



Research Article

Filmmaking and video as therapeutic tools: Case studies on autism spectrum disorder

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ABSTRACT

Previous researches on Autism spectrum disorder (ASD) show the difficulty in supporting and taking care of these individuals, especially during adolescence. In our study a psychotherapist and a director involve two couples of ASD participants both adolescents in a therapeutic filmmaking and cinematherapy project, building their personal short film of which are both directors and main characters of the story, through a "peer buddy" approach. Unlike other researches which used video as an imitative tool, this study aims to engage the participants in an audiovisual creative process as a means to express and represent themselves through a shared experience. Our results, evaluated by an observative method, suggest the importance of collaborative process and peer relationship in ASD individuals in order to improve social and communication skills and, also, underline the effect of the video and filmmaking as a projection of own psychological narrative process, with significant impact on autonomy, awareness and self-confidence. Indeed, both couples of participants report an improvement of their social and relational skills stimulated by the use of video as a therapeutic tool. This study may be the first step of evaluation on the effect of the audio-visual tools integrated in a clinic treatment, in order to promote intervention on well-being of patients with autism spectrum disorder.

Introduction

Autism spectrum disorder diagnosis (ASD) recently received greater attention from European and non-EU countries' (Centers for Disease Control in the United States, 2020; European Agency for Special Needs & Inclusive Education, 2018; World Health Organization, 2019). The increased demand for healthcare services for youths with ASD and the ensuing difficulty for their families to access these services leads to provide effective interventions and treatments, identifying some indicators important to their social integration (van Kessel et al., 2019). In particular, ASD is comprised by difficulties in social interaction, restricted interests and repetitive behaviors, as identified by the criteria of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013). Individuals with ASD could report difficulty in developing peer relationships and sharing experiences (Bolis & Schilbach, 2018; d'Arc, Devaine, & Daunizeau, 2020) and could show anomalies in eye contact, mutual attention and less interest in others

(Margoni & Surian, 2016). Also, ASD is characterized by restricted interests, inflexible routine, and low tolerance to changes or variations (Kodak & Bergmann, 2020; Kuzminskaite, Begeer, Hoekstra, & Grove, 2020). These indicators are exhibited in different degrees based on the functioning of the person. For instance, low-functioning ASD (LFASD- Level 2–3) involves isolation, passive participation in social interaction, and a lack of spontaneity (Mehling & Tassé, 2016) while high-functioning ASD (HFASD- Level 1) comprises more interest in social interaction and some difficulty in starting or continuing a dialogue with others (Uljarević et al., 2020).

ASD may become more difficult to evaluate during adolescence (Picci & Scherf, 2015; Steinhausen, Mohr Jensen, & Lauritsen, 2016). Indeed, this phase of development is characterized by psychological, physical, and behavioral changes that often involve feelings of confusion and recurring emotional changing (Petrina, Carter, Stephenson, & Sweller, 2016; Seltzer et al., 2003). Adolescents aim at establishing their own identities to construct their own autonomy through a progressive

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comparison with peers and progressive distancing from family. For this reason, a person may be more oppositional as well as aggressive in obtaining what he or she wants. In this frame, it could be difficult to establish what kind of behavior is indicative as symptom of autism spectrum disorder and which is characteristic of the developmental phase of adolescence instead (Dovgan & Mazurek, 2019; Duncan & Bishop, 2013). The main data shows that it is more common to see social skills increasing during late adolescence rather than before (Chowdhury, Benson, & Hillier, 2010; Woodman, Smith, Greenberg, & Mailick, 2015). These improvements involve different aspects of the development, such as an increasing of socio-communication skills and a reducing in repetitive behaviors and stereotyped interests, as reported by parents of ASD adolescents (Hassan et al., 2018). Ratto and Mesibov (2015) report that 93 % of ASD adolescents shows an improvement in language and communication skills over their lifetime, as well as an increment in nonverbal communication, such as the congruent use of gestures and facial expressions in social responsiveness and conversation. Also, ASD adolescents show higher ability in emotion processing and recognition, as well as in establishing friendships and intimate relationships (Golan, Baron-Cohen, & Hill, 2006). As shown by the outcomes of interventions based on peer relationships, positive interactions with peers increase social skills and well-being in ASD adolescents (Laugeson, Frankel, Gantman, Dillon, & Mogil, 2011). Through specific training, typical adolescents help their ASD peers in daily interactions (Platos & Wojaczek, 2018). The most common form of peer-mediated approach is peer tutoring, a system that promotes mutual learning and teaching (Carter, Sisco, Chung, & Stanton-Chapman, 2010). In addition, this approach has an effect on the family system, reducing parental stress and the perception of one's own autonomy (Chang & Locke, 2016). Also, having positive peer relationships is associated with a higher quality of life (Helseth & Misvaer, 2010). Some studies proved that a "peer buddy" approach between adolescents with ASD and neurotypical adolescents can be effective at mitigating the social isolation that often characterized ASD (Laugeson & Frankel, 2011; Parsons, Cordier, Munro, & Joosten, 2019; Rodríguez-Medina, Martín-Antón, Carbonero, & Ovejero, 2016); while there is relatively little known about the relationship between ASD adolescents and the possible effects of a treatment based on this interaction.

The process of self-change: arts-based therapeutic approach

Our proposal is based on the principles of art-therapies, which aim to promote the participation and creativity of patients, underlying their main strengths in order for patients to achieve a positive change and to discover useful resources (American Music Therapy Association, 2015; Corbett et al., 2016; D'Amico & Lalonde, 2017; Leavy, 2015; Rickson, Castelino, Molyneux, Ridley, & Upjohn-Beatson, 2016). The art-based therapy is focused on patients' artistic expression (Malchiodi, 2011; Vick, 2012) and on theartmaking process that involves them through the use of different techniques and materials (musical melody, theater acting, paint, videoclip, dance) (LaGasse, 2017; Schweizer, Spreen, & Knorth, 2017). Ludic and expressive activities make art therapy particularly suitable in the support and treatment of young individuals with neurodevelopmental disorders, especially in improving social and emotional skills of individuals with ASD (our specific sample), as shown in well-documented data (Schweizer, Knorth, & Spreen, 2014; Schweizer, Knorth, van Yperen, & Spreen, 2019; Van Lith, Stallings, & Harris, 2017). Theater therapy is useful for ASD individuals, finding its basis in acting as an interactive process that involves various aspects of social interaction: observing others' expressions and gestures, interpreting social situations, and appropriately expressing feelings through verbal and nonverbal communication (Corbett et al., 2011; Ioannou, Key, Muscatello, Klemencic, & Corbett, 2020). Acting exercises, role-playing and improvisation, could foster skills in empathy and perceiving others' points of view, thereby increasing self-awareness and social mutuality (Corbett, Qualls, Valencia, Fecteau, & Swain, 2014, 2016). Theatre is a

therapeutic tool for individuals with ASD and includes specific components (Silverman, 2006): the *performance*, which involves a series of actions in collaboration with others aimed at achieving a goal; the *projection*, a mechanism which leads individuals to express themselves using for example puppets, written stories, role plays, musical melody; the *narrative*, a process which associates autobiographical contents of the person with the narrated story, addressing real difficulties indirectly and collaborating with other characters; and the *improvisation*, a way to experiment creativity, and to promote flexibility (Naniwadekar, Ravi, & Sreevidya, 2016). Our study integrates these principles - used in theater therapy - together with the use of audiovisual tools, in order to amplify the potential of acting, basing on the model of participatory action research (Blaisdell, Arnott, Wall, & Robinson, 2019; Coussens et al., 2020; Ghanouni, Jarus, Zwicker, & Lucyshyn, 2020; Knutz & Markusen, 2020).

Video-modeling, cinematherapy and filmtherapy: audiovisual tools and educational process

The introduction of digital devices in children education and in supporting individuals with disabilities and neurodevelopmental disorder, such as ASD, was noted (Benjamin-Thomas et al., 2019). Video Modeling (VM), for instance, is an evidence-based treatment procedure that has been widely used to teach a variety of skills to individuals with autism spectrum disorder (Hein et al., 2019; McCoy, Holloway, Healy, Rispoli, & Neely, 2016). VM consists of children watching videotapes showing positive examples of adults, peers, or themselves (video self-modeling -VSM) engaging in the behavior being taught (Cardon, Wangsgard, & Dobson, 2019; Dueñas, Plavnick, & Bak, 2019). In VM and VSM, learning by imitation is mediated by the video and aims to improve socio-relational and daily skills (Hong et al., 2016; Kanfush & Jaffe, 2019). VM and VSM are effective intervention strategies for implementing social-communication skills, and behavioral functioning in youths with ASD (Ashori & Jalil-Abkenar, 2019; Charlop, Lang, & Rispoli, 2018; Hochhauser, Weiss, & Gal, 2018; Mitsch, Riggleman, & Buchter, 2020).

Another example of educational and therapeutic method video-based is cinematherapy, which is often considered as synonymous of filmtherapy (Kangas, Cook, & Rule, 2017; Rubtcova & Pavenkov, 2017). Following Francesco Casetti (2015) distinction between *Delivery* and *Setting* modes of relocated cinematic vision, we propose to differentiate these two methods according to the role and position of the patient. Cinematherapy therefore consists in the replication of the visual and environmental characteristics of cinema, making the patients feel like they are inside a movie theater (Sabatino & Saladino, 2018). On the contrary, filmtherapy refers to the use of the movie itself and its plot, adopting a repertoire of characters and situations with which the patients can identify (ibid; Mytnik-Daniluk, 2019; Renata et al., 2020). Cinematherapy and filmtherapy have been widely used to reduce dysfunctional behaviors in youths and adults with psychological disease, (Eğeci & Gençöz, 2017; Gregerson, 2010) disabilities and behavioral problems (Kangas et al., 2017; Lorusso & Venturini, 2020; Smieszek, 2019).

In conclusion, the process of learning activated during the filmtherapy is based on the mechanisms of projection and identification with a character or within a specific situation; while the cinematherapy emphasizes these mechanisms by the strong experience of watching a film in a movie theatre.

Videotherapy and therapeutic filmmaking: audiovisual tools and creative process

The same mechanisms of cinematherapy are activated by videotherapy which uses video recording techniques, such as the video-confrontation, in order to show patients the image of him/herself to reduce negative symptoms connected with psychological distress, and to

implement positive behaviors in children and adults (Brazzale, Maddalena, Cozzi, & Brazzale, 2018; Kanne et al., 2011). Videotherapy, which may be called documentary, underlines the importance of the biographical and autobiographical contents (Jones, Adams, & Ellis, 2013), showing the relationships between the person and his/her environment (Depree, 2016; Peterson, 2017; Taylor, 2016). The Italian project "Memofilm" is characterized by the active involvement of people with real-life experience (Feyles, 2017; Grosso, 2013) and is exemplary in this regard.

Therapeutic filmmaking is another well-known audiovisual technique (Cohen et al., 2015; Jakubowska & Michalowska, 2017), based on the model of participatory action research (Mitchell, De Lange, & Moletsane, 2017; Shaw, 2012; Sabatino & Saladino, 2018) and often defined as a group-based activity which encourages participants to creatively use video equipment to create and produce their own videos (Gubrium & Harper, 2016; High, Singh, Petheram, & Nemes, 2012; Mitchell, Milne, & De Lange, 2012). Therapeutic filmmaking facilitates a self-narrative process: patients are guided toward self-expression as main characters and filmmakers of their own audiovisual narratives (Mitchell, 2011; Johnson et al., 2015; Bertram, 2017; Lebow, 2012; Sabatino, 2019). The final product becomes a powerful tool for improving self-awareness and increasing emotional well-being in patients (Anderst, 2017; Benjamin-Thomas et al., 2019). Because of the accessibility of digital filmmaking, creative video production in therapy has already been proven to be effective, especially with children, people with disabilities and psychological disease (LePage & Courey, 2011; Moraldi, 2015; Pereira, Muench, & Lawton, 2017). Audiovisual tools and arts-based therapeutic approaches stimulate self-expression, active participation and imagination, becoming a healing agent, of identity exploration, emotional expression and personal growth (Manders & Chilton, 2013). These characteristics make them suitable as interventions for children with neurodevelopmental disorders, dysfunctional behaviors and disabilities (Khuo & Yusoff, 2016).

Our proposal is based on the possible integration of the above mentioned techniques in a therapeutic process, emphasizing the following key points: a) stimulating participation and creativity through a narrative process in which patients - working in pairs - are producer and consumer of their creation (therapeutic filmmaking); b) observing oneself in a series of videos which represent one's story, including autobiographical and fantasy narratives (video-confrontation); c) experimenting movie-theater as a setting which provides environmental features of a viewer experience (cinematherapy).

Objectives

The main goal of this study is to evaluate some psychological and behavioral changes in the daily life of adolescents with ASD after participating in the research-intervention protocol proposed. The evaluation process is based on an observation of behavior (the observation procedure is explained in detail in the method section) and concerns the main ASD indicators, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM 5): mutual interaction, socio-emotional reciprocity, play and behavior. In detail, the researchers evaluate the difference between baseline and follow-up in the following specific objectives: (a) *Self-awareness*, the promotion of a higher awareness about participants' identities, emphasizing resources and strengths, supporting spontaneous decisions; (b) *Reciprocity and emotional and social skills*, the development of a higher reciprocity in peer relationships, facilitating collaboration; (c) *Flexibility*, the promotion of a higher tolerance to unexpected occurrences, discovering passions and hobbies.

Study design

Consistent with the literature cited above, our study explores the use of audiovisual tools (therapeutic filmmaking, cinematherapy and video-confrontation) as forms of intervention for ASD adolescents with the aim

to involve them in creating and developing a video-production project. Participants are required to work in pairs, becoming protagonists and directors of their own audiovisual self-narratives. This procedure is focused on the creative process itself, exploiting participants' real-life context, in order to improve their relational and communicative skills. The therapeutic team is composed of a psychotherapist and a director, who constantly videotapes all the sessions.

Sample

The sample consists of four Italian adolescents, aged between 10 and 13 years old, two females and two males affected by autism spectrum disorder (ASD) HFASD-Level 1, recruited at the San Giovanni di Dio e Ruggi d'Aragona Hospital in Salerno, in the Clinical Unit of Therapeutic Filmmaking and Videotherapy for Neurodevelopmental and Autism Spectrum Disorder (Italy). The family system is indirectly included in the therapeutic process, as logistic and emotional support for the participants. Our study, however, focuses more on ASD adolescents' social and relational skills through the narrative procedure and the use of the audiovisual tools.

Procedures

This study was comprehensive of three phases, as follows: Informed consent and family system assessment (one session); therapeutic filmmaking (six sessions); cinematherapy and video-confrontation (two sessions). After the end of the study two follow-up were planned: one within a month, another within three months.

1. *Informed consent and family system assessment*: During the first phase (one session per family), the researchers had a first assessment with the family and explained the study to obtain informed consent for the use of audio-video recording. During the first session an interview was conducted, one with the parents, alone (60 min) and one with the child (30 min). The parents' interview explored their perception of the effects of ASD on their own parenting skills and on their child's social abilities; the child's interview evaluated his/her self-perception and communicative and interactive skills.

2. *Therapeutic filmmaking*: During the second phase (six sessions), children were involved in a session together, without their parents, who maintained a support and logistic role throughout the therapy process. During the first session, the psychotherapist explained the communication rules to the participants, focusing on three main points: listen to each other, work together, and use cameras as an instrument to tell a story. Communication rules can be shown using role-play, slideshow presentations, body exercises, drawing or writings and several possible methods, which stimulate interaction and creativity. This session was aimed to establish a first interaction among the participants and to make them practice the rules and become familiar with videocameras. During the same session, the director showed methods for constructing a film with a storyboard. This procedure consisted of creating together the plot of the movie according to four main categories: characters, actions, desires, and fears. The storyboard can be drawn with colored markers, gradually filling in the various categories, or be written according to specific keywords, which represent each category, or by using photos depicting the participants while mimicking emotions for each category. The psychotherapist and the director maintained a role of support in these processes, which recall some expressive and technical procedures of art therapy. Participants were therefore solicited to explore their desires and fears by identifying with the main character of the film, acquiring greater self-awareness through this process. The storyboard became an artistic and self-expressive way to narrate one's own story in a form of narrative psychotherapy and therapeutic filmmaking. Moreover, the participants, as directors of their own film, have chosen scenes and plot starting from their own personal interests. They also learned to consider their partner's perspective, playing alternately the actor's and director's roles, acquiring more flexibility in relationships and

developing greater responsibility and autonomy. After completing the storyboard, the participants identified their locations and organized subsequent meetings to shoot the scenes. Three sessions of this phase were dedicated to shooting the scenes of the film illustrated in the storyboard, and the participants served as actors and directors, applying the rules of communication defined during the entire process of the first session. The other two sessions were dedicated to editing the film; in this stage, the participants, guided by the psychotherapist and the director, chosen the most significant scenes to realize the final version of their film, sharing opinions and reviewing the footage together. The editing sessions are a fundamental part of the therapeutic filmmaking process and emphasize social and communicative skills to improve peer relationships and establish a new value of friendship, symbolized by the creation of the film and emphasized by the final phase of cinematherapy and video-confrontation.

3. Cinematherapy and video-confrontation: The last phase (two sessions) consisted of cinematherapy and video-confrontation. During cinematherapy, the participants and their families watched the final version of the film at the movie theater. After viewing their own movie, they commented on it with the psychotherapist and the director. During the video-confrontation, each participant watched the film at the psychotherapist's office and commented on it to bring out new thoughts and feelings about the viewed contents. At the end of the session, the participants received their film on DVD, with the only requirement to see it as many times as they want. Throughout this process, the film becomes proof of the conclusion of the path as well as a starting point for new opportunities for growth.

Follow-up: The first follow-up took place one month after the end of the cinematherapy and video-confrontation phase and consisted of interviews, one with the parents alone (60 min) and one with the children (30 min). During the follow-up, the psychotherapist collected data to compare them with the previous results and evaluated any risk of relapse.

The second follow-up took place three months later and followed the same procedure.

Measures

The study design is based on the observation of selected behaviors at the baseline and in the follow-up sessions. Based on the specific domains, reported by the DSM 5, and the main social communication impairments common in ASD, we have chosen three categories: mutual interaction, social-emotional reciprocity, play and behavior; and selected some indicators for each one, as shown in Table 1.

For each indicator, the psychotherapist observes three parameters: presence, congruence and spontaneity (American Psychiatric Association, 2013) and assigns numerical scores following a method used in cognitive and systemic psychotherapies (De Shazer & Berg, 1992; Ruini & Fava, 2009), working with a four-point scale (0–3): the psychotherapist assigns a value of 0 when the participants do not demonstrate the indicator even if solicited and stimulated, and the grade of congruence is

not available; a value of 1 when participants show the indicator only if solicited and stimulated, and the grade of congruence is not available; a value of 2 when the indicator is present at a minimum level spontaneously but is incongruent to the context or to the interaction; a value of 3 when the indicator is present at more than a minimum level spontaneously and is congruent to the context. The sum of the scores for the individual indicators gives a total score for each of the three categories. Furthermore, the psychotherapist uses the notes derived from the observations collected during the construction of the storyboards to integrate them in the evaluation of the indicators.

Ethics

Informed consent and informed choice for patients

The aims, the methods and the possible risks and benefits of the research and of the video-based therapy have been explained to candidates in verbal and written forms. Researchers have conveyed informed consent for adult participants and for children, signed by their parents. The therapist obtained the informed consents of the participants in order to publish the photographic and video materials collected during the project in online and paper journals, national and local TV networks, websites and social networks according the ethical conduct of the Art Therapy Credentials Board (Art Therapy Credentials Board, Inc. ATCB, 2019). The participants are aware of the difficulties in removing permanently the materials used and published if consent is later revoke. By signing consent for themselves and their children, participants release the researchers from any liability regarding incorrect use of their photos and personal data, by third-party.

Indeed, the ease with which very private materials can be made public is a real concern for professionals who work with video. To address this issue, the therapist has reviewed every step and phase of the procedure with the participants, explaining in depth the whole process, as well as confidentiality and privacy matters during the informed consent stage, during the video-making phase and in the ongoing process. The therapist has made sure that participants are informed throughout the duration of the project in order to decide to continue or withdraw from the process. The therapist has therefore ensured that participants could make an informed choice about their participation, understanding the following core points: a) they are participating in a creative video process, which is art therapy, not autonomous artistic or ludic activity; b) this approach is based on an experimental method, even though it is related to established therapeutic approaches; c) the films or videos they produce might be used and shown outside therapeutic settings for scientific, educational and informative purposes, as well as the recordings of the sessions in which they appear. The informed consent was redacted according to the Italian Deontological Code of Psychologists of the National Council of the Order of Psychologists 2020 (www.psy.it); the Canadian Psychological Association (2001) and the American Psychological Association's Code of Ethics (2010) and was based on the following Italian legislative references: Law 633/1941 Article 96 (Protection of copyright and other rights related); Civil Code Article 10 (Abuse of the image of others); Civil Code Article 23 (Consent for personal data processing); Legislative Decree n. 196/03 Article 13 and EU Regulation 2016/679 (GDPR) Article 13 (Information on the processing of personal data).

Confidentiality and privacy

According to the ethical standards related to the Italian Deontological Code of Psychologists of the National Council of the Order of Psychologists 2020 (www.psy.it) and the Art Therapy Credentials Board-Code of Ethics, Conduct, and Disciplinary Procedures (Art Therapy Credentials Board, Inc. ATCB, 2019), the collected materials (questionnaires, video and audio recordings, photos, electronic data stored on computers, videotapes and hard disk) are kept confidential

Table 1
Autism Spectrum Disorder' Categories and Indicators.

ASD Categories		
Mutual interaction	Social-emotional reciprocity	Play and behavior
Eye gaze	Face processing and decoding	Make-believe and imagination dialogue or play
Facial expression direct to others	Communication on own emotions	Distress at small changes
Spontaneous joint attention	Comments about others' emotions	
Interaction through physical contact		

through the use of password-protected computers and locked storage cabinets in a secure location – the workplace in which sessions take place – under the responsibility of the principal investigator of the study. The materials can be shared among the team involved and only for research and therapeutic purposes. The team provides participants with reasonable access to their records for therapeutic use. The video and photographic materials can be also included in future research and in public presentations, only with a written authorization of participants or participant's parents. The authorization must specifically mention that the participant's identity may be revealed, as reported in the General Ethical Standards (Part I, Section 1) and Standards of Conduct (Part I, Section 2) of the [ATCB \(2019\)](#).

Ethic board and committee

The study was approved by the Institutional Review Board of the University of Cassino and Southern Lazio (Italy) and by the Ethic Committee of the University of Salerno (Italy).

Case report

In respect to the privacy, the name of the participants of the study reported below are pseudonymous.

Case 1. Giacomo is an adolescent aged 13 years who attends high school; he has difficulties in nonverbal communication, such as eye gaze, gesture, voice tone, facial expressions and in establishing spontaneous relationships with others. Sometimes he shows a low capacity in processing and responding congruently to other emotions. Giacomo's routine is complex since his weekly schedule, beyond school, is full of different learning and recreational activities: a swimming course, horse riding, percussion lessons, and homework. During the evening he likes playing on the computer, that is one of his favorite activities, along with cooking. Giacomo has a closer relationship with his mother who leaves him free to go out with friends and have experiences without displaying her anxiety. Giacomo's father would like to be able to understand his son and to have more strategies to support him in daily life: he works as a computer programmer and Giacomo often helps him. Both parents are open-minded and showed strong compliance throughout the project, supporting Giacomo through all its phases.

During the interview, Giacomo appeared not to be very reciprocal and was very laconic and uninterested in communicating with the researchers. Giacomo's attitude changed only when the researchers involved him in a role-playing game in which he was asked to interview the director. He was invited to switch roles and stand behind the camera. The director instructed Giacomo on how to use the videocamera, and Giacomo conducted the interview himself, asking the director questions

and changing perspective and shots ([Fig. 1](#)).

During the role-play, Giacomo asked the director personal questions about her daily life, passions, while at the same time being asked about his own hobbies and friends. Giacomo described his passion for cooking and technology. Over the course of the process, he began to show interest not only in technology but also in what he saw through the camera, becoming the main character and director of his interview.

During the second phase, Giacomo met his partner Pietro, and the psychotherapist explained to them the main rules of communication based on mutual listening and cooperation and the exclusive use of the videocamera for storytelling purpose. Giacomo proved to be attentive and focused on listening while the therapist explained the rules. He maintained a composed position, interrupting sometimes to ask information about the videocamera. His interest changed when the director asked the participants to draw the storyboard, illustrating their own story with colored markers according to the main themes: characters, actions, desires, and fears ([Fig. 2](#)).

Giacomo proved himself capable of perceiving that Pietro was two years younger than him since he helped him hold the camera when he showed difficulty with it. The participants created the storyboard following the director's instructions and decided together to be the main characters of their own film, describing their daily lives and desires. Giacomo's part of the story consisted of him studying to become a professional cook: his real wish was communicated and shared during the storyboard drawing and was translated in images showing his dreams coming true. He also decided to add to the script scenes in which he played musical instruments, showing a strong passion for music. Giacomo seemed to feel more comfortable in describing himself through drawing his story than during the interview. The storyboard became his way to express himself without fear, a storyline in which he could insert creative and biographical content and show spontaneous concern



Fig. 2. The team works on storyboarding the movie.



Fig. 1. First interview. Shifting role.

toward his partner. (Table 2).

During the therapeutic filmmaking, Giacomo was more active in mutual interaction and emotional reciprocity, playing and participating during the entire shooting phase (Fig. 3).

He also started to engage physically through eye contact, paying attention to his partner and communicating his own emotions. In addition, his helper role—and his perception of reciprocity—increased: when Pietro, as the main character, needed to get dressed to go out but had difficulty putting on his belt, Giacomo unexpectedly stopped to shooting the scene to demonstrate to him how to do this. Giacomo’s behavior became increasingly spontaneous over time, showing good stress management when facing new situations as well as good decision-making and problem-solving skills. He proved to be flexible, switching between roles as director and actor, making directorial choices with respect to content and giving feedback to his partner when he was the actor. Moreover, despite his affection for technological tools, he used the videocamera to tell the story, showing less fixation on technology and more interest on sharing emotions. Giacomo also became more self-aware in his choices and desires and more reciprocal in interaction, as the main character of his routine, capable of taking care of himself in daily life: for instance, taking a shower and brushing his teeth. In the editing sessions Giacomo revised the material and selected the scenes, sharing his point of view and listening to Pietro.

During the last phase, he watched the final product in the movie theatre in the presence of his and Pietro’s families. Giacomo sat next to Pietro and commented on the scenes with him, sharing feelings of satisfaction and surprise in seeing each other on screen and showing spontaneous and congruent joint attention and nonverbal communication. During the video-confrontation, Giacomo watched the film again, this time alone in the psychotherapist’s office, describing his positive feelings particularly toward the cooking scene in a real restaurant. After the movie screening, he received his film on DVD and greeted the researchers and Pietro by kissing and hugging them.

During the first follow-up session, Giacomo was active and spontaneous in the conversation. He showed a strong interest in communication, touched the face of the psychotherapist to gain his attention, and used gestures to show something important to him. During the last follow-up session, Giacomo told the team about his choice of school, a professional cooking institute, and recalled with happiness the scene of the movie in which he cooked in a real restaurant with a chef. He talked about the last three months, showing calmness and paying less attention to the camera. Table 3 reports scores of the indicators selected for the study, showing the progressive improvement in Giacomo’s behavior during the therapeutic process.

Case 2. Pietro is an adolescent aged 11 years. He attends middle school, shows difficulties in reciprocity and relationships with others and is interested in maps and Google Navigator. Sometimes Pietro does not perceive the socially appropriate distances between people or the difference among formal and informal behaviors, kissing not only relatives and parents but also strangers. In a social situation with other people, he tries to get his mother’s attention and monopolizes the situation. Pietro has good skills in establishing spontaneous relationships with others and in processing and recognizing to others’ emotions. For instance, he always understands when his parents have an argument or are upset and tries to mediate the conflict. Also, Pietro feels the need to be autonomous and often fights about this with his mother, but at the same time, he looks for her protection in social situations as well as at home. In fact, Pietro has been sleeping in his mother’s bed since he was five years old. The co-sleeping produces an entangled relationship between Pietro and his mother, excluding the role of the father. Furthermore, Pietro is afraid of being abandoned by the people he loves and tends to acquiesce to the decisions of others to avoid disappointing them.

During the interview, Pietro showed low interest to the questions. During the role-play, in changing roles and positions from interviewee to

Table 2
Giacomo’s storyboard.

Giacomo’s Storyboard			
Scene	Before the project	After the project	Objective
Giacomo gets up in the morning, takes a shower and chooses clothes.	Giacomo does not choose his clothes and does not want to shower; his mother forces him and often has an argument with his son.	Giacomo, at the end of the project, feels like the protagonist of his life. Indeed, he decides how to dress, takes long showers, and pretends to decide about his person, as parents reported in the two follow-ups. For instance, during a school-organized travel, Giacomo prepared his luggage and chose his dress without help, and every day he took care of his personal hygiene unsolicited.	Managing his daily life, making decisions about clothes, and taking care of his personal hygiene to be the protagonist of his life-
Giacomo goes out of his apartment, crossing the street correctly, and walking to his workplace, a restaurant.	Giacomo does not recognize danger and often crosses the street without paying attention. Also, while he walks, he does not use eye gaze to figure out the situation and prefers to look down.	During the scene, Giacomo, helped by Pietro and the experimenters, crosses correctly and looks around him to understand the situation. After the film, he memorized how to cross correctly and, with the parents’ help, he starts to go to school alone.	Improving his self-awareness about the risks and the perception of the surrounding environment to go out without parents or peers.
Giacomo cooks in a real restaurant, following the instruction of the cook, using professional tools, and serving dishes to Pietro.	Giacomo reports a passion for cooking and would like to become a professional cook, but he never tried to cook using professional tools in a restaurant and has difficulty in using knives and, in general, cutting, peeling, and other tasks that require attention.	Despite the attraction toward technological tools and information, Giacomo discovered and tested his passion for cooking and decided to study in a school for professional cooks. The experience in the restaurant reinforced his idea to become a cook.	Exploring his personal passions and desires to choose his future path of study and work, as the protagonist of the film who is a cook.
Giacomo goes to a natural park for an excursion and plays guitar and xylophone outdoors with Pietro.	Giacomo shows a great passion for music, but he never tried to play in a different context and just have fun with others.	Giacomo continues to play musical instruments, but he also understands that he prefers cooking and that music is one of his favorite hobbies.	Improving his self-awareness, distinguishing between his passions and those of others.
Giacomo performs in a theater in front of the researchers; he plays the piano and the drums together with	Giacomo likes to perform and follows a music course; often he does some school exhibition. However, he has	Giacomo shows less rigidity and more flexibility in organizing unplanned activities. He also decides what kind	Improving the tolerance for unexpected events and promoting a higher interest in others.

(continued on next page)

Table 2 (continued)

Giacomo's Storyboard			
Scene	Before the project	After the project	Objective
Pietro to end the film.	never chosen his audience and even people to play with.	of activities he likes.	



Fig. 3. Shooting phase.

interviewer, he proved capable of conducting the interview, focusing on the geographical location of the interview.

Pietro's attitude visibly changed during the second phase, in which he met his partner Giacomo. Pietro seemed to be more available and collaborative than during the interview and paid attention during the explanation of the communication rules: the presence of Giacomo seemed to trigger his interest. During the storyboard construction, Pietro proved to be particularly aware and brilliant in the conceptualization, creation, writing, and connection among scenes. Pietro showed low interest in technological tools and often asked Giacomo to explain to him the functions of the videocamera. He was, however, able to consciously insert himself as the main character of the story, expressing the desire to be looked at and valued; he also referred to Giacomo as "the main character" when appropriate, showing no rivalry but rather a wish to include his partner to work together. In the sessions of therapeutic filmmaking, he explored his fears and desires, developing a more mature relationship with his mother and improving his social and emotional skills. Pietro also became more collaborative and tolerant, listening to the researchers and his partner's advice, managing stress, and sharing his thoughts with Giacomo to realize the film according to the storyboard. During these sessions, Pietro learned to respect Giacomo's physical boundaries and at the same time taught him how to communicate through physical contact and facial expressions, showing a stronger need to share than to be the protagonist, improving the specific objectives identified: self-awareness, reciprocity, emotional and social

Table 3

Giacomo's indicators for each session.

Phases	Sessions	Mutual Interaction Total Score	Social-emotional Reciprocity Total Score	Play and behavior Total Score
Assessment	1/1	0	3	1
	1/6	4	3	3
Therapeutic Filmmaking	2/6	7	3	3
	3/6	10	3	3
	4/6	10	6	6
	5/6	12	6	6
Cinematherapy	6/6	12	6	6
	1/1	12	6	6
	2/2	12	8	6
Video-confrontation				
Follow-up 1	1/1	11	9	6
Follow-up 2	1/1	12	9	6

skills, and flexibility, as shown in Table 4.

In the last two sessions, Pietro and his partner selected and removed scenes to create the final version of the movie. He showed a greater capacity to make a decision based on his personal opinions, describing the most beautiful scenes. Pietro was also proud of the movie, which is representative of his friendship with Giacomo.

During the cinematherapy and video-confrontation phase, the participants watched their movie at the movie theatre with their families and then all commented on the experience together. Pietro openly showed his emotions while watching the film, soliciting his partner's feedback several times, touching his hands, and whispering into his ear (Figs. 4 and 5).

During the last session, Pietro watched the movie alone in the psychotherapist's office and commented with the researchers on his favorite scenes, choosing as best the one in which he slept alone in his room. Pietro also received his film on DVD and thanked the researchers profusely, giving them hugs.

During the first follow-up session, Pietro visibly showed happiness to see the researchers and spontaneously started to tell them about his last month in detail. He was more mutual and attentive in answering the questions of the psychotherapist and waited his turn when he wanted to ask something. The use of gestures was congruent to the context, and Pietro also used silence to express disappointment, showing more maturity. In the second follow-up session, Pietro was more agitated and nervous because of a recent discussion with his mother, but he calmed down and managed to tell the researchers about his feelings during the session. Table 5 reports scores of the indicators selected for the study, showing the progressive improvement of social and emotional skills of Pietro during the therapeutic process.

Case 3. Serena is an adolescent aged 10 years. She attends primary school and she has 14-year-old sister. Sometimes Serena shows traits of self-referentiality and poor tolerance of frustration, fixing her attention on numerical elements (e.g. calendar dates or multiplication tables) in order to quiet herself. Serena has difficulty in social interaction with others and she tends to interact through aggressiveness and very rarely through affectivity. Serena spends her daily life going to school and playing videogames with her father and her sister at home. The adolescent has a good relationship with her parents, who minimize Serena's social interactions with others in order to protect her from external judgments. In fact, her parents are scared that Serena may suffer from repercussions by her peers. Despite their concerns, they appear collaborative and confident to support Serena in all the phases of the project.

During the first interview, Serena seemed to be excited and curious to know the researchers and to be interviewed in front of a videocamera. Although she was focused in studying a calendar hanging on the wall, she was cooperative and willing to participate. The researchers involved Serena in the same role-play proposed to the first couple. At first, Serena was distracted by other stimuli, such as the videocamera or some objects in the room; but after a while she was involved in the situation, asking

Table 4
Pietro's storyboard.

Pietro's Storyboard			
Scene	Before the project	After the project	Objective
Pietro gets up in the morning, choosing his own clothes and going out.	Pietro never gets up in the morning or chooses his clothes alone because his mother wakes him up in the morning and decides on his clothes for him.	Sometimes Pietro complains and wants his mother to do things for him, but he is more able to make choices on his own.	Improving the sense of responsibility toward his daily life and the awareness of his own decisions and preferences.
Pietro goes to a natural park for an excursion with Giacomo and with a dog.	Pietro has a passion for dogs, but he is also scared of them.	During the scene, Pietro learned from the researchers how to pet and take care of a dog during walking. Also, he asked his parents if he can have a dog, showing less fear than before.	Becoming more self-aware, learning to know one's fears, and to trust of others.
Pietro sleeps without his mother at night.	Pietro cannot sleep without his mother, and he never tried to sleep alone because he is afraid of the dark and to have nightmares	During the project, Pietro slept sometimes with his mother and sometimes alone, proving to himself that he can stay alone during the night and to enjoy his room more, as it was used by his father since he was a child.	Learning to manage fears and to be more self-confident about one's capacities.
Pietro performs in a theater in front of the researchers and concludes the film playing the drums with Giacomo	Pietro plays flute and piano, but he is also interested in playing the drums and shares this desire with Giacomo, who plays the drums and could teach him.	Pietro has improved his social skills, learning from Giacomo how to play the drums, listening to his advice and teachings. Also, now he pays more attention when someone talks and explains something, respecting his turn and not complaining if he is not the protagonist.	Improving his capacity to listen and learn from others without receiving attention all the time.

questions to the director and participating to the activity. During the second phase, Serena met her partner Francesca and the psychotherapist explained them the main communication rules in order to collaborate during the production of the film. Firstly, Serena was litigious with Francesca, prevaricating in the relationship. Her attitude changed when the researchers proposed to the participants to write together these rules on a poster with a colored marker, comparing their opinions. During this exercise Serena showed a positive interaction and no aggressive attitudes. After, the researchers provided some pointers in order to build the storyboard and to use the videocamera during the film's shooting sessions. Serena was invited to record her partner with the videocamera, describing her characteristics and interacting with her in order to create their story. The story had to cover the following categories: characters, actions, desires and fears. Given the difficulty of both participants to



Fig. 4. Watching themselves on the movie theatre big screen.

insert emotions into the storyboard, the researchers inserted a polaroid in the creative and art-based process, helping the participants to take photos while they mimicked the emotions they wanted to add to their story. The polaroid was described to the participants as a "magical tool" which shoots and prints a photo just if the emotion is mimicked and recognized correctly by the participants. After a few tries Serena recognized Francesca's facial expressions and used them to enrich the story (Figs. 6 and 7).

In creating the storyboard, Serena decided to tell her story, describing the main activities which characterize her routine, such as getting up in the morning and playing with her older sister. Also, she shared with Francesca the desire of having a best friend who saves her from danger and with whom to play all the time. In Serena's story Francesca represented "the best friend" and there emerged a need of a close friendship, which Serena does not have in her life. The psychotherapist identified the following objectives: to improve flexibility in managing frustration and negative feelings; to express and share emotions; to promote mutual interaction and social skills in order to monitor progress during the project, as shown in Table 6.

In the entire shooting phase, Serena collaborated with Francesca and paid attention to her needs and requests. She showed an increased eye contact during all the therapeutic filmmaking process, interacting with more affection toward her partner (e.g. Serena took Francesca by the hand and sought her physical closeness, not attacking her physically or verbally). Furthermore, the adolescent respected the rules and the turns, switching between roles as director and actor and following the instructions of the researchers (Fig. 8).

During the editing sessions, Serena chose the title of the film with Francesca and revised the materials, selecting the scenes according to their congruence with the storyboard. Also, Serena paid attention to Francesca's opinion, avoiding arguments and focusing on the editing process as a game to be played together.

In the cinematherapy session, Serena watched the final product in the movie theatre with Francesca and in the presence of her family. She was visibly glad to see herself on the screen and emotionally involved in the situation. Despite the strong emotion she maintained a composed position, remaining silent throughout the whole film, and interacting with Francesca and the researchers to share her joy only at the end (Fig. 9).

During the video-confrontation, Serena watched the film alone in the psychotherapist's office and appeared interested in the scenes in which she played with Francesca. She also asked to see Francesca again to play together and keep on being friends. After the movie screening, she received the film on DVD and greeted the researchers with a smile.

One month later, during the first follow-up, the researchers met Serena. According to her parents she showed no signs of behavioral regression, but sometimes did not respect the rules at home. They often used the same communication rules explained during the project in



Fig. 5. Watching together their own movie.

Table 5
Pietro's indicators for each session.

Phases	Sessions	Mutual Interaction Total Score	Social-emotional Reciprocity Total Score	Play and behavior Total Score
Assessment	1/1	3	6	1
	1/6	5	6	1
Therapeutic Filmmaking	2/6	5	7	2
	3/6	8	7	5
	4/6	8	7	6
	5/6	8	7	6
	6/6	8	7	6
Cinematherapy	1/1	8	7	6
Video-confrontation	2/2	8	9	6
Follow-up 1	1/1	11	9	6
Follow-up 2	1/1	12	9	6



Fig. 6. Magic Polaroid.

order to educate her to listen. Serena told the researchers about the people she had met and the activities she had done in the past month. In fact, Serena's parents decided to be more open-minded, letting their daughter out more. She was spontaneous, maintained eye contact and remained composed, listening to researchers' questions and answering fairly congruently.

After three months, during the last follow-up, Serena still showed the progress emerged in the first one. She told researchers that she had invited Francesca to her birthday party and that she played with her just like during the production of the film. She also referred to a scene that she really likes, in which she is in danger and Francesca helps her. Furthermore, Serena's parents decided to enroll her in a dance class to improve her social skills. Table 7 reports scores of the indicators selected

for the study, showing the main progress in Serena's behavior.

Case 4. Francesca is an adolescent aged 10 years who attends primary school and she has a brother and a sister aged 12 and 14 years, respectively. Sometimes Francesca has difficulties in tolerating frustration and in collaborating with others and mostly she tries to get others' attention. Francesca has a frenetic routine, she goes to school, dances and swims. Furthermore, she frequents her classmates and the friends of her siblings. The adolescent has a good relationship, mostly with her mother, who is steadily present in her daily life. Her father is at work most of the time, consequently their relationship is not as deep as the one with her mother. Regarding parents' attitudes towards the project, at first her mother was authoritative to the researchers, while her father



Fig. 7. Polaroid and Storyboard.

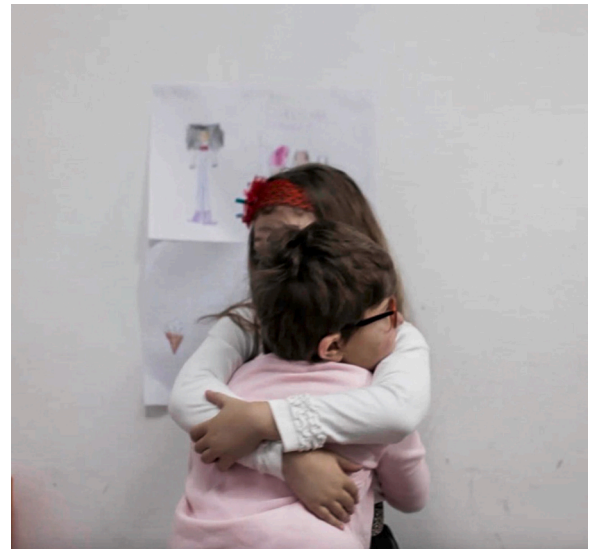


Fig. 8. Sharing emotions.

Table 6
Serena's storyboard.

Serena's Storyboard			
Scene	Before the project	After the project	Objective
Serena is woken up by deafening music from her sister, who proposes to dance together, calming her.	Serena reacts with physically and verbally aggressiveness to frustration. She often argues with her sister when she loses in playing videogames.	Sometimes Serena argues with her sister when they play games, but she is more able to modulate her aggressive reactions towards stressful situations.	Improving flexibility in managing frustration and negative feelings.
Serena goes to the park with Francesca to play together.	Serena has a low tendency for mutual interaction, preferring isolation.	During the project and the follow-up, Serena showed the desire to continue being friends with Francesca and to share new experiences with her. Also, Serena invited Francesca to her birthday party.	Promoting mutual interaction and social-emotional reciprocity skills through sharing recreative activities with a peer.
While playing in the park with Francesca, Serena sees a tree with beautiful but poisonous fruits. Serena tastes one, ends up feeling bad and Francesca helps her.	Serena shows poor abilities in make-believe game and in creating imaginative scenarios.	During the project Serena increased in her imagination skills and starts sharing with her partner fictional games and scenarios.	Stimulating Serena's imagination through make-believe game.
Serena plays with a balloon in the park with Francesca. An annoying child pierces Serena's balloon, who begins to cry. Francesca gives her a new balloon and she becomes happy.	Serena tends to express mostly anger and aggressivity while she plays or interacts with others.	Serena recognizes the value of sharing her emotions more than before. During the project she experimented the joy connected to the possibility of being helped by a friend in time of need.	Improve Serena's capacity to express and share emotions and to experience the positive value of friendship.

was not involved at all. After the first assessment, though, both were aware of the importance to be collaborative in order to ensure a positive outcome for Francesca. Thus, they changed in a positive manner, supporting and helping their daughter in the therapeutic process.

During the assessment, Francesca seemed to be comfortable in being interviewed in front of a videocamera. She maintained the same position for all the interview, telling about herself and answering questions. During the role-play Francesca was collaborative and coherent in asking questions to the director and she told the professional that she wanted to tell her story and to describe her routine.

In the phase of therapeutic filmmaking, Francesca met her partner Serena and the psychotherapist explained them the main communication rules and how to interact with audiovisual tools. At first, Francesca showed difficulties in establishing a positive relationship with Serena. In both participants there were the same critical issues in mutual interaction: Francesca reacted to the aggressiveness of Serena and vice versa. When the researchers proposed to write together the communication rules on a poster and to compare their opinions, Francesca was more willing to respect these rules (Fig. 10).

After this exercise, the researchers explained how to build the storyboard of the film and how to use the audiovisual tools. Francesca was invited to record her partner with the videocamera and to create with her their story. Francesca, like Serena, showed difficulties in inserting emotions into the storyboard. Thus, the researchers introduced a polaroid, and called it the "magical tool". They told them that the polaroid shoots and prints photos, capturing their emotions, only if they are mimicked and recognized correctly by participants. Francesca reacted positively to the game, at first, she did not recognize the emotions expressed by Serena. However, she did not behave aggressively, but tolerated her frustration and continued to play, until she interpreted Serena's emotions correctly (Figs. 11 and 12).

In creating the storyboard, Francesca decided to describe her routine, involving her brother in one of the scenes. Francesca adhered to the role suggested by Serena: the "best friend" and the "savior", who always helps the partner and shares time with her. This role has been representative of the attitude of Francesca, who often impersonates the role of "the teacher who explains how to do something". In the story this attitude has been mediated by the friendship with Serena, who asks not to be corrected but to be supported and understood. The storyboard became a meeting point for the participants to share their needs and desires, combining creative and educative aims. In fact, Francesca expressed her need to be important for someone and not just the



Fig. 9. Watching the film at the movie theatre.

Table 7
Serena's indicators for each session.

Phases	Sessions	Mutual Interaction Total Score	Social-emotional Reciprocity Total Score	Play and behavior Total Score
Assessment	1/1	3	2	1
	1/6	2	4	4
	2/6	5	4	4
Therapeutic Filmmaking	3/6	8	4	4
	4/6	9	6	5
	5/6	9	6	6
	6/6	9	6	6
Cinematherapy	1/1	10	9	6
Video-confrontation	2/2	10	9	6
Follow-up 1	1/1	10	9	6
Follow-up 2	1/1	10	9	6

protagonist of the scene. The psychotherapist identified the specific objectives in improving reciprocity and social skills, monitoring the progress of Francesca, as shown in Table 8.

In the entire process of shooting, Francesca showed a progressive ability in helping the partner in organizing the scenes, managing stressful events (e.g. while Serena was shooting one of the scenes she fell and injured her knee and Francesca showed high concerns for her, taking care of her). She demonstrated an increasing positive physical interaction with Serena and lower tendency in seeking attention. During

the editing sessions, Francesca selected with Serena the scenes of the shooting phase as well as the title of the film. She respected the communication shifts and listened to Serena, avoiding discussions.

In the cinematherapy session, Serena watched the film in the movie theatre with Francesca and her family members. She was focused on the situation, calm and silent until the end of the film. After, she took spontaneously Serena by her hand and went on stage with her to tell her family and researchers what she felt, showing the desire to involve Serena in her emotional state. In the video-confrontation session, Francesca watched the film again but in the psychotherapist's office. She asked the researchers to watch her favorite scene twice: Serena is sad because a child has blown up her balloon and Francesca gets her a new one. She told the researchers that during this scene she felt very happy and close to her new friend. After the movie screening, she received the DVD of the film and greeted the researchers with a hug.

One month later, during the first follow-up, the researchers met Francesca who told about her parents worrying for the sister who suffered from some health problems. She seemed focused on her sister and parents and did not expressed any critical issue during the meeting. After three months, during the last follow-up, Serena showed some regressions in respecting the communication rules, as reported by the parents. Despite these regressions, during the session Francesca was available in the dialogue with the researchers and told that she had been invited by Serena to her birthday party. She described the joy felt during the party and expressed the desire to interact with Serena in the future. Table 9 reports scores of the indicators selected for the study, showing

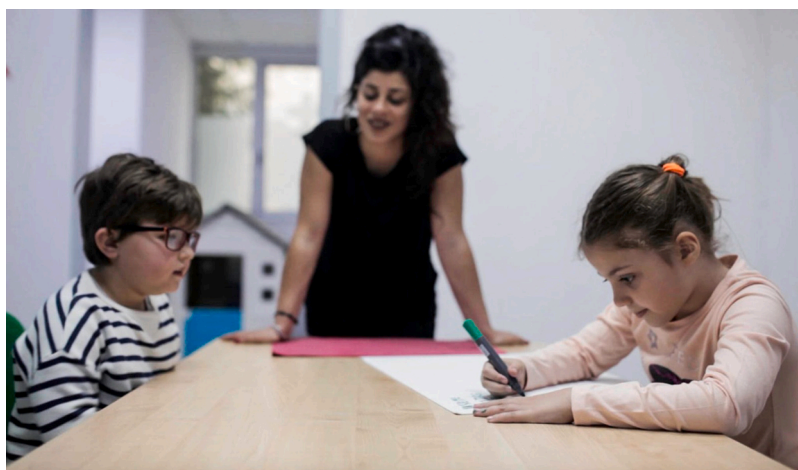


Fig. 10. Writing the communications rules.



Fig. 11. Recognizing emotions.



Fig. 12. Facial emotions.

the main improvements of Francesca.

Discussion

As shown in these case reports, the studies illustrated an improvement in the main social and relational deficits of ASD patients. The researchers observed and monitored participants' behaviors according to the following DSM 5 (American Psychiatric Association, 2013) categories: mutual interaction, social-emotional reciprocity, play and behavior. The participants included two couples, the first composed by two males, Giacomo and Pietro, aged 11–13 and the second composed by two 10-year-old females, Serena and Francesca.

During the phases of the study the participants showed a progressive change in their behavior than in the first phase of assessment. They began to collaborate, share opinions and congruently use gestures and physical contact, becoming more aware of and confident about their emotions and feelings. Also, especially during the therapeutic filmmaking, they appeared to enjoy using their imagination in the role-play and direction activities proposed by the researchers. Along these lines, storyboard construction - a procedure which combine expressive tools of art therapy (drawing, writing, photography) and technical-narrative

skills (plot, characters, scenes) - played a fundamental role in allowing the protagonists to create and imagine different realities; indeed, they chose to tell their own stories, exploring themselves, their fears and desires, and realizing the plot together through the construction of the script and the movie. Furthermore, the participants improved their ability to manage unexpected and stressful events.

In the first couple, Giacomo showed more interest in others, as expressed by his questions about Pietro's thoughts, opinions, or ideas during the phases of the project. In contrast with the attitude he showed during the first interview, a greater sense of social reciprocity was noted, as shown by a more sustained gaze toward the team as well as toward Pietro. Furthermore, Giacomo showed more attempts to initiate mutual attention and to share emotions and feelings connected to the filmmaking activities, such as videotaping or choosing the scenes to edit the movie. Moreover, the relationship with a younger peer seems to have positively affected Giacomo's ability to take care of another person.

Similarly, Pietro reported a qualitative improvement in his interaction response, as shown by more appropriate feedback and an increased ability to maintain focus on the main topic during a conversation. An improved respect for pauses in dialogue was noted, as were an integration of gestures to explain his own point of view. The peer

Table 8
Francesca's storyboard.

Francesca's Storyboard			
Scene	Before the project	After the project	Objective
Francesca gets up in the morning, takes a shower, gets dressed and goes out.	Francesca shows difficulties in paying attention to the rules, not respecting instructions given by others.	Acting in the scene while following the rules and instructions of the researchers helped Francesca to explore her capacity in listening to others in order to realize shared objectives. Furthermore, she respected the role of Serena while she was the director and shooting the scene.	Understanding the importance of respecting the rules and listening to others, working together with peers and adults with common goals.
While playing in the park with Serena, Francesca sees that her friend does not feel very well after she has eaten a poisoned fruit and she helps her.	Francesca has difficulties in processing and recognizing some emotions and feelings within herself and in others.	During the project, Francesca experienced a lot of situations in which she interpreted facial expressions. She became more aware about the emotional states of others and her own and in answering congruently.	Promoting recognition and handling of emotions.
Francesca and Serena play with a balloon in the park. Serena begins to cry because a child breaks her balloon. Francesca gives her a new balloon to make her happy again.	Francesca is focused on herself and mainly interacts with others to feel the center of attention.	Francesca enjoyed the role of Serena's savior, showing herself more and more capable of helping her and eager to share the emotion of joy with her during and after the shooting phase.	Improving social skills through shared experience, interacting with others not only to be the protagonist but also as a co-protagonist and friend. Learning to see others.

relationship played a fundamental role in his sharing and learning skills. Giacomo learned from Pietro to integrate physical contact during a conversation and to share his emotions, while Pietro learned from Giacomo to maintain more physical distance from others, avoiding invading one's personal space and to tolerate the feeling of not being the center of the attention.

The first time both participants showed difficulties in following the

Table 9
Francesca's indicators for each session.

Phases	Sessions	Mutual Interaction Total Score	Social-emotional Reciprocity Total Score	Play and behavior Total Score
Assessment	1/1	4	1	1
	1/6	5	2	1
Therapeutic Filmmaking	2/6	6	4	2
	3/6	8	6	5
	4/6	8	6	6
	5/6	8	7	6
	6/6	9	9	6
Cinematherapy	1/1	10	9	6
Video-confrontation	2/2	11	9	6
Follow-up 1	1/1	11	9	6
Follow-up 2	1/1	11	9	6

rules of communication, while in a second moment they began to collaborate, taking part to the creative and art-based process, which progressively educated them to behave as the main characters in equal measure. During the construction of the storyboard and the filming of the movie, the participants had to face unexpected setbacks, make decisions, and solve problems. However, they also achieved the individual objectives within the script and shown in the scenes, (i.e. improvement of personal autonomies linked to daily life, taking care of personal hygiene and choosing one's own clothes for going out). The story became the reality through a long process of individual and couple learning.

Compared to the first couple, Serena and Francesca needed more time to socialize. Both showed a tendency to be self-centered and intolerant to frustration. In order to manage and reduce these difficulties the researchers used specific imaginative and ludic techniques through audiovisual tools, with the aim to "see each other". For instance, the children were involved in writing the communication rules explained by the psychotherapist, sharing opinions and understanding the importance of this process to building together their own story. These rules concerned the following aspects: reciprocity in a dialogue, listening and respecting others while they talk and express their opinion, communication shifts and collaboration. Moreover, they learned how to use the videocamera to describe their partner, paying attention to each other. This exercise seems to have reduce the main critical issues of the participants: the aggressiveness of Serena and the tendency to get attention of Francesca.

Serena and Francesca, as the first couple, decided to tell a biographical story, describing their daily life. Serena has expressed the wish to have a best friend who saves her from difficulties and who is always close to her; while Francesca joined this role, impersonating the ever-present friend of Serena, feeling important. Thus, the roles of the participants had been complementary, as in the story of Giacomo and Pietro: the desire of one character met with that of the other and the desire to tell their own story became an important goal for them. During the therapeutic filmmaking, the researchers involved the participants in a game to train their ability to process facial expressions in order to enrich the storyboard of emotions: the "magical polaroid", which shoots and prints a photo, capturing the emotions of the participants, but just if those are mimicked and recognized correctly by them. Serena and Francesca have been enthusiastic to use the polaroid. They did not show any kind of frustration or aggressive conduct and continued to play until the correct answer. In this line, impersonating both, the role of director and the role of actor, has been important for the participants: Francesca improved her capacity to share attention with her partner and Serena was more focused on her desire to have a friend and to socialize with Francesca. Moreover, the involvement of the participants in the editing sessions allowed them to perceive themselves as protagonists not only of the film but also of the creative process. This phase has been representative of all the work done together. During the process the adolescents improved their collaboration and communication skills, learning from each other, until the end of the project.

Conclusion and future perspectives

From the observations reported in our study no specific gender-based differences was noted among participants. On the contrary, there seemed to be a significative difference depending on the age of the couples. Indeed, younger participants seemed to be more self-centered than the older ones and to need more time to socialize with the novelty of the project and with the partner. Despite these difficulties both couples received positive improvements in their critical issues, especially through the peer buddy relationship.

These observations might be important in establishing new therapeutic approaches for ASD patients that are based on the relationship not only between adolescents with ASD and those without but also between children with ASD. In fact, the results suggest the possibility to involve ASD adolescents in peer buddy creative and collaborative activities in order to promote social and relational skills, avoiding social isolation. Acting and directing activities allow children to experience their autonomy indirectly and discover their abilities, viewing the sessions not as tasks to overcome but as an arena in which to have fun, without anxiety or fear.

Given the observative nature of the study we cannot generalize the results. Future development should extend the analysis to a larger number of participants to evaluate the effect of therapeutic filmmaking, cinematherapy, and video-confrontation on this specific disorder, promoting the psychological well-being of ASD youths.

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