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Virtual Art Therapy for Adolescence Mental Health Education: Systematic Literature Review and Future Perspectives

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Abstract

This study aims to conduct a systemic literature review on the application of virtual art therapy as an effort to maintain adolescent mental health and examine the use of mental health services in the future by utilizing technology. The research was conducted using a systematic literature review on scientific articles. Seven key studies were selected as the primary sources to describe the application of virtual art therapy as an effort to maintain adolescent mental health. Selected articles were analyzed by data extraction. The findings indicate the application of virtual art therapy for adolescents in maintaining mental health as a complex process by utilizing the deepest human feelings that is hard to be expressed by words. Virtual art therapy was done by mediating what the client expresses through art created in the virtual world. The aesthetics art made was not the main focus of the therapeutic process, but the way the art can be realized as an expression of feelings. In future research, there needs to be an effort to develop and test the success of virtual art therapy models in creating mental health and conduct empirical surveys to assess the suitability of virtual art therapy models among adolescents.

Keywords: adolescence well-being, digital mental health services, educational environments, learning assignments, mental health education

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1. Introduction

Mental health is a fundamental aspect of human well-being, to effectively cope with stress. Maintaining good mental health can be a foundation of human well-being and play an important role in encouraging positive development of young people (Organization, 2021). Adolescents transitioning into adulthood will face many common mental health challenges (Clarke et al., 2020). Addressing these issues is particularly important, as unresolved mental health problems can hinder an individual's ability to accumulate resources and may serve as a significant determinant of future poverty and adversity (Clayborne et al., 2019).

Mental health disorders affect adolescents globally, both in developed and developing countries. In the United States, more than one in ten adolescents experience depression that interferes with their daily functioning at school, work, home, and social life. Recent data shows that 16.39% of US adolescents (ages 12-17) reported at least one major depressive episode (MDE) in the past year, with 11.5% (over 2.7 million adolescents)

experiencing severe major depression. The situation extends beyond adolescents, as 4.84% of US adults (over 12.1 million people) report serious suicidal thoughts, with notably higher rates (11%) among multiracial individuals (Reinert et al., 2022).

Similarly concerning trends are observed in developing countries. In Indonesia, a study of adolescents aged 10-17 revealed that one in three (34.9%), equivalent to approximately 15.5 million Indonesian adolescents, experience mental health challenges. These include anxiety (26.7%), concentration/hyperactivity problems (10.6%), depression (5.3%), behavioral problems (2.4%), and post-traumatic stress (1.8%). More critically, one in twenty adolescents (5.5%), or 2.45 million Indonesian adolescents, are diagnosed with mental disorders, including anxiety disorders (3.7%), major depressive disorder (1.0%), behavior disorders (0.9%), ADHD (0.5%), and PTSD (0.5%) (Wahdi et al., 2022). These various mental health challenges can manifest in different forms and may lead to self-harm behaviors (Cole et al., 2018).

Increasing attention is being given to promotion, prevention, and early intervention in response to growing concerns among both developing and developed countries regarding adolescent mental health and well-being (Solmi et al., 2022). The fact that a single treatment (curative) is insufficient to address mental problems in adolescents and promote mental health and well-being at the population level is becoming more widely acknowledged (Ormel et al., 2019). Consequently, the paradigm of mental health has shifted towards prioritizing preventive measures to reduce mental disorders (Ayuningtyas & Rayhani, 2018).

School counselors recognize the prevalence of adolescent mental health issues; however, the main problems identified in this study include inadequate infrastructure, limited collaboration with students' families, and a lack of teacher capacity-building programs to address these issues effectively (Hartanto et al., 2023). Mental health issues must be addressed as early as possible given their significant impact on adolescents. Early intervention to prevent mental health problems has an impact on profits, including interventions that are initially carried out after a mental health problem (curative) to before (preventive) the impact the on adolescents and families are reduced, and reduce costs of mental disorder treatment (Bariyyah & Latifah, 2015; Catalano et al., 2012; Ormel et al., 2019)

The treatment of adolescent mental health continues to rely primarily on conventional face-to-face counseling models without the integration of technology. Based on the results of a systematic literature review, there are very consistent findings in the relation to the prevention of depression through interventions that have been carried out. However, these interventions have generally demonstrated minimal impact on post-intervention depression (Scott, 2015). Universal interventions also shown to reduce symptoms of anxiety, but still in small impact measures (Shelemy et al., 2020). meta-analysis of universal and targeted prevention programs for depression and anxiety found that such interventions have a moderate effect on depression and a substantial effect on anxiety (Feiss et al., 2019). Therefore, alternative counseling model is needed to be a solution in dealing with mental health problems in adolescents.

Virtual art therapy offers significant benefits in mental health treatment, including improved accessibility through virtual reality (VR) technology which can be utilized remotely (Hacmun et al., 2018; Haeyen et al., 2021), particularly during the COVID-19 pandemic (Snyder, 2021) and for marginalized populations (Feen-Calligan et al., 2023).

VR technology provides a more immersive therapeutic experience with three-dimensional artistic expression capabilities (Kaimal et al., 2020) and customizable therapeutic environments (Li & Yip, 2023). Additionally, it enhances client engagement, particularly among technology-savvy adolescents (Zeevi, 2021; Zubala et al., 2021). However, challenges persist including technological limitations and ethical considerations about privacy and data security (Snyder, 2021). Further research is necessary to evaluate its long-term efficacy across diverse clinical settings (De Giorgi et al., 2023).

Art-based interventions serve as a viable alternative for promoting adolescent mental health. The integration of arts-based services in mental health development is becoming increasingly prevalent (Fancourt & Finn, 2019; Oren et al., 2019). There is a well-established belief that creative activities can promote the development of positive mental health as the art process of activity encourage individuals to express themselves freely and remove barriers in communicating and expressing emotional experiences that difficult to speak (Devlin, 2010). Emotional experiences play a fundamental role in shaping mental health, contributing to resilience and psychological strength (Junça-Silva, 2022).

Creative arts can elicit reciprocal efforts, enhance empathic connections and communication that support mental health recovery (Junça-Silva, 2022). The use of art therapy focuses on cultivating a flexible, and adaptive sense of self, enabling individuals to navigate life's challenges with rational and resilient cognitive and emotional skills (Buday, 2013). The use of art therapy based on research results is proven effective in mental health development.

The development of mental health is not solely measured by the creation of artwork, but is instead centered on fostering a collaborative environment that supports each other (Saavedra et al., 2017). These concerning statistics highlight the critical importance of focusing mental health research and interventions on adolescents, particularly considering their unique position as digital natives who have grown up immersed in technology. As digital natives (Adorjan & Ricciardelli, 2021), adolescents are more likely to engage with and benefit from digital-based mental health interventions, making them a key target population for innovative approaches to mental health support.

The recent implementation of art therapy for mental health has increasingly incorporated telecommunication tools (Spivak et al., 2020). The use of online media began to be widely used in preventing mental health problems. Online practices for wider access are coming into use. Virtual art therapy presents a promising alternative as it enables individuals to receive support regardless of geographical barriers or financial constraints (Kaimal et al., 2020).

The distinction between conventional and technology-based art therapy can be observed through several key aspects. Conventional art therapy, rooted in longstanding practices, relies on direct interaction with physical art media to facilitate emotional expression and healing, focusing on the creative process rather than the final product (Ralston, 2018; Adhantoro et al., 2025). In contrast, technology-based art therapy integrates digital tools and virtual platforms, offering broader accessibility and convenience for digital native generations. However, concerns remain regarding the potential loss of tactile engagement, which is considered a crucial component of the therapeutic process (Gonchar, 2023; Zubala et al., 2021). Both approaches offer distinct advantages and challenges, with digital therapy providing innovation and wider reach, while conventional therapy

maintains the essential value of physical interaction with artistic materials.

Global efforts to improve adolescent mental health have advanced significantly, particularly in low-and middle-income countries (LMICs). Research indicates that while barriers such as poverty, stigma, and limited treatment availability persist (Osborn et al., 2020; Zhou et al., 2020), strategic approaches using WHO's 4-S framework have helped develop evidence-based policies (Fisher & De Mello, 2011). Effective interventions have combined mental health literacy building (Clauss-Ehlers et al., 2020), interpersonal skill development, and culturally-appropriate programming through local partnerships (Osborn et al., 2020; Baingana et al., 2015). Despite challenges related to inter-sectoral coordination and budget constraints (Roy et al., 2019), these interventions have demonstrated significant economic benefits, yielding high returns on investment and low cost per disability-adjusted life year (DALY) (Stelmach et al., 2022).

Adolescence is a transformative phase characterized by unique challenges and emotional fluctuations. While this period fosters self-discovery, it also presents heightened vulnerabilities to mental health disorders, including anxiety, depression, and stress. The World Health Organization (2021) estimates that 10-20% of adolescents globally experience mental health conditions; however, the majority do not receive adequate care. Barriers such as limited access to services, societal stigma, and logistical constraints frequently hinder adolescents from obtaining the necessary support.

As technology becomes an integral part of daily life, new opportunities have emerged to address gaps in mental health care. Adolescents, often referred to as "digital natives" (Prensky, 2005), are particularly adept at using digital tools, making them ideal candidates for technology-driven interventions. One promising approach is virtual art therapy, which combines the therapeutic benefits of creative expression with the accessibility of digital platforms. Unlike traditional therapy, virtual art therapy allows adolescents to explore their emotions and express themselves creatively in a format they are familiar with online environment.

This research carries critical significance in addressing contemporary mental health challenges. It responds to the growing demand for accessible adolescent mental health interventions while leveraging innovative technological solutions that resonate with modern youth preferences. The study's findings could significantly influence the development of scalable, effective mental health interventions and contribute valuable insights to the expanding field of digital mental health services. This is particularly relevant in the post-pandemic era, where remote healthcare delivery has become increasingly essential

This study examines the potential of virtual art therapy to address the mental health needs of adolescents. Specifically, it aims to answer the following research questions:

- How effective is virtual art therapy in reducing anxiety and depression among adolescents compared to traditional face-to-face therapy?
- What are the unique advantages and limitations of delivering art therapy virtually?
- How can virtual art therapy be adapted to better serve adolescents from diverse backgrounds?

Recent research highlight the efficacy of art therapy to help young people process emotions, foster resilience, and build coping skills (Blomdahl et al., 2013). The integration of virtual reality (VR) into therapeutic practices takes this a step further, enabling interactive

and engaging experiences that are accessible from virtually anywhere (Shamri Zeevi, 2021; Haeyen et al., 2021). VR-based therapy has been shown to not only support emotional regulation but also enhance social functioning and cognitive engagement, particularly among adolescents experiencing anxiety and social difficulties.

By examining existing literature and exploring future possibilities, this study aims to highlight how virtual art therapy can provide a meaningful and scalable solution to the increasing mental health challenges faced by adolescents.

2. Method

The research employed a qualitative approach with systematic review design to synthesize and analyze existing evidence on virtual art therapy for adolescent mental health. A qualitative approach was selected as it enables an in-depth exploration and interpretation of complex interventions, therapeutic processes, and outcomes that may not be fully captured through quantitative measures alone. The methodology adhered to the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) to ensure a transparent and replicable review process (Page et al., 2021).

Relevant articles were retrieved from established academic databases, including Scopus, and Google Scholar. The search was conducted using a combination of keywords such as "virtual art therapy," "adolescent mental health," "digital therapeutic tools," and "online counseling." The inclusion criteria were as follows:

- Articles published in peer-reviewed journals between 2015 and 2023.
- Studies focusing on adolescents aged 12–18.
- Research that explicitly explored virtual or technology-assisted art therapy interventions.
- Articles written in English.

Studies were excluded if they lacked a clear focus on adolescent mental health, did not incorporate virtual art therapy components, or were not published in reputable academic sources. Initially, a total of 43 articles were identified. Following a relevance screening and the removal of duplicates, 15 articles underwent a full-text review, of which 7 met the inclusion criteria.

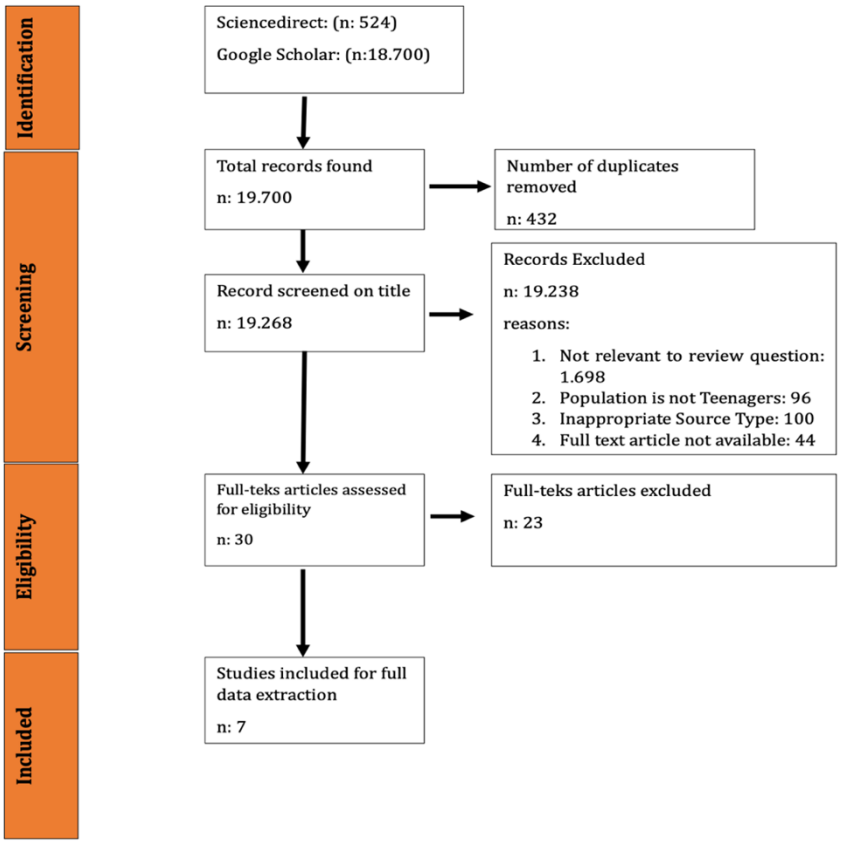

Figure 1. PRISMA Diagram

The selected articles underwent a comprehensive data extraction process to identify recurring themes, methodologies, tools, platforms, and outcomes. Most studies utilized secure online platforms, such as Zoom or Microsoft Teams, to conduct therapy sessions, with some integrating collaborative tools like Jamboard that allowed participants to create and share artwork in real time. Additionally, two studies employed virtual reality (VR) environments, providing immersive therapeutic experiences where adolescents could create art in 3D virtual spaces. Any disagreements in the selection process were documented and resolved through consensus meetings between the researchers. This selection process resulted in 7 articles that met all inclusion criteria and quality standards.

Mental health outcomes were evaluated through both quantitative and qualitative measures. Quantitative studies utilized validated instruments, such as the Beck Depression Inventory (BDI), the Generalized Anxiety Disorder-7 (GAD-7), and the State-Trait Anxiety Inventory (STAI). On the other hand, qualitative studies collected feedback from participants and therapists to evaluate engagement levels, emotional expression, and the perceived effectiveness of virtual therapy sessions.

The duration of interventionsvaried across studies, ranging from 4-week programs to 12-week sessions. Most interventions consisted of weekly sessions lasting between 60 and 90 minutes, ensuring consistent opportunities for therapeutic engagement and progress monitoring.

3. Result and Discussion

Seven articles were identified to address the research question regarding the implementation of art therapy and virtual art

therapy in maintaining adolescent mental health? The presentation of the summary of the article in the form of the author's name, research objectives, research subjects and the implementation of interventions is presented in table 1.

Table 1. Article Summary

Author Name and Year	Research Objectives	Research Subjects	Implementation of Interventions
C. Petruta-Maria (Petruta-Maria, 2015)	Systematizing methods of art therapy and music therapy	Children with special health problems	Music therapy utilizes various aspects of music, including spiritual, physical, emotional, mental, social, and aesthetic effects, to support the learning achievement of children with disabilities. Approaches used include therapeutic play, therapeutic drama, and therapeutic art.
N. Y. Hidajaturrokh-mah, Y. Nurmansyah, dan A. Yudhana (Hi-dajaturrokhmah et al., 2022)	Discovering the effect of drawing art therapy on reducing anxiety of SMK Nurul Falah students in online learning assignments during the covid-19 pandemic in Geger village, Mangaran sub-district, Situbondo, East Java	42 XI grade students who face anxiety	Visual processing of the resulting images can stimulate the nerves to become more relaxed, calm emotions, or reduce anxiety experienced by students. This therapy process is carried out through six stages. The first stage is Scribble Painting and Color Spectrum, where students are introduced to the art of painting and coloring techniques, including an introduction to drawing tools and their functions, principles of painting, drawing techniques, and systematic coloring methods. The second stage provides an opportunity for students to reflect on their personality, habits, and introspection in order to improve strengths and weaknesses through drawing media, while sharing stories about their learning outcomes. In the third stage, students are asked to describe their relationships with people around them, including family, society, and friends. The fourth stage includes a description of the student's living conditions in the context of the environment, such as in educational environments, rural, urban, or Islamic boarding schools. Furthermore, the fifth stage invites students to tell about their daily experiences at school, subjects they like and dislike along with their desires, relationships with teachers and peers, and factors that hinder the learning process. Finally, in the sixth stage, students identify the goals they want to achieve, the obstacles they face, and the focus that needs to be improved to achieve these goals.
M. A. Cortina dan M. Fazel (Cortina & Fa-zel, 2015)	Discovering the effect of *The Art Room* intervention on students'	60 students of clinical psychiatric disorders	The Art Room is held for one to two sessions each week during a 10-week semester. This activity is carried out in groups with a ratio of two therapists to

Author Name and Year	Research Objectives	Research Subjects	Implementation of Interventions
	emotional and behavioral problems		accompany eight students. This room has three main areas, namely a sofa area to start and end the session, a dining area where students share with each other, and a large table equipped with various art supplies. The session begins with a discussion in the sofa area to discuss the project that aims to create an atmosphere of openness, both in discussing the challenges and successes experienced by students. After that, the topic session begins, covering a particular story, object, or artwork designed to stimulate creativity. These projects are designed so that students can explore their creativity while feeling successful through the process of creating.
F. Nielsen, S. Isobel, dan J. Starling (Nielsen et al., 2019)	Describe the use of responsive art therapy in inpatient child and adolescent mental health units, including its admission seen through satisfaction questionnaires..	Adolescent	Art therapy plays a vital role in the assessment, diagnosis, treatment planning and care delivery of patients. When working with adolescents in a hospital setting, art therapists conduct group and individual sessions that typically last three to six months. During these sessions, much of the time is spent creating non-verbal artwork. At the end of the session, the therapist often offers the adolescent the opportunity to talk about the artwork they have created. If the adolescent chooses not to discuss it, this is seen as an indication that the discussion may not have had therapeutic value. The primary goal of art therapy is to create accessible sessions and help adolescents develop confidence in managing their non-verbal emotions. Through the process of creating artwork, adolescents are encouraged to explore their thoughts and feelings in a safe, judgment-free environment. Their artwork provides a medium for processing and processing emotions that were previously difficult to recognize. The resulting images are also recorded and analysed with ethical approval from the health district ethics committee. In the long term, regular discussion of the artwork aims to help adolescents gain deeper insight into their emotions and experiences, while supporting the primary goal of art therapy to support the process of understanding and self-management.
L. Shamri Zeevi (Shamri Zeevi, 2021)	Application of VR (Virtual Reality) with traditional art therapy services for adolescents who	Case studies on a boy, aged 16, and a girl, aged 13, who	There are three primary components to each VR art therapy session. In the first, the client and the therapist have a conversation to decide on the medium the client wishes to employ. In the second part, the client creates his or her 3D world as the therapist

Author Name and Year	Research Objectives	Research Subjects	Implementation of Interventions
	experience anxiety and social difficulties.	suffered from anxiety and social difficulties.	follows them around a virtual environment that is shown on a 2D monitor. The therapy mediates the content that shows on the virtual media once the client releases the HMD (Head Mounted Display) in the last section. However, it is evident that additional research is required to determine the validity and reliability of VR-based assessments, and as the field develops, these concerns about resource accessibility and ethics demand consideration, investigation, and attention.
I. H. Bell, J. Nicholas, M. Alvarez-Jimenez, A. Thompson, dan L. Valmaggia (Bell et al., 2020)	Provides a summary of the advantages of using VR for mental health assessment, focusing on improving the ecological validity of controlled environments, improving personalization and engagement, and capturing automated and real-time data in real-world contexts.	Scientific Articles	VR can be utilized as one of mental health examinations by analyzing three primary areas: social functioning, cognition, and symptoms. Automatic data like eye gazing, proximity to virtual reality avatars, and recorded responses to simulated social settings can be used to evaluate social functions. Memory and executive function are the main focus of cognition, and they are usually evaluated through attention exercises and maze navigation. For instance, reactions to VR provided tasks, measured attention, and response inhibition in children and adolescents with ADHD compared to controls. Finally, symptoms like paranoid thoughts have also been elicited and evaluated in virtual reality settings.
S. Haeyen, N. Jans, M. Glas, dan J. Kolijn (Haeyen et al., 2021)	Find out how art and psychomotor therapists become more skilled in offering art and psychomotor therapy online and how they can methodically incorporate VR Health Experiences (virtual art and psychomotor therapy spaces) in therapy.	Arts and psychomotor therapists working in mental health care in Netherlands	In cooperation with parties focused on technical advancements and their effects, the Virtual Therapy Space was created and set up as a simple multiplayer setting that is furnished for art therapy. Participants in therapy can move in the same digital realm and hear and see one another. As if they were gazing at each other in the therapy room, the therapist intervenes in real time throughout the session and works based on the experience by wearing virtual reality glasses or watching through a computer screen. This makes them feel more present and in touch with one another. In response to feedback from the sprint session, changes can be made and problems resolved throughout the project.

A review of eight research articles highlights a significant evolution from conventional art therapy to virtual art therapy in adolescent mental health treatment. Traditional art therapy has demonstrated effective in addressing various mental health issues, from anxiety to clinical psychiatric disorders, through various approaches such as drawing therapy and structured programs like "The Art Room". Advances in technology

advancement have introduced innovations through the integration of Virtual Reality (VR) into art therapy, enabling the creation of interactive virtual therapy spaces and automated data collection for more precise assessment. The application of VR in art therapy primarily focuses on three key areas: social functioning, cognition, and symptoms, with therapy sessions designed in three segments allowing clients to create in 3D virtual environment while maintaining therapeutic interaction. While VR-based art therapy shows considerable promise in enhancing the accessibility and effectiveness of mental health interventions for adolescents, existing literature underscores the need for further research to validate its efficacy and to address challenges related to resource accessibility and ethical considerations as the field continues to evolve (Murthado et al., 2021).

The analysis provided key insights into the application of virtual art therapy. Adolescents participating in these interventions demonstrated improved emotional regulation, reduced symptoms of anxiety and depression, and enhanced self-expression through virtual platforms. While most studies focused on group therapy formats, individual sessions were also found to be effective, particularly for participants experiencing more severe symptoms.

Emerging studies emphasize the potential of virtual art therapy in engaging adolescents through innovative, technology-driven approaches. For instance, Shamri Zeevi (2021) demonstrates how virtual reality enhances therapeutic experiences by immersing participants in interactive environments, while Haeyen et al. (2021) explore the role of VR Health Experiences in fostering emotional regulation and self-expression. Additionally, research by González-Zamar & Abad-Segura (2020) underscores the adaptability of virtual platforms for therapeutic and educational purposes, making them ideal for adolescents who are digital natives. Despite these advancements, further research is required to address gaps in long-term efficacy and accessibility, particularly for underserved populations.

In cooperation with experts in technical advancements and their applications, the Virtual Therapy Space was created and set up as a simple multiplayer setting that is furnished for art therapy. Within this digital space, participants in therapy can move in the same digital realm and hear and see one another, simulating the experience of a physical therapy room. As if they were gazing at each other in the therapy room, the therapist intervenes in real time throughout the session and works based on the experience by wearing virtual reality glasses or watching through a computer screen. This immersive setting enhances the sense of presence and connection among participants. In response to feedback from the sprint session, changes can be made and problems resolved throughout the project. Recognizing the benefits of each technique, it is believed that using music in the art therapy process provides reinforcement (Bunt & Stige, 2014). Art therapy, whether structured or improvisational, integrates fine arts such as painting, sculpture, and sketching, with or without musical accompaniment (Fotima, 2020). Music serves as apowerful medium to help people connect with their own emotions and sentiments in order to recognize, manage, and be conscious of them, as well as to give them meaning and purpose. Additionally, music helps improve self-expression, identify different emotions, improve tolerance for frustration, and calm mood (Petruta-Maria, 2015). Music plays a significant role in virtual art therapy by influencing emotions and aesthetics through various techniques like music improvisation, receptive listening, songwriting, lyric discussion, imagination, relaxation, and musical performance (Strohal, 2017).

Although research on the integration of music with virtual reality (VR) in art therapy for adolescents is limited, techniques such as painting with music, blind drawing, finger painting, and collage-making can be integrated into VR environments to create more immersive and interactive therapeutic experiences (Strohal, 2017).

Art therapy serves as an effective tool to address anxiety issues Encourage teenagers to discuss all of the major issues they will encounter at employment. The creative process involved in art-making allows individuals to express and process their emotions, bringing underlying issues to the surface (Sajnani et al., 2020). Engaging in artistic activities that requires imagination and creativity fosters a sense of inner tranquility, making it appropriate for someone experiencing psychological distress (Gladding, 2021). Given the prevalence of mental health challenges, art therapy provides a place where this approach can be actively sought (Hidajaturrokhmah, 2022).

Children's reading comprehension, verbal and creative thinking, self-perception of mastery, and intrinsic motivation are enhanced by art, helping young people to resolve emotional conflicts by giving them a place to explore themselves and develop social interactions with others. Additionally, art therapy fosters emotional expression, resilience, and social interaction (Blomdahl et al., 2013). Art therapy can also be structured to provide young people a sense of accomplishment while they explore their creativity (Cortina & Fazel, 2015).

According to Havsteen-Franklin (2014) and Havsteen-Franklin & Altami-rano (2015), responsive art therapy serves as an additional method of putting art therapy into practice. A psychodynamic technique known as "responsive art therapy" involves an art therapist (who may possess specialized training, such as a master's degree in art therapy) creating artwork as an interpretive relational response to the artwork of a teenager who has to stay in a mental health facility (Syahmani et al., 2021). Patients are thought to benefit from responsive art therapy, which allows them to safely express suppressed feelings and serves as a bridge to spoken treatment. Additionally, visual imagery might be useful in diagnosing conditions or evaluating the effectiveness of treatment. Teenagers, who are often hesitant to engage in traditional verbal therapy, generally perceive responsive art therapy as helpful (Nielsen et al., 2019).

Adolescents may perceive technological media as an engaging and promising alternative to traditional therapeutic approaches. Children and teenagers today navigate their lives in two primary spaces at the same time: the digital world and the ordinary interpersonal world (Chandra, 2016). Teenagers frequently believe that using technology in therapy can result in a comfortable and enjoyable conversation. Virtual art therapy's therapeutic method is predicated on the idea that therapists, teenagers, and virtual artworks form a rich triangle interaction with the art and VR worlds. Clients can engage in visual creative experiences that stimulate their imagination and enable symbolic and nonverbal expression of unconscious content when virtual art resources are available in treatment rooms (Case & Dalley, 2014; Schaverien, 2000). VR and virtual therapy rooms have different roles in the context of therapy. VR generates immersive experiences that enhance various forms of therapy, while virtual therapy rooms provide a platform for remote therapeutic interactions (Levac & Galvin, 2013).

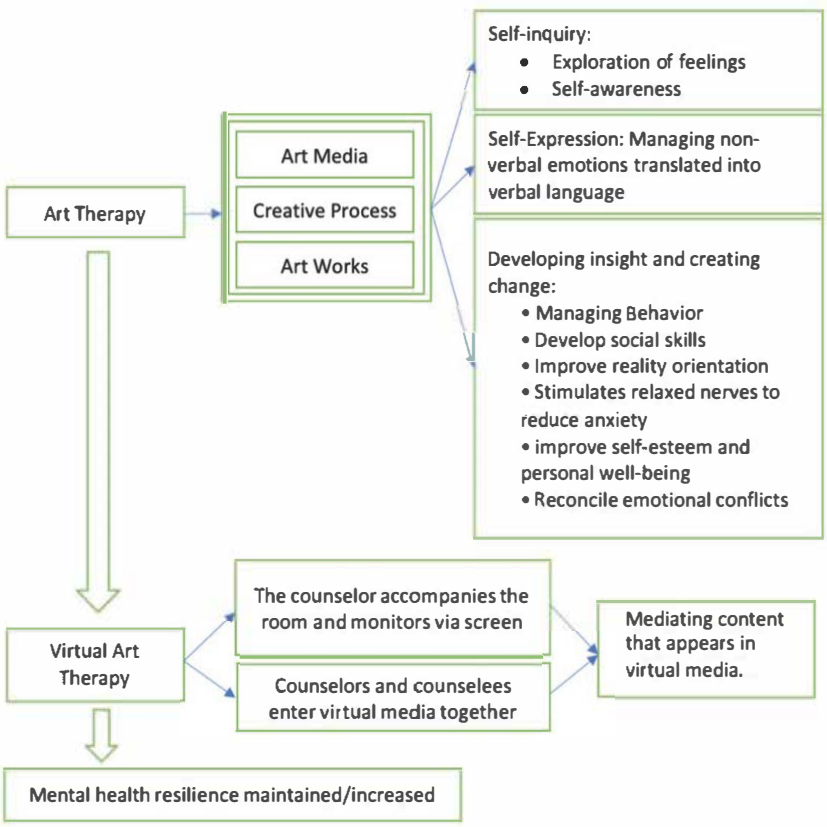

Figure 2. Virtual Art Therapy for Adolescence Mental Health

The findings indicate that the art therapy including art media, creative processes and works of art in the form of drawing, painting, coloring, sculpting and other creative activities (such as making home decorations, wall clocks, flower arrangements and so on) can also be effectively implemented through virtual media. The use of technology is considered suitable to be used to provide interventions in adolescent mental health. Often referred to as "digital natives" (Prensky, 2005), adolescents have grown up in the digital age and regard technology as an integral part of their daily lives, making virtual platforms an accessible and effective medium for therapeutic engagement.

The implementation of virtual art therapy necessitates a two-way interaction between counselors and counselee. According to the literature, the implementation of virtual art therapy can be started with discussions between counselors and counselee in establishing good relationships and make agreements. Furthermore, in the virtual space there are two ways that counselors could do, accompanying the counselee in the room and monitor through the screen or together with the counselee entering the virtual world through VR (Kaimal et al., 2020). The creative process of making art is facilitated through VR (González-Zamar & Abad-Segura, 2020), allowing counselees to select colors and can start drawing to investigate themselves or express themselves. Through the images created by the counselee, the counselor facilitates to mediate the content that appears in the virtual media based on the counselee thinks and feels. The therapy process concludes with an evaluation to ensure continuity of care.

It is anticipated that the integration of technology will enhance the therapy process, making it more comfortable and engaging for participants (Emmelkamp & Meyerbröker, 2021). The use of VR in counseling provides

an immersive experience, allowing individuals to enter a virtual environment with the freedom to express themselves creatively (Pirker & Dengel, 2021; Seabrook et al., 2020). VR has a strong influence on human perception and cognition by eliciting a sense of presence and illusion so that counsellors can respond to virtual stimuli (Emmelkamp & Meyerbröker, 2021; Marucci et al., 2021). Additionally, VR facilitates natural interaction between humans and the virtual environment (Djawantianros, 2021).

The use of avatars in counseling are another advancement in the use of technology in the therapeutic process. J. Leff first developed and described avatar therapy, which involves of a three-way dialogue between the patient, therapist, and a digital simulation tool known as a "avatar" (Craig, 2019). According to Cooper et al. (2019), avatars serve as virtual representations of individuals, facilitating interaction and communication. With exposure to disembodied sound representations and real-time guidance on "hot" cognitive, emotional, and relational processes (Herman, 2015; Marzal et al., 2022), AVATAR therapy provides a potent therapeutic setting (O'Brien et al., 2021). While avatars cannot replace all aspects of traditional counseling, avatar therapy has demonstrated potential as an effective tool for promoting mental health (Franco et al., 2021; Garety et al., 2021; Holt, n.d.).

This literature review has several limitations. First, the primary data used in the study came from articles published in scientific journals from various countries. This limitation may result in non-empirical research concepts that do not fully capture the current conditions in a specific country. Second, the research produced a pattern of virtual art therapy implementation from various countries, but it did not yield a specific virtual art therapy model tailored to enhance adolescent mental health. Third, the reviewed articles revealed some gaps, including inconsistent reporting of specific tools used and a lack of long-term follow-up to assess the sustainability of outcomes. These limitations highlight the need for future research to standardize virtual art therapy practices and evaluate their long-term impact.

The discussion highlights several key points and practical applications of virtual art therapy. The findings align with existing literature, including studies by Shamri Zeevi (2021) and Haeyen et al. (2021), which emphasize the efficacy of virtual art therapy in enhancing emotional regulation and self-expression.

Practical applications of virtual art therapy can be implemented in both schools and Community settings. For example, schools can collaborate with local therapists to introduce virtual art therapy programs, while community centers can organize online workshops to expand access to this intervention. The successful integration of virtual art therapy in schools and mental health centers requires careful consideration of both technological implementation and professional training. Virtual Reality (VR) technology can enhance therapeutic engagement by providing immersive environments for self-expression and creativity, making it particularly appealing to younger clients (Zeevi, 2021). Additionally, dedicated virtual spaces can improve accessibility and encourage creative exploration through platforms such as the VR Health Experience (Haeyen et al., 2021). Additionally, effective implementation requires comprehensive training for therapists, including studio-based education and continuous professional development to ensure competency with digital tools and therapeutic techniques (Cahn, 2000).

Enhancing accessibility and scalability necessitates the use of low-cost platforms and asynchronous tools to reach underserved

populations. Collaborations with NGOs and government programs could further support these efforts by providing necessary resources, such as devices and internet subsidies. Additionally, ethical considerations must also be prioritized, including ensuring data privacy, obtaining informed consent, and fostering a strong therapeutic rapport when delivering virtual therapy settings.

4. Conclusion

Mental health issues require significant attention, particularly during adolescence. Given that adolescents have grown up closely integrated with technology, their unique characteristics must be considered when designing interventions. Virtual art therapy provides a promising perspective as it considered interesting to use for adolescents. The use of art therapy is not just playing with material, but also a complex process to taps into people's deepest feelings and connects people with parts of the brain that words cannot reach. This enables individuals to be able to express themselves in different ways. Since many mental health disorders originate during adolescence, innovation or efforts are needed to reduce the likelihood of these issues developing.

5. References

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