Orr, P. (2006). A documentary film project with first-year art therapy students. *The Arts in Psychotherapy*, 33, (4), 281-287
- 38) Parker-Bell, Barbara (2003). Embracing a Future with Computers and Art Therapy. *Journal of the American Art Therapy Association*, 22(3), 180-185.
- 39) Parr, H. (2007). Collaborative film-making as process, method and text in mental health research. *Cultural Geographies*, 14(1), 114-138.
- 40) Paul, S. & Ramsey, P. (1998). The Effects of Electronic Music-making as a Therapeutic Activity for Improving Upper Extremity Active Range of Motion. *Occupational Therapy International*, 5(3), 223-237.
- 41) Peterson, B., Stovall, K., Elkins, D., & Parker-Bell, B. (2005). Art Therapists and Computer Technology. *Journal of the American Art Therapy Association*, 22(3), 139-149.
- 42) Proudfoot, J., Swain, S., Widmer, S., Watkins, E., Goldberg, D., Marks, I., et al. (2003). The development and beta-test of a computer-therapy program for anxiety and depression: hurdles and lessons. *Computers in Human Behavior*, 19, 277–289.
- 43) Rodríguez Pérez, N. (2013). Videoarteterapia. El acto de grabar. Arteterapia. *Papeles de arteterapia y educación artística para la inclusión social*, 8, 83-103
- 44) Rubin, J. A. (1999). *Art therapy: An introduction*. Philadelphia: Brunner/Mazel.
- 45) Sabatino, A. (2023). Audiovisual Means to Therapeutic Ends. The Cinematic Dispositive within Medical Humanities. *Cinéma & Cie. Film and Media Studies Journal*. <https://doi.org/10.54103/2036-461x/17748>
- 46) Saeidnia, H., Fotami, S., Lund, B., & Ghiasi, N. (2024). Ethical Considerations in Artificial Intelligence Interventions for Mental Health and Well-Being: Ensuring Responsible Implementation and Impact. *Social Sciences*. <https://doi.org/10.3390/socsci13070381>
- 47) Stevens, R., & Spears, E. H. (2009). Incorporating photography as a therapeutic tool in counseling. *Journal of Creativity in Mental Health*, 4(1), 3-16.
- 48) Srivastava, K., & Gule, G. (2025). Enhancing Art Therapy With Artificial Intelligence For Trauma Recovery. *Cuestiones de Fisioterapia*. <https://doi.org/10.48047/xh4k4794>
- 49) Stoll, J., Müller, J., & Trachsel, M. (2020). Ethical Issues in Online Psychotherapy: A Narrative Review. *Frontiers in Psychiatry*, 10. <https://doi.org/10.3389/fpsy.2019.00993>
- 50) Tagliaferri, L., Dinapoli, L., Casà, C., Colloca, G. F., Marazzi, F., Cornacchione, P., ... & Gambacorta, M. A. (2022). Art and digital technologies to support resilience during the oncological journey: The Art4ART project. *Technical Innovations & Patient Support in Radiation Oncology*, 24, 101-106.
- 51) Thong, S.A. (2007). Redefining the Tools of Art Therapy. *Art Therapy: Journal of the American Art Therapy Association*, 24(2), 52-58
- 52) Vincelli, F. (1999). From Imagination to Virtual Reality: The Future of Clinical Psychology. *Cyber Psychology & Behavior*, 2(3), 241-248
- 53) Weinberg, D. J. (1985). The Potential of Rehabilitative Computer Art Therapy for the Quadriplegic, Cerebral Vascular Accident and Brain Trauma Patient. *Art Therapy*, 2(2), 66-72.
- 54) Weinberg, N. (2019). Computers in Health Care. *Computers in the Information Society*. <https://doi.org/10.4324/9780429033124-8>
- 55) Yu, Y., Shadd, W. M., Kleifges, K. A., Myers, L. A., & Pearl, P. L. (2013). Musical Instrument Modifications for Individuals With Neurodevelopmental Disabilities. *Music and Medicine*, 5(3), 145-149.
- 56) Zeevi, L. (2021). Making Art Therapy Virtual: Integrating Virtual Reality Into Art Therapy With Adolescents. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.584943>
- 57) Zubala, A., Kennell, N., & Hackett, S. (2021). Art Therapy in the Digital World: An Integrative Review of Current Practice and Future Directions. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.600070>