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Efficacy of music therapy in the treatment of anxiety among children at social risk and those have committed child to parent violence

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Abstract

The purpose of this research is to analyze the significant impact music therapy can have on a group of adolescents who have committed Child to Parent Violence and a second group of teenagers at social risk. Both groups were made up of 11 participants between 13 and 21 years of age (M = 16 years, SD = 1.66 years) with six males in each group. Both groups participated in eight music therapy interventions where state-trait anxiety levels were measured before and after each session. Furthermore, trait anxiety levels were measured after the first and eighth sessions. Our findings indicate that the treatment used performs differently in each group: a more significant reduction in state anxiety levels was observed among participants who had used Child to Parent Violence, where trait anxiety levels were more significantly reduced among participants at social risk. Our findings also indicate that music therapy can be effectively used to reduce anxiety levels among socially vulnerable groups, and that it may have a significant impact on the reduction of this disorder, depending on the anxiety level.

Keywords

music therapy, anxiety, child to parent violence, social risk

Child to parent violence

While Child to Parent Violence (hereafter, CPV) has always existed in our society, it no longer exclusively belongs to the family's private realm. Currently, it constitutes a social problem of

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utmost importance. As defined by Aroca (2010), it is the type of violence where the son or daughter acts intentionally and consciously with the desire to cause harm, injury and/or suffering to their parents repeatedly over time and with the immediate aim of gaining power, control, and dominance over their victims to get what they want through psychological, economic, and/or physical means (Cottrell, 2001; Paterson, Luntz, Perlesz, & Cotton, 2002). Within this definition, Aroca, Bellver, and Alba (2013) exclude the violence exercised by minors who suffer a severe psychopathology that may prevent them from discerning between good and evil and real versus unreal. Traditionally, CPV has been linked to mental disorders, though it is currently associated with intentional behaviors (Aroca, 2010). It is important to highlight that the individuals who are victims of CPV are the adults who are responsible for the education of these children. They could belong to any age and gender group, though it is more frequent among older parents and single-parent families. Also, it is more prevalent among mothers than fathers (Gallagher, 2004; Ibabe, 2007).

Regarding the prevalence of CPV, the latest data obtained from the Memoria de la Fiscalía General del Estado (2018) (Report from the Office of the Attorney General) indicates that the number of reports filed against young people due to CPV has increased in Spain since 2013, reaching a total of nearly 4,898 claims filed by parents against their children in 2015. In 2016, this number went down to 4,355 cases, 11% less than the previous year, the lowest figure during this period. In 2018, the number of proceedings that required action from the Juvenile Court due to CPV was 4,871. The data available show very heterogeneous results per autonomous community. Andalusia shows the largest number of reports filed against minors for this crime (1,034 in 2018) followed by the Community of Valencia (832), the Community of Madrid (686), the Canary Islands (405), and Catalonia (358) (Amigó Foundation, 2018). It is important to point out that the figures corresponding to these cases do not represent the reality of this phenomenon, as many parents are afraid to acknowledge their "failure" as fathers or mothers and also want to protect their children. When parents finally file a claim against their children, they feel absolutely overwhelmed and helpless. Parents also turn to organizations or foundations that may provide some support to sort out and channel the problem without having to report the case (Agustina & Abadías, 2019).

The explanatory models with the strongest empirical support that have been used to explain CPV in the family context are the following: Bandura's Social Learning Theory (1987), which focuses on violence between parents and violence against their children, and Patterson's Coercion Model (1982), based on the concept of mutual modeling between parents and children. The first theory explains family violence by focusing on the violent way in which parents relate to each other or to their children (Bandura, 1987). Thus, this approach rejects the innate conception of human aggression and the genetic basis of temperament or personality, transferring the origin of violence to the learning by modeling that is produced in interpersonal relationships, in our case, the family. The second theory establishes that situations of child to parent violence are due to the authoritarian educational style of the parenting figures, since they tend to impose a large number of rules, the breach of which is often accompanied by physical punishment (Patterson, 1982).

Cottrell and Monk (2004) define CPV as a set of acts of verbal, emotional, and/or physical violence that children repeatedly commit against one or both parents. It is also child to parent violence any act the child performs with the intention of causing physical, psychological, and economic harm to gain power and control over their parents (Cottrell, 2001). These coincide with ecological theories on domestic violence (Belsky, 1980; Dutton, 1985). This theoretical model comprises all the different factors involved in CPV using a broader framework: family violence including physical, psychological, sexual, and any other type of aggression that is

repeatedly exercised by a family member that causes physical and/or psychological damage violating another person's freedom (Echeburúa, 2003).

Determining the causes that might lead to CPV can be a complex task, as it is based on the relationships that make up the family unit. In the various research done, there is no consensus on causes that can explain this phenomenon in regard to access to social resources, and analysis of this type of violence can be challenging. As mentioned by Galatsopoulou (2006), there is no practical "know how" on this matter. Furthermore, it is important to have the support of scientific studies as it is an issue that involves topics such as juvenile reform, mental health, and psychosocial factors. Regarding the potential causes of CPV, some authors refer to the family's educational styles, structure, and socioeconomic level (Aroca, Cánovas, & Alba, 2012). Nowadays, a paradigm change has emerged leading to a more holistic view of this phenomenon based on systemic interventions and joint therapies. According to Palomar and Suárez (1993), there has been a switch from an individualistic approach that tried to ascertain the reasons that explained some behaviors in certain situations and inter-relations between the main stakeholders to a theoretical-practical and systemic family intervention. This new paradigm is based on experience, and the fact that the violent behavior of most of these youths is not determined by mental disorders, severe psychopathic disorders, or consumer patterns but rather by models that have been learned within the family or social systems (Graña, Garrido, & González Cieza, 2008). Furthermore, there has been a switch from a medical or pharmacological approach to a socio-educational one.

Anxiety and child to parent violence

Regarding the characteristics of the minors who exert violence against their parents, the most remarkable cases show anxiety disorders (Goodyer, Herbert, Tamplin, Secher, & Pearson, 1997; Ibabe, Jauregizar, & Díaz, 2007). Thus, anxiety can be one of the causes that explains the use of violence to face family conflicts, since within the psychological profile of adolescents who use physical violence against their parents, one of the three psychological variables is anxiety (Ibabe & Jaureguizar, 2011). Also, anxiety among minors who commit CPV constitutes a personal risk factor as it is considered a negative emotional state that may trigger violent situations (González et al., 2013).

Graña et al. (2008) also analyze anxiety from a dual perspective: as a variable of the hypothesis used to explain violent situations and a goal to be achieved within the emotional realm, that is, to decrease anxiety levels among minors. Subjects who believe they are not able to control the stressful events in their lives are more likely to experiment anxiety. This situation is more prevalent among minors who face difficult social situations, such as those who have inflicted CPV (Morris, 1997).

Social risk

A risk situation is a situation in which the personal, family, social or educational development, well-being, or rights of a minor are jeopardized due to personal, family, or educational causes. Consequently, the intervention of a competent public organization is necessary to eliminate, reduce, or offset their difficulties and avoid abandonment and social exclusion and potential separation from their family group. Balsells (2003) and Gomez-Granell, García-Mila, Ripol-Millet, and Panchón (2002) refer to all the circumstances that may jeopardize the correct development of a child's infancy, primarily family causes as well as elements linked to the individual and their environment.

It is important to highlight the importance of the individual's environment in any social risk that might affect a minor. As such, a minor will be facing a social risk situation if they belong to a family group that presents risk factors (Mesa, 2008).

Compas and Reeslund (2009) focused on several levels of analysis, including broad social contextual processes, proximal environments (especially the family), and individual psychological and biological processes. Furthermore, some important sources of risk and resilience precede adolescence and are linked to the maturation that occurs or begins in childhood and continues into adolescence, whereas others arise in adolescence and their effects may either be limited to adolescence or continue into adulthood.

Risk situations refer to the presence or absence of specific conditions in the life of a minor and in their environment that may increase their vulnerability and violate their rights (Mesa, 2008). One of the characteristics of minors at social risk is the inexistence of protection factors (Arbex, 2005).

However, a risk situation refers to potential absence of normal socialization, adaptation, and integration into society, although normality and risk are not closed categories (Berger & Luckmann, 1996). Absence of normality is related to the failure or inadequate provision of protection, that is, dysfunctional families, child abuse, school failure and dropout, drug addictions, among others.

Other orientations, such as Kohlberg's cognitive approach, state that morality is not simply the result of unconscious processes (super-ego) or early learning (conditioning, reinforcement, and punishment), but that there are some moral principles of a universal nature, which are not learned in early childhood and are the product of mature rational judgment. The key to moral development is the concept of justice (Kohlberg, 1981). Research, such as that by Lee and Prentice (1988), studied the interrelationships of a variety of indices of socio-cognitive development (empathy, role-taking, logical cognition, and moral reasoning) in delinquent and non-delinquent adolescents. From this research, it was deduced that morality is not taught by anyone but rather the child constructs his own moral values, and the exercise of moral conduct is not limited to rare moments in life but is integral to the process of thought and is used to extract meaning from the moral conflicts that arise in daily life (Hersh et al., 1984).

Therefore, effective capacity building for adults that strengthens the quality of relationships among caregivers is a promising mechanism for indirectly fostering the resilience of children and adolescents (Busso, 2014). Likewise, social support has been involved in reducing stress levels (Whitman, Borkowski, Schellenbach, & Nath, 1987). It could be said, then, that this lack of social support would be a common point among children at social risk and children who exercise violence against parents, since the creation of social networks of trust and support are objectives of almost all prevention and intervention strategies working with young people at risk (Busso, 2014). Both groups lack this quality in such relationships, which we believe could lead to a high level of anxiety in both. As Smith, Lizotte, Thornberry, and Krohn (1995) point out, the family (like parental supervision and attachment) functions as a protective factor with respect to delinquency, since they found that parental supervision, child attachment to parents, and parent attachment to child is significantly differentiated between resilient and non-resilient youths. In addition, they reported that those with more operative protective factors were significantly more likely to be resistant to delinquency, but not long term.

Music therapy

The therapies used to overcome this problem have been based on the individual and a disorder that was generally associated with a psychiatric pathology: delirium disorders and/or

hallucinations, mental deficiency or autism, withdrawal syndrome among drug addicts, or psychopathic personalities (Pérez & Pereira, 2006). Traditionally, greater attention was given to the aggressor as the patient and a specific pathology was associated with the aggression. This was a reductionist and individualistic view.

It could be said that Community Music Therapy promotes musical participation and social inclusion, as well as equitable access to resources and collaborative efforts for health and well-being in contemporary societies. It can be characterized as solidarity in practice. It can also be very different from individual treatment, and sometimes closer to practices such as social work and community work (Stige & Aarø, 2012).

Likewise, Stige (2014) points out that medical influences on music therapy are very present, as even though we do not work in hospital environments, the assumptions underlying the medical model of decision-making have been quite notable: the expert professional examines the problems of an individual who seeks help, minimally identifies a diagnosis, prescribes an intervention and then evaluates its effects. It is, therefore, based on the Evidence-Based Practice (EBP) model. Community Music Therapy is contrary to this position. There are also other important works that describe the line of Community Music Therapy (Pavlicevic, 2006; Pavlicevic & Ansdell, 2004).

Arias, Ridaura, and Sánchez (2010) and Routt and Anderson (2011) suggest a group intervention for minors and parents, separately. Moreno (2009) recommends a group intervention focusing on the minors.

Music therapy can be a suitable therapy, as music constitutes an ideal vehicle to express one's emotions. Also, it has strong therapeutic potential among patients with emotional disorders. Gaston (1968) highlights the power of music to express deep emotions words are not able to describe.

According to the World Federation of Music Therapy (2011), music therapy is the professional use of music and its elements as an intervention in medical, educational, and everyday environments with individuals, groups, families, or communities who seek to optimize their quality of life and improve their physical, social, communicative, emotional, intellectual, and spiritual health and well-being. Research, practice, education, and clinical instruction in music therapy are based on professional standards that adapt to cultural, social, and political contexts.

Regarding the use of music therapy in domestic violence settings, results have been positive as it provides participants with a break from their daily routine, offering a better future to children (Fairchild & McFerran, 2018, 2019), an improvement among women who are victims of domestic violence (Curtis, 2016; Hernández-Ruiz, 2020; Juan, 2016; Kang, 2017; York & Curtis, 2015), a positive impact on interactions between parents and children affected by violence (Pasiali, 2013), and improvement in the relationship among homeless people who have been victims of family violence (Fairchild, Thompson, & McFerran, 2017; Teggelove, 2016). Music therapy is also used in other types of patients who have suffered intimate partner violence (Teague, Hahna, & McKinney, 2006) or sexual violence (Chestnut, 2013; Gonsalves, 2007).

From a preventive point of view, some authors have analyzed the potential use of music therapy among adolescents to prevent violent behavior. It helps them regulate affections, aggression, conflict resolutions, and the avoidance of and resistance to threatening situations (Nöcker-Ribaupierre & Wölfl, 2010; Wölfl, 2019).

Finally, some research projects have used music therapy to reduce anxiety levels (Davis & Thaut, 1989; Gadberry, 2011; Hernández-Ruiz, 2005; Pérez, Salinas, & del Olmo Barros, 2015). Positive outcomes have been found even 4 months after treatment (Goldbeck & Ellerkamp, 2012).

Objective

The purpose of this study is to analyze the efficacy of a music therapy program in the reduction of state-trait anxiety among adolescents who have used CPV against their parents or caretakers and another group of adolescents at social risk.

To analyze the efficacy of this program in the reduction of anxiety levels, two groups of participants of similar age and gender were analyzed: one of them was made up of adolescents who had used CPV and the other, a group of adolescents at social risk. Thus, the purpose is to determine if music therapy has the same efficacy in both groups or not. These two social groups were chosen because it was considered unethical for there to be control groups. They also had similar characteristics, due to their age and level of anxiety. Also, it was decided that the Nordoff-Robbins model of live music would be the most appropriate, since in creating music there is involvement on the part of the patient that shifts internal experiences toward the outside and because of their similar age. The objectives of the Nordoff-Robbins model have to do with a rebirth of hope, self-confidence, and a re-evaluation of feeling and meaning of oneself and life (Nordoff & Robbins, 1971).

Method

Participants

The group of participants who had committed CPV was made up of 11 adolescents having an average age of 15.91 years ($SD = 2.21$ years). Of them, six were males. They attended a community center that specialized in the treatment of families who had been victims of CPV. The other group of participants was made up of 11 adolescents at social risk with an average age of 16.09 years of age ($SD = 0.94$ years), of which six were males. These adolescents attended an educational center whose main responsibility was to intervene in social risk situations that affected students in high school. There were no ethnic members in either group, but we should note that the participants in the social risk group had a low socioeconomic level, while in the CPV group it was medium-high. All the participants came from Spain, specifically from Madrid.

Measures

To measure state-trait anxiety levels, the State-Trait Anxiety Inventory (STAI) survey developed by Spielberger, Gorsuch, and Lushene (2015) was used. Guillén (2014) conducted a meta-analysis in which different groups of patients with anxiety were compared against the general population. The reliability values obtained by this author were .87 and .93, which reflects adequate reliability values of the scale.

Procedure

A quasi-experimental design with two groups of previously assigned adolescents was used: one group that had used CPV and another one at social risk. Before the intervention, an authorization was requested from the families and the center they attended. Eight music therapy sessions were held and the dynamics were as follows: live sessions were done using creative individual and group improvisation exercises.

The quality of the music intervention was analyzed using the *Checklist for Reporting Music-based Interventions* (Robb, Carpenter, & Burns, 2011; Robb et al., 2018). The sessions were based

on the Nordoff-Robbins model of music therapy. This model was chosen because it was felt that performing live music would be more attractive to this type of patient. Listening to music can be clinically useful, but making music actively involves the child's attention, requires active and personal engagement, and channels internal experiences to the outside (Bruscia, 1987). The sessions consisted of a welcome song and a farewell song adapted to the age of the patients. Creative improvisation was at the core of the sessions and users interpreted the music based on patient assessment. They were also accompanied by an accredited music therapist who provided support for their free musical interpretation, using different improvisation techniques. The piano was the instrument chosen for the music therapy session. Also, participants chose the cymbals, the wooden box as well as small and mallet percussion instruments. The voice was also an indispensable instrument.

The musical form of the proposed interventions varied according to the patient's mood, choosing simple and clear eight-bar phrases in which the tonality or modality varied according to what was observed, which served as an anchor for the improvisation that was enriched according to the patient's response. If necessary, it was possible to pause and resume another phrase as the session progressed. If they took turns, it was reduced to four bars. They were also provided with rhythmic patterns, ostinatos, to elicit responses from the participants, which gave them confidence and allowed them to perform. In both cases, the music therapist and the participant took part in the first four sessions. Later, they were of a group type. During the music therapy session with the group of participants who had committed CPV, the father or mother of the attendees also participated in the session starting in the fourth session. The length of the individual session was 30 min, whereas the group session lasted 45 min. With the social risk group, the last four sessions were also in groups, with all members of the study participating, that is, 11 people. We referred to McFerran and Wölfl (2015) for their work in music therapy with this type of population, as they showed that individual music therapy is the most common format for working with adolescents. They also point out an anti-violence program with entire classes held in a mainstream school where there is a high level of violence in the surrounding youth culture. Short-term intensive music therapy programs work specifically with violence and encourage the construction of respectful group interactions. Group drumming and musical improvisation are used to work on positive interactions with others and to develop constructive solutions in handling aggressive situations (McFerran & Wölfl, 2015).

The participants and the music therapist played live and improvised music. The music therapist had the responsibility of giving meaning and consistency to the performance and to accompany the person who attended the session. The sessions were carried out by an accredited music therapist with more than 10 years of experience. The setting in both cases was spacious classrooms with musical instruments and a high level of privacy where there was sound-proofing from the outside. The ambient sound was minimal. The sessions were recorded on video and later analyzed.

Pre- and post-treatment state anxiety levels were measured in both groups in four of the sessions held. Also, in sessions 1 and 8 state anxiety levels were measured. Therefore, a mixed design with repeated and independent anxiety levels was measured in both groups of adolescents.

Data analysis

To assess the efficacy of the music therapy program, a mixed ANOVA was used to measure state and trait anxiety levels. Pre and post measures were used as intra-subject factor and the group evaluated as inter-subject factor: Child to Parent Violence and social risk. A mixed ANOVA was

performed to see the changes at the state level in sessions 1, 4, 5, and 8, and finally, the changes at the trait level between sessions 1 and 8. All the analyses were carried out with the statistical package SPSS V. 18.

Results

Table 1 illustrates the results of the different ANOVA tests used to measure each of the anxiety levels measured in the different sessions. The main findings collected are summarized in this section, except for the statistical data represented in Table 1. Regarding the ANOVA assumptions, all the covariance matrixes are comparable in all the contrasts, as seen in the Box tests; the variances are the same for both groups and all contrasts, with the exception of the post measure in session 4 based on the Levene test. It is important to keep in mind that ANOVA is a very solid test for non-compliance with these assumptions when the group size is similar, as in this study (Pardo & San Martín, 2010).

State anxiety—session 1. The treatment does not interact with participant type as there is no interaction between the intra-subject factor (pre and post) and the inter-subject factors (CPV and social risk; see Table 1). However, there are significant differences between the pre and post treatment measures and a large effect size ($\eta^2_{partial} = .210$). The effect size ($\eta^2_{partial}$) according to Cohen's (1988) criteria is low at .01, medium at .06, and large at .14. This result shows a clear reduction in state anxiety levels in both groups after the intervention. There are also clear differences in state anxiety levels between groups with a large effect size ($\eta^2_{partial} = .252$). This result indicates that the treatment applied has not had the same effect in both groups. Figure 1(a) illustrates the mean of both groups in pre and post state anxiety. In both groups, there are no differences in pre-anxiety levels, which shows that both groups had the same measure before the intervention. The only differences that are statistically different were found in the post measure in both groups, with a lower anxiety level in the CPV group, $t = 8.82$, $p = .017$, which indicates greater efficacy of the treatment in this group.

State anxiety—session 4. There was interaction between the treatment and type of participants and large effect size ($\eta^2_{partial} = .206$), which reflects the treatment's performance was not comparable in both groups (see Table 1). There are differences between the pre and post measures with large effect size ($\eta^2_{partial} = .330$), which shows a clear decrease in anxiety levels after the treatment (see Figure 1(b)). There is no inter-subject effect in anxiety levels. Regarding the mean figures illustrated in Figure 1(b), there are no differences in the pre measures in both groups though there are statistically significant differences in the post measures, $t = 7.57$, $p = .031$. The same occurs for the Child to Parent Violence group in the pre and post measures, $t = 8.0$, $p = .002$. This indicates that this is the only group that has experienced a change after the treatment, as there is a decrease in state anxiety levels after the intervention.

State anxiety—session 5. The only effect that was observed was the intra-subject effect and some differences in pre and post treatment measures were observed with large effect size ($\eta^2_{partial} = .495$), which shows a decrease in state anxiety after the intervention in both groups (see Table 1). Figure 1(c) clearly illustrates this pattern with statistically significant differences between pre and post measures in both individual groups, $t = 5.46$, $p = .011$, for individuals in the social risk group and, $t = 6.66$, $p = .003$, for CPV. This means the treatment was effective in both groups.

Table 1. Results of the Mixed ANOVA for the STAI Measurements in the Different Sessions.

Measure	Intra-subject effect	Inter-subject effect	Interaction	Box's test	Levene's test
STAI-S session 1	$F(1, 20) = 5.31$, $p = .032$, $\eta^2_{partial} = .210$, $1-\beta = .592$	$F(1, 20) = 6.75$, $p = .017$, $\eta^2_{partial} = .252$, $1-\beta = .695$	$F(1, 20) = 0.08$, $p = .778$, $\eta^2_{partial} = .004$, $1-\beta = .059$	$F(3, 72000) = 0.87$, $p = .455$	Pre: $F(1, 20) = 1.21$, $p = .284$ Post: $F(1, 20) = 1.38$, $p = .254$
STAI-S session 4	$F(1, 19) = 9.36$, $p = .006$, $\eta^2_{partial} = .330$, $1-\beta = .827$	$F(1, 19) = 1.55$, $p = .229$, $\eta^2_{partial} = .075$, $1-\beta = .219$	$F(1, 19) = 4.93$, $p = .039$, $\eta^2_{partial} = .206$, $1-\beta = .558$	$F(3, 99783) = 1.56$, $p = .198$	Pre: $F(1, 19) = 0.31$, $p = .583$ Post: $F(1, 19) = 10.2$, $p = .005$
STAI-S session 5	$F(1, 20) = 19.58$, $p < .001$, $\eta^2_{partial} = .495$, $1-\beta = .988$	$F(1, 20) = 0.93$, $p = .347$, $\eta^2_{partial} = .044$, $1-\beta = .150$	$F(1, 20) = 0.19$, $p = .670$, $\eta^2_{partial} = .009$, $1-\beta = .070$	$F(3, 72000) = 1.68$, $p = .169$	Pre: $F(1, 20) = 1.37$, $p = .255$ Post: $F(1, 20) = 0.82$, $p = .376$
STAI-S session 8	$F(1, 16) = 9.98$, $p = .006$, $\eta^2_{partial} = .384$, $1-\beta = .843$	$F(1, 16) = 0.00$, $p = .951$, $\eta^2_{partial} = .000$, $1-\beta = .050$	$F(1, 16) = 2.99$, $p = .103$, $\eta^2_{partial} = .157$, $1-\beta = .369$	$F(3, 5964) = 1.16$, $p = .324$	Pre: $F(1, 16) = 0.32$, $p = .582$ Post: $F(1, 16) = 0.05$, $p = .827$
STAI-R session 1–8	$F(1, 16) = 18.72$, $p = .001$, $\eta^2_{partial} = .539$, $1-\beta = .982$	$F(1,16) = 0.46$, $p = .509$, $\eta^2_{partial} = .028$, $1-\beta = .098$	$F(1,16) = 3.31$, $p = .088$, $\eta^2_{partial} = .171$, $1-\beta = .402$	$F(3,5964) = 1.70$, $p = .694$	Pre: $F(1,16) = 0.46$, $p = .507$ Post: $F(1,16) = 0.00$, $p = .986$

ANOVA: analysis of variance; STAI: State-Trait Anxiety Inventory.

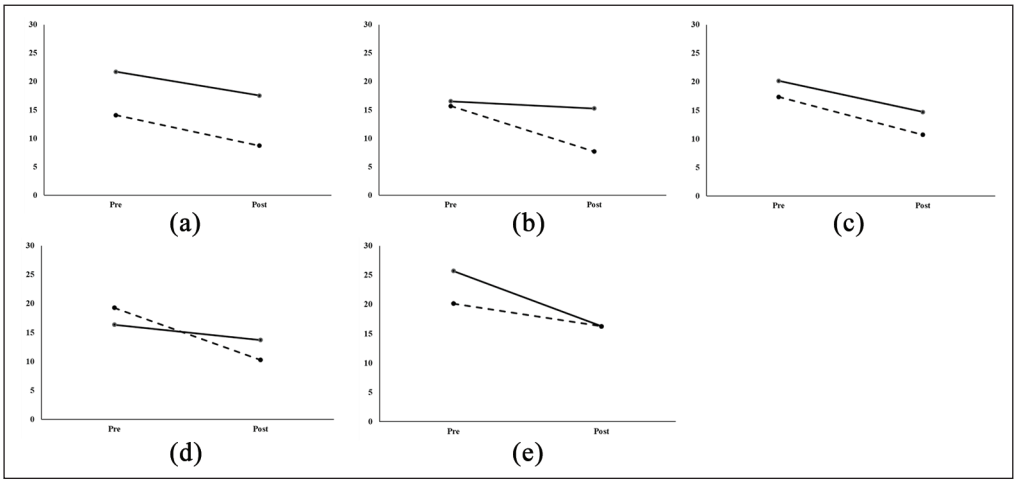

Figure 1. Means in the Pre and Post Measures for Trait and State Anxiety in the Two Groups. Social Risk Appears in a Continuous Line and CPV in Discontinous Line. (a) STAI-S Session 1, (b) STAI-S Session 4, (c) STAI-S Session 5, (d) STAI-S Session 8, (e) STAI-R Session 1–8.

State anxiety—session 8. The interaction between the treatment and the type of participants has a large effect size ($\eta^2_{partial} = .157$), which indicates the treatment has not shown the same performance in both groups (see Table 1). There are differences in the intra-subject effect in the pre and post treatment measures and a large effect size ($\eta^2_{partial} = .384$) and a clear decrease in anxiety levels after the treatment. Statistically significant differences were only observed in the mean figures illustrated in Figure 1(d) in pre and post measures for the CPV group (*Post hoc* t-test $= 9.00$, $p = .007$), with a decrease in anxiety levels after treatment, which indicates that this is the only group that has changed after the treatment.

Trait anxiety—sessions 1 and 8. Regarding trait anxiety, a comparison was made between measures in sessions 1 and 8 (see Table 1). Interaction between the treatment and type of participants was observed with a large effect size ($\eta^2_{partial} = .171$), which indicates treatment has not shown the same performance in both groups in the area of trait anxiety. There are differences in the intra-subject measures in the pre and post treatment measures with a large effect size ($\eta^2_{partial} = .539$) and a clear decrease of trait anxiety after the treatment. The only statistically significant differences were observed in the mean figures of Figure 1(e) representing the pre and post measures for the group at social risk, $t = 9.46$, $p < .001$, which shows a decrease in anxiety levels after the treatment. This is the group that has shown the biggest change after the treatment.

Discussion

The purpose of this research was to analyze and observe the significant efficacy of a music therapy program in the reduction of state and trait anxiety levels in two groups of adolescents, one that had committed CPV and another at social risk. After the use of eight sessions and collection of four measures of the state anxiety levels in four of them (before and after each session) and measuring trait anxiety levels at the beginning and end of eight sessions, our results indicate that the treatment efficacy is not comparable in both groups. Specifically, it can be

stated that the therapy produces greater changes in state anxiety among adolescents with CPV compared to the trait anxiety among minors at social risk. In any event, our data indicate that music therapy effectively reduces both trait and state anxiety levels in both groups, with the clarifications made earlier. Also, it is important to bear in mind that the effect size obtained was large, which reflects the relevance of the results obtained.

These findings are relevant as they provide information about the effects of music therapy sessions on the anxiety level of adolescents in socially vulnerable groups (CPV and social risk) who are also psychologically vulnerable due to mental disorders (Aroca, 2010). This relevance is even more important due to the increase in the incidence of these social and family problems over recent years (Amigó Foundation, 2018; Memoria de la Fiscalía General del Estado, 2018). Also, the use of a novel intervention such as music therapy with these groups seems suitable as it helps individuals express emotions that are at times difficult to put into words (Gaston, 1968).

Regarding the reduction of anxiety, there are other studies with comparable settings similar to the one used in this research (Davis & Thaut, 1989; Gadberry, 2011; Goldbeck & Ellerkamp, 2012; Hernández-Ruiz, 2005; Pérez et al., 2015).

Our results can serve as the basis for future research. These data correspond to measures of trait anxiety, not state anxiety as shown by this research, which provides an added value to our research as these types of measures can be reduced with the use of music therapy.

Regarding some samples that have been subject to different types of domestic violence, there are also positive results in the use of music therapy interventions that are comparable to our study (Curtis, 2016; Fairchild & McFerran, 2018, 2019; Fairchild et al., 2017; Hernández-Ruiz, 2020; Juan, 2016; Kang, 2017; Nöcker-Ribaupierre & Wölfl, 2010; Pasiali, 2013; Teggelove, 2016; Wölfl, 2019; York & Curtis, 2015).

Likewise, the benefits that are extracted from doing music therapy sessions are also used with other types of patients who have suffered intimate partner violence (Teague et al., 2006) or sexual violence (Chestnut, 2013; Gonsalves, 2007), coinciding with our research.

However, there are no other studies that have used this type of therapy with adolescents who commit CPV. This research offers novel findings that can be taken into account.

To sum up, our findings are in line with previous studies that have shown that music therapy can effectively reduce the discomfort of some patients, including groups that are very vulnerable such as those who have committed violence against their parents and adolescents at social risk. This endows this therapy with greater value.

Limitations

This research has a number of limitations that need to be kept in mind when extrapolating these findings to other situations and music therapy patients. First of all, the small sample size of both groups. While the sample size was small, it is important to bear in mind that these groups are not abundant in our society, which explains the challenges of recruiting a bigger sample or conducting several sessions with the same participants. Also, it is important to remember that access to this population can be a challenge, especially the CPV population due to the resistance of their parents to attend help centers or share their situation with other people. Nevertheless, the large effect size obtained in the results indicates the relevance of these results for this population. Second, it was not possible to use a control group to compare the results of both analysis groups with another group that was not exposed to a music therapy intervention. Future research studies might consider this possibility to ascertain the efficacy of this intervention in a non-treated group. Finally, it was not possible to randomly assign the participants to the groups, limiting the generalization of these results, and as a final limitation

is the possibility of contaminating variables. As these are groups who have already started using CPV or are individuals at social risk, this type of manipulation was not possible, which explains the use of a quasi-experimental design.

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