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ORIGINAL ARTICLE

Early Intervention Program in Youth-to-Parent Aggression: Clinically Relevant long-term Changes

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Abstract

Purpose Practitioners in child and family services are able to identify cases of youth-to-parent aggression. The aim of this study was to evaluate long-term effects of the Early Intervention Program in Situations of Youth-to-Parent Aggression (EI-YPA), which was implemented in a Children and Family Services context on the outcome variables of adolescents and parents (individual behavior and health outcomes), indicating the strength of the evidence.

Methods The participants were members of 39 Spanish families with children between 12 and 17 years ($N = 101$; 40 adolescents and 61 parents) and a quasi-experimental design of repeated measures was applied. EI-YPA provides positive evidence and experiences based on the reports of children and parents. In order to analyze whether the improvements were clinically relevant, a reliable change index was used.

Results Significant improvements concerning aggressive behavior at home, clinical symptoms and family conflict were found. Effect sizes were large for aggressive behavior indicators (aggressive discipline $d = 1.19$; psychological YPA $d = 0.93$), and depressive symptomatology of adolescents ($d = 0.80$).

Conclusion The positive changes found indicate the long-term efficacy of the EI-YPA on behavioral variables and clinical symptoms of children and parents, as well as the family conflict perception. This study contributes to increasing the evidence quality of EI-YPA as a potential evidence-based program.

Keywords child-to-parent violence · clinical symptoms · family conflict · intervention in child-to-parent violence · program evaluation

Introduction

Youth-to-parent aggression (YPA) includes a pattern of aggressive behavior by young people/children who consciously direct aggression toward one parent or caregiver, repeatedly over time, when the perpetrator and the victim habitually live together (Ibabe, 2020). The term aggression integrates minor aggression and severe maltreatment, while violence is an act of physical force that causes or is intended to cause harm. Thus, the term used in this study will be youth-to-parent aggression. Nevertheless, in the literature other terms have been used, such as child-to-parent violence, parent abuse or violence against parents. The data available on world prevalence rates revealed the 12-month incidence of physical YPA perpetrated to be between 5% and 21% in the community population (Simmons et al., 2018). In the Spanish context, the perpetration rate of severe physical YPA was between 2% and 5% (Ibabe et al., 2020). However, it is necessary to indicate that prevalence rates of

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YPA from different studies are sometimes not comparable because different instruments and/or criteria (zero tolerance vs. technical abuse; mild vs. serious aggression) are used to assess YPA.

There is abundant literature focus on identifying risk factors of children who perpetrate YPA and their family characteristics to explain the phenomena. When YPA is severe, male children are the most frequent perpetrators of YPA (Moulds et al., 2018). The psychological profile of adolescents who battered their parents comprises low self-esteem and empathy (Calvete et al., 2011), grandiosity and insufficient self-control schemas (Fernández-González et al., 2022) and substance use (Ibabe et al., 2014; Johnson et al., 2018). Moreover, these adolescents may often have depressive symptoms (Ibabe et al., 2014) and comorbid mental health problems (Moulds & Day, 2017). Some studies have examined whether parental discipline strategies are related to YPA, and the most conclusive results refer to highly punitive discipline (Ibabe & Bentler, 2016). Negative family environment is one of the best-known risk factors for YPA, specifically family conflict, low level of cohesion (Armstrong et al., 2018; Contreras & Cano, 2014), exposure to marital violence or parent-to-child violence (see meta-analysis by Gallego et al., 2019). Furthermore, it should be noted that most of the commonly accepted theoretical explanations for YPA are negative family environment or family breakdown (Downey, 1997). As appears obvious, this type of violence is not a problem exclusively for minors, because fathers and mothers are also immersed in the problem since it is a conflict that happens at the family level. Therefore, it would be interesting to include all family members in the intervention program, emphasizing this perspective.

YPA Intervention Programs

Despite recognition of YPA as a critical problem facing families, child and family services, mental health professionals, law enforcement, and the juvenile justice system, specific interventions are scarce (Ibabe et al., 2018; Nowakowski & Mattern, 2014) and lack a sufficient amount of empirical support (Ibabe et al., 2018; Toole-Anstey et al., 2021). A review of YPA interventions in different areas (child protection system, mental health and juvenile justice system) was carried out (Ibabe et al., 2018). Six YPA treatment programs were identified as outstanding but none are evidence-based programs because they have not undergone a rigorous evaluation process and demonstrated effectiveness. The quality of the intervention programs was analyzed taking into account the following indicators: the professional and/or research experience of the program developers in YPA, accessibility of materials, good level of protocolization of the program, evaluation report, and some evidence of their effectiveness. Only three of intervention programs (Nonviolent Resistance, Coogan & Lauster 2015; Early Intervention Program in Situations of Youth-to-Parent Aggression, Ibabe et al., 2018; Step-Up, Routt & Anderson, 2004) had program evaluation reports, but the studies included were of low quality. In the same way, in their systematic review, Toole-Anstey et al., (2021) indicated that the number of identified studies on interventions in YPA was low and they were of low quality, according to the Mixed Method Appraisal Tool (Pace et al., 2012).

Furthermore, to the best of our knowledge, there is no program at the level of early intervention with the exception of the Early Intervention Program in Situations of Youth-to-Parent Aggression (EI-YPA) (Ibabe et al., 2019), carried out in the Child and Family Services of the Vitoria-Gasteiz City Council (Spain) since 2017[1]. The EI-YPA program has the specificity characteristic of an Evidence-Based Program (EBP) (Smith, 2013): the intervention must (1) be limited in time (it has a set number of sessions), (2) have manuals with a detailed protocol necessary to implement the intervention, (3) have as objectives well-defined intervention programs that focus on a particular problem, and (4) be aimed at a specific target population.

Description of the EI-YPA Program

The general objectives of the program are the reduction of aggressive behavior in the family and clinical symptoms, as well as the improvement of the family environment, with appropriate strategies established for the resolution of conflictive family interactions. This program includes several theoretical approaches. It is a psycho-educational program with a cognitive-behavioral component and group-based therapy approach (5–10 participants), taking systemic family therapy techniques into account for family sessions (for more details see Ibabe et al., 2019). The target population is family members whose children range in age from 12 to 17 years and present YPA. The program includes three subprograms (Adolescents with 16 sessions, Parents with 11 sessions, and Families with 8 sessions), with each session lasting 90 min. Adolescents and parents have group sessions in separate spaces for learning competences and strategies, sharing experiences with persons in similar situations. All members of each family subsequently put the skills learnt into practice in the family unit context under

[1] This program was promoted by the Children and Family Services of the City Council of Vitoria-Gasteiz (Spain). It was also adapted and extended taking into account the needs of the community, based on a participative work process led and coordinated from CFS by Loli García García and Belén Ceberio Cuñado.

Table 1 Schedule of the development of the program

Week	Module	Adolescent sub-program (16 sessions)	Family sub-program (8 sessions)	Parent sub-programs (11 sessions)
1	Identifying problem		*1.Program presentation*	
2			*2.Diagnosis of the family relational system*	
3		A1		P1
4		A2		P2
5	Understanding violence	A3		P3
6		A4		P4
7			*3. Take a time out*	
8	Thoughts and beliefs about violence	A5		P5
9		A6		P6
10		A7		
11	Emotional management	A8		P7
12		A9		
13		A10		
14		A11		P8
15	Communication skills and conflict resolution	A12		P9
16		A13		P10
17		A14		
18			*4. Family problem solving*	
19	Strengthening of change	A15		P11
20		A16		
21			*5. Assertive communication and limits in the family context*	
22			*6. Changes and repair in the family context*	
23			*7. Positive and negative emotions in the family*	
24			*8. What have we changed?*	

the practitioner's supervision. The intervention program manual has 508 pages, in which the sessions are explained, with timing for every activity and recommendations for special situations. It also includes a workbook for participants that can be consulted at home at any time. Information about the program schedule is shown in Table 1.

The conceptual basis of this intervention emphasizes the complexity of the variables involved in the development of YPA, and the interrelation of different levels in terms of YPA. The influence of a wide range of potential risk factors that have previous empirical support derived from different ecological levels has been indicated (Hoyo-Bilbao et al., 2020). EI-YPA adopts Bronfenbrenner's (1979) social-ecological model of human development. Some microsystem level (domestic violence exposure, ineffectiveness in parents' application of discipline or use of severe discipline) and ontogenic level (adolescents' impulsivity, substance abuse or conflict-resolution skills) risk factors of YPA are modifiable, and interventions targeting them may therefore reduce YPA.

Empirical Evidence of the EI-YPA Program's Effectiveness

The number and quality of the research studies are two aspects of evidence which should be taken into account for EBP selection. Four studies to date provide evidence of the effectiveness of EI-YPA (Arnoso et al., 2021; Asla et al., 2020; Ibabe et al., 2018, 2021) based on families of children aged 12 to 17 years. With the exception of one study (Arnoso et al., 2021), these have published the short-term treatment effect of the EI-YPA program in Spanish families on the outcome variables of children and parents. These studies reported that children and parents presented fewer behavioral and emotional problems after intervention. Specifically, the EI-YPA program is an effective intervention for reducing physical and psychological YPA and depressive symptomatology outcomes (frustration tolerance, avoidance problems and higher self-esteem) between the pre-intervention and post-intervention (six months starting intervention program) (Arnoso et al., 2021; Asla et al., 2020; Ibabe et al., 2018, 2021). The decrease of externalizing and internalizing behavior of children and parents would reflect the EI-YPA program's short-term effectiveness.

Previous studies regarding EI-YPA evaluation have two important limitations. First, the effects of this intervention program in the long term have hardly been studied. Second, the small sample size of these studies caused them to have low statistical power, making it impossible to know the true effect of the program. It would therefore be interesting to analyze what happened one year after starting the intervention program, or to what extent YPA, clinical symptoms of all participants (adolescents and parents), and family conflict improved or if results remained stable in the six-month follow-up evaluation. If one program showed that changes in the participant's attitudes, knowledge or behaviors were not permanent after program participation had ended, then the effects would not be sustainable and it would therefore be inadequate (Ebbole, 2007). Although the pattern of reduced violent behavior and emotional problems of children and parents after intervention reflects the EI-YPA program's

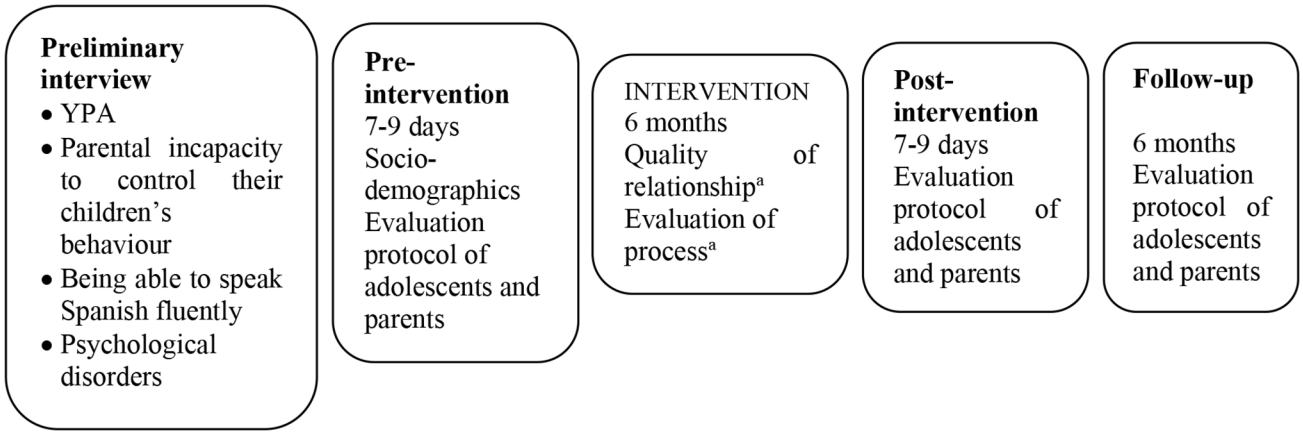

Fig. 1 Evaluation design of the study. (*Note: Evaluation protocol (YPA, parental discipline, clinical symptoms, life satisfaction, and family conflict);[a]: these results are presented in Asla et al.* (2020) *and Ibabe et al.* (2021))

short-term efficacy, it is important to continue assessment of the long-term effects on family members, including more clinical indicators such as psychological inflexibility or emotional instability. A previous study based on 33 parents (Arnoso et al., 2021) found a one-year positive effect for inappropriate discipline and depressive symptomatology, with large effect size. In general, YPA programs are needed that provide more solid evidence of long-term follow-up data on outcomes and recidivism rates.

Objectives

The main objective of this study was to analyze the long-term effects of the EI-YPA program (Ibabe et al., 2019), on the outcome variables of adolescents and parents, indicating the strength of the evidence (weak, medium or strong), and whether these changes were clinically relevant. Recent research on clinical studies recommends that researchers conducting clinical studies report the level of statistical significance of individual change resulting from treatment (Hays & Peipert, 2021). In the present study, a long-term effect is considered when the follow-up is at least six months after the conclusion of a program (one year after starting the program), based on a meta-analysis of the short-term and long-term efficacy of psychological therapies (Laird et al., 2016). Hypotheses based on long-term effects were proposed:

1. Both physical and psychological YPA directed at fathers and mothers will be lower one year after starting the program, according to previous findings on short-term effects (Arnoso et al., 2021; Asla et al., 2020; Ibabe et al., 2018, 2021); it was expected that these changes would be maintained in the long term.
2. Adolescents will show a lower level of clinical symptoms (depressive symptoms and emotional instability) and irrational beliefs, as well as higher empathy and life satisfaction one year later, taking into account previous short-term findings regarding irrational beliefs of adolescents (Ibabe et al., 2021), depressive symptoms and empathy (Ibabe et al., 2018).
3. Aggressive discipline by fathers and mothers will be lower one year later. This result is expected given the large effect size found in the long term in a previous study (Arnoso et al., 2021).
4. Mothers and fathers will present a lower level of clinical symptoms (depressive symptoms and psychological inflexibility) and higher empathy. This hypothesis is based on a previous study which indicated that depressive symptoms decreased in the long-term (Arnoso et al., 2021), and in another study all family members showed a higher level of empathy after intervention (Ibabe et al., 2018).
5. All family members will also perceive a lower level of family conflict, as found in some previous studies on short-term outcomes of EI-YPA (Arnoso et al., 2021; Asla et al., 2020; Ibabe et al., 2021).

Method

Design and Evaluation

In the current study, a quasi-experimental design of repeated measures (pre, post and follow-up) was applied, which includes two attempts to demonstrate an intervention effect. This design allows the monitoring of changes within participants through comparison between phases: pre-intervention (before beginning the intervention), post-intervention (immediately after finishing the intervention)

and follow-up (six months after finishing the intervention or one year after starting the program) (see Fig. 1). The instruments applied were standardized scales with acceptable psychometric characteristics. When the original language of the instrument was not Spanish, an instrument adapted and validated to the Spanish population, and published previously, was used. The initial evaluation of adolescents and parents included preliminary questions to assess inclusion and exclusion criteria. Children and Family Services specialists offered families the opportunity to participate in the program, after verifying that they fulfilled the inclusion criteria in a semi-structured interview. The inclusion criteria were based on two aspects: (1) mild or moderate aggression of children toward the father or mother (psychoemotional or specific incidents of physical YPA) and, (2) parental inability to control aggressive behavior in any context according to the BALORA instrument (Arruabarrena, 2011). Exclusion criteria were serious physical aggression to one parent (given that the intervention program's focus is on early intervention in YPA), not being able to speak Spanish fluently, being the perpetrator of intimate partner violence, or severe cases of child abuse. Those who decided to participate in the program were called to do a pre-intervention evaluation. An applied psychology unit was contracted to implement the program, and six therapists and a coordinator conducted the intervention.

Participants

At the beginning of the program, 39 families living in Spain with sons and daughters between 12 and 17 years of age were willing to participate. These families were made up of 40 adolescents (26 sons and 14 daughters) and 61 parents (39 mothers and 22 fathers) ($N = 101$). Although it should also be noted that siblings participated in the family sessions, they were not included in the evaluation. Two mothers exceptionally attended the subprogram for fathers/mothers without their sons or daughters participating in the program and they were counted as family. Furthermore, two mothers were a couple from the same family and two of the adolescents also belonged to the same family, because they were twins. In this study, program completion status was attained when attendance was higher than 62% because in each subprogram participants had to complete a sufficient number of sessions to have some effect (Adolescent 10 out of 16 sessions; Parent 7 out of 11 sessions, and Family 5 out of 8 sessions).

Of the 40 adolescents who started the program, eight did not complete it, resulting in an overall dropout rate of 20% (8/40). Three adolescents were referred to another service because YPA increased to a higher level of severity in the course of the program, and five adolescents dropped out of the program voluntarily or did not meet the program's minimum attendance requirement. Of the 61 parents, seven did not complete the program, with a parental dropout rate of 11% (7/61). Four parents left the program voluntarily, while three others were referred to another service due to the seriousness of the family problem. The overall dropout rate taking into account all participants was 15% (15/101), which means that adherence to treatment was 85% (86/101). Information on the characteristics and profiles of the participants who started the program can be found in Table 2.

Table 2 Socio-demographic characteristics of participants in program evaluation

Children	($n = 40$)	
Child gender		*n* (%)
Male		26 (65%)
Female		14 (35%)
Child origin		*n* (%)
Spanish		28 (85%)
Immigrant		5 (15%)
Child age [*M* (*SD*)]		14.41 (1.59)
Number of siblings [*M* (*SD*)]		2.24 (1.46)
Unexcused absences from school		18 (50%)
Problems with the police for domestic violence		8 (22%)
Problem with the police for other reasons		11 (31%)
Families ($n = 39$)		
Family income (Euros per month)		*n* (%)
Less than 1,000 €		8 (20%)
Between 1,000–2,000 €		10 (26%)
Between 2,000–3,000 €		10 (26%)
More than 3,000 €		11 (28%)
Family structure		*n* (%)
Two biological parents		17 (43%)
Parents separated or divorced		17 (43%)
Other type of structure		3 (8%)
Any parent died		2 (5%)
Parents (Fathers $n = 22$; Mother $n = 39$)		
Father education level		*n* (%)
Elementary education		6 (26%)
Professional training/ secondary education		12(53%)
University education		4 (21%)
Father employment status		*n* (%)
Employed		20 (90%)
Unemployed		0 (0%)
Retired/pensioner		2 (10%)
Mother education level		*n* (%)
Elementary education		9 (24%)
Professional training/ secondary education		18 (46%)
University education		12 (30%)
Mother employment status		*n* (%)
Employed		30 (76%)
Unemployed		6 (16%)
Social help	3 (8%)	

Variables and Instruments

In order to homogenize the answer format in all instruments, a five-point Likert scale was applied. Measures of violent behavior (Adolescent Child-to-Parent Aggression Questionnaire and Aggressive Discipline) are based on the frequency within the last year using following scale (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Very often).

Youth-to-parent aggression (Parent report) (Adolescent Child-to-Parent Aggression Questionnaire, Calvete et al., 2013). The scale assessed physical and psychological aggression against parents with 10 items based on the last year of living together (physical 3 items and psychological 7 items) (e.g., You have been insulted or sworn at by your son/daughter). This scale, answered by parents, showed an acceptable internal consistency for physical violence (pre-intervention α = .75; follow-up α = .75) and for psychological violence (pre-intervention α = .77; follow-up α = .85).

Aggressive discipline (Parent report) (Dimensions of Discipline Inventory DDI-C, Straus & Fauchier 2007; Spanish adaptation, Calvete et al., 2010). Although this inventory measures four general dimensions, the present study only measured corporal punishment and psychological aggression by the parent in their relationship with their son or daughter. Each subscale had four questions (e.g., How often did you shake or grab your children to get his/her attention?). In this study, internal consistency was acceptable for corporal punishment (pre-intervention α = .89; follow-up α = .98) and for psychological aggression (pre-intervention α = .79; follow-up α = .86).

Depressive symptomatology (Parent report) (Brief Symptom Inventory, BSI-18, Derogatis 2001). This scale was developed to measure the most prevalent psychopathology symptoms in clinical, medical and community populations. As originally constructed, BSI-18 consists of three factors that include somatization (e.g., Faintness or dizziness), depression (e.g., Feeling no interest in things), and anxiety (e.g., Feeling tense or keyed up). A global severity index can be calculated, which is the full-scale score across the three factors. Higher scores indicating more distress during the previous week. This scale showed excellent internal consistency (pre-intervention α = .95; follow-up α = .94).

Psychological inflexibility (Parent report) (Acceptance and Action Questionnaire-II, AAQ-II; Bond et al., 2011). Psychological flexibility and acceptance are key concepts of Acceptance and Commitment Therapy (Spanish adaptation of Ruiz et al., 2013). It comprises 7 items (e.g., Emotions cause problems in my life). In this study, internal consistency for this scale was excellent (pre-intervention α = .92; follow-up α = .93).

Irrational beliefs of children (Adolescent report) (Irrational Beliefs Inventory for adolescents, Cardeñoso & Calvete 2004). This inventory included one scale of Irrationality and six subscales of irrational beliefs: Need for Approval/Success, Helplessness, Blame Proneness, Avoiding Problems, Intolerance to Frustration, and Justification of the Use of Violence. This instrument has 37 items (e.g., Sometimes you have to hit someone because they deserve it), which are answered in degrees of agreement. Global internal consistency was excellent (pre-intervention α = .88; follow-up α = .86).

Emotional Instability (Adolescent report) (Emotional Instability Scale, Caprara & Pastorelli 1993; Del Barrio et al., 2001). This scale measures the lack of self-control in social context as a result of poor ability to restrain impulsivity and emotionality. It includes 20 items (e.g., I help my classmates to do their homework). In this study, internal consistency was acceptable (pre-intervention α = .68; follow-up α = .72).

Depressive symptomatology (Adolescent report) (Children's Depression Scale, CDS, Lang & Tisher 2014). CDS was applied to measure adolescents' depression symptoms, for which three subscales were selected (affective response, social problems and self-esteem) with 24 items (e.g., I often feel lonely). In the current study, internal consistency was excellent (pre-intervention α = .93; follow-up α = .97).

Empathy (Parent and adolescent reports) (Interpersonal Reactivity Index IRI, Davis 1980; Spanish adaptation, Pérez-Albéniz et al., 2003). This scale measures four dimensions of dispositional empathy, but in this study only two subscales were used: the Empathic Concern (7 items) measures emotional empathy, or feelings of compassion for others in distress (e.g., I would describe myself as a fairly sensitive person); and the Perspective Taking (9 items) measures cognitive empathy, or the tendency to see the world from others' viewpoints (e.g., Before criticizing someone, I try to imagine how I would feel if I were in their place). Internal consistency was acceptable for overall (pre-intervention α = .79; follow-up α = .77) and for empathic concern (pre-intervention α = .73; follow-up α = 0.71). However, perspective taking showed alpha coefficients slightly lower (pre-intervention α = .69; follow-up α = .68).

Satisfaction with life (Parent and adolescent reports) (SWLS, Diener et al., 1985; Spanish adaptation by Atienza et al., 2000). The scale consists of five items (e.g., I am satisfied with my life) against which participants must signal their level of agreement or disagreement on a 5-point Likert-type scale. Internal consistency of this instrument overall was excellent (pre-intervention α = .84; follow-up α = .89).

Family conflict (Parent and adolescent reports) (Family Environment Scale, FES; Moos & Moos 1981; Spanish version, TEA Ediciones 1984). Items of the subscale on family conflict (the amount of openly expressed anger and conflict among family members) were selected (e.g., In our family

we fight a lot). This subscale contains 9 items with a true/false response format. The internal consistency was acceptable considering that this scale has reverse score items (pre-intervention α = .67; follow-up α = .68).

Socio-demographic data and mental health problems (Parents and adolescent reports). A questionnaire was applied to assess socio-demographic variables (sex, age and country of origin) of the children and parents. Moreover, parent reports included other characteristics such as family structure, parental education level (none, compulsory education, further education/job training or university), and family income.

Procedure

The design and conduct of the study, including the questionnaire, were examined and approved by the Ethics Commission of the University of the Basque Country UPV/EHU (M10-2019-142). The staff of the municipal social services contacted the families for their possible participation in the program. Parents provided their informed consent and that of their children before participation in this program. Moreover, children signed their informed consent. The evaluations were performed in a large room in which a physical distance between the participants was ensured to guarantee privacy. The data of all participants were used anonymously. The evaluation protocol was applied by psychologists not connected with the intervention and trained by the research team to conduct the evaluation. They were not aware of the hypotheses and study variables. In the pre-intervention evaluation, each family was called, while in the post-intervention and follow-up evaluation they were called by work group (adolescents and parents). The implementation of the program was carried out in five intervention groups carried out at five time points between March 2017 and October 2020.

Data Analysis

Participants who did not finish the program with a minimum attendance of 62% ($n = 15$) or did not complete two evaluation protocols (pre-intervention and follow-up evaluation) ($n = 23$) were excluded from data analysis. Thus, the data analyses were carried out with 63 participants (18 adolescents and 45 parents, of which 16 were fathers and 29 were mothers). The response rate for pre-intervention was 100%, as could be expected, but follow-up rate was somewhat lower (87%).

Data derived from clinically relevant research on psychological practices should be based on reasonable effect sizes, statistical and clinical significance (APA, 2006). All statistical analyses were performed with the IBM SPSS Statistics 27 statistical package. No treatment of missing values was made. First, basic assumptions were tested for *t*-test analyses of related samples (sufficient number of observations, normal distribution, equal variances). In order to evaluate long-term effects, the pre-intervention and follow-up data were compared by applying paired-samples *t*-test, and the effect size for a paired-samples *t*-test was calculated. Effect sizes (Cohen's *d*) are interpreted as small, medium and large effect (0.20, 0.50, and 0.80) (Cohen, 1988). The process of defining clinical significance remains a challenge. Distribution-based methods are used to evaluate clinical relevance (Armijo-Olivo et al., 2011) and are based on the statistical distribution and the psychometric properties of the outcomes, such as the effect size or Reliable Change Index (RCI). RCI is a common method for evaluating the statistical reliability of a difference score between two observations from the same individual and is widely applied to determine clinically significant change in mental health and behavioral outcomes (Ferguson et al., 2002). This index was originally formulated by Jacobson et al. (1984) and revised by Christensen & Mendoza (1986):

$$\mathrm{RCI} = \frac{(X_2 - X_1)}{\sqrt{2\left[S_1\sqrt{1-r_{xx}}\right]^2}}$$

Where X_1 and X_2 are the observed outcomes for one individual at times 1 and 2; r_{xx} is a reliability coefficient (α_1); and S_1 is a standard deviation. The entire denominator is also called the standard error of the difference score. A score of at least |1.96| indicates that the individual change is statistically significant with 95% confidence; that is, it was unlikely to be due to measurement error.

Results

Results at Group Level

Children: Youth-to-parent Aggression, Clinical Symptoms and Family Conflict

Information regarding YPA is based on parent report while the information of rest of variables corresponds to child report. As shown in Table 3, the decrease between pre-intervention and follow-up was significant for: physical aggression toward father and/or mother ($t = 2.90$, $df = 44$, $p = .003$), psychological aggression toward father and/or mother ($t = 6.26$, $df = 44$, $p < .001$), depressive symptomatology ($t = 3.40$, $df = 17$, $p = .003$), irrational beliefs ($t = 3.33$, $df = 17$, $p = .004$), emotional instability ($t = 3.46$, $df = 17$, $p = .003$) and family conflict ($t = 2.43$, $df = 17$, $p = .026$). In addition,

Table 3 Mean comparisons between pre-intervention and follow-up evaluations for psychological variables of children, with standard deviation in parentheses

Variables	Pre-intervention	Follow-up	*t*	*d*
Youth-to-parent aggression [a]	2.52 (0.56)	2.17 (0.82)	2.60*	0.89
Physical aggression father [a]	1.71 (0.75)	1.44 (0.64)	1.32	0.33
Physical aggression mother [a]	1.85 (0.65)	1.46 (0.64)	2.61*	0.48
Phy. agg. both parents [a]	1.65 (0.35)	1.30 (0.30)	2.57*	0.30
Phy. agg. father and/or mother [a]	1.80 (0.71)	1.45 (0.65)	2.90**	0.43
Psychol. aggression father [a]	3.04 (0.59)	2.16 (0.70)	3.40**	1.20
Psychol. aggression mother [a]	3.34 (0.59)	2.53 (0.69)	4.44**	0.82
Psy. agg. both parents [a]	2.37 (0.46)	2.00 (0.71)	2.37*	0.35
Psy. agg. father and/or mother [a]	3.23 (0.60)	2.40 (0.77)	6.26***	0.93
Depressive symptomatology	2.26 (0.74)	1.80 (0.78)	3.40*	0.80
Self-esteem	2.49 (0.89)	1.92 (0.89)	3.08*	0.73
Affective response	2.06 (0.78)	1.96 (0.66)	2.63*	0.62
Social problems	2.24 (0.80)	1.79 (0.92)	2.60*	0.61
Irrational beliefs	2.51 (0.45)	2.21 (0.46)	3.33**	0.79
Need for approval	2.12 (0.81)	2.04 (0.70)	0.57	0.13
Helplessness	2.54 (0.58)	2.25 (0.48)	2.28*	0.54
Blame proneness	3.43 (0.57)	3.03 (0.88)	1.66	0.39
Avoiding problem	2.35 (0.74)	2.03 (0.73)	1.85	0.44
Intolerance frustration	2.94 (0.89)	2.59 (0.79)	1.26	0.30
Justification use violence	2.17 (0.75)	1.83 (0.69)	2.45*	0.58
Emotional instability	2.86 (0.63)	2.48 (0.59)	3.46**	0.52
Empathy	3.15 (0.73)	3.27 (0.85)	-3.40	-0.45
Empathic concern	3.12 (0.88)	3.31 (0.73)	-1.60	-0.21
Perspective taking	3.17 (0.80)	3.40 (0.77)	-1.40	-0.39
Satisfaction with life	2.81 (0.75)	3.27 (0.85)	-3.40**	-0.43
Family conflict	5.44 (2.04)	4.28 (2.16)	2.43*	0.57

Note: [a]: All measures regarding youth-to-parent aggression are based on parent report (fathers $n=16$; mothers $n=29$) while that the rest of variables are based on child report ($n=18$); Phy. agg.: Physical aggression; Psy. Agg.: Psychological aggression; *: $p<.05$; **: $p<.01$; ***: $p<.001$

Table 4 Mean comparisons between pre-intervention and follow-up evaluations for psychological variables of parents and their family environment perception, with standard deviation in parentheses (n = 45)

Variables	Pre-intervention	Follow-up	*t*	*d*
Aggressive discipline	2.27 (0.51)	1.63 (0.45)	7.99***	1.19
Corporal punishment	1.69 (0.46)	1.24 (0.38)	5.36***	0.80
Psychological agression	2.85 (0.69)	2.02 (0.67)	7.51***	0.79
Clinical symptoms				
Depressive symptomatology	2.26 (0.51)	1.87 (0.45)	4.09**	0.61
Psychological inflexibility	2.71(0.82)	2.40 (0.73)	3.42*	0.52
Empathy	3.52 (0.42)	3.66 (0.39)	-2.36*	-0.43
Empathic concern	3.70 (0.58)	3.76 (0.60)	-0.64	-0.12
Perspective taking	3.35 (0.51)	3.56 (0.46)	-2.481*	-0.45
Satisfaction with life	2.66 (0.93)	2.93 (0.99)	-2.24*	-0.33
Family conflict	4.80 (2.05)	3.24 (1.84)	5.79****	0.86

Note:*: $p<.05$; **: $p<.01$; ***: $p<.001$

adolescents showed significantly more satisfaction with life (t = -3.40, df = 17, p = .003), but empathy did not reach significance (t = -1.98, df = 17, p = .064). The effect sizes for adolescents ranged from a large effect for clinical symptoms such as psychological aggression toward father and/or mother (d = 0.93), depressive symptomatology (d = 0.80), or irrational beliefs (d = 0.79), to a medium effect for family conflict (d = 0.57), emotional instability (d = 0.52), empathy (d = -0.45), and satisfaction with life (d = -0.43).

Parents: Aggressive Discipline, Clinical Symptoms and Family Conflict

The decrease between pre-intervention and follow-up (see Table 4) was significant for aggressive discipline (t = 7.99, df = 44, $p<.001$), depressive symptomatology (t = 4.09, df = 44, $p<.001$), psychological inflexibility (t = 3.42, df = 43, p = .02), and family conflict (t = 5.79, df = 44, $p<.001$). In addition, parents showed significantly more empathy (t = -2.36, df = 44, p = .025), and satisfaction with life (t = -2.24, df = 44, p = .030). A large effect was found for aggressive discipline (d = 1.19) and family conflict (d = 0.86). In general, the effect sizes of parent outcomes were medium: depressive symptomatology (d = 0.61), psychological inflexibility (d = 0.52), empathy (d = -0.43) and life satisfaction (d = -0.33).

Table 5 Evolution at individual level in YPA, aggressive discipline and depressive symptomatology according to Reliable Change Index

Variables	Positive effect	No development	Negative effect
Adolescent behavior			
Physical YPA father	2 (13%)	14 (86%)	0 (0%)
Physical YPA mother	5 (17%)	22 (76%)	2 (7%)
Psychological YPA father	8 (50%)	8 (50%)	0 (%)
Psychological YPA mother	15 (52%)	13 (45%)	1 (3%)
Depressive symptomatology[a]	10 (56%)	8 (44%)	0 (0%)
Parent behavior			
Corporal punishment	29 (64%)	12 (27%)	4 (9%)
Psychological aggression	23 (51%)	22 (49%)	0 (0%)
Depressive symptomatology	22 (49%)	20 (44%)	3 (7%)

Note: [a]: The measure is based on child report, while the rest of variables are based on parent report

Results at Individual Level

Table 5 shows the evolution in clinical status between T1 (pre-intervention) and T3 (follow-up) of the adolescents and parents who made significant progress. Physical youth-to-father aggression decreased significantly for 13% but did not change for 86%. Physical youth-to-mother aggression decreased significantly for 17% but did not change for 76%. However, more improvements were observed in psychological youth-to-mother (52%) and youth-to-father aggression (50%). The changes in depressive symptomatology were significant for 56% of adolescents and 49% of parents.

Clinically relevant changes in parents ($n=45$) were observed. Specifically, in 29 parents (64%), there was a significant decrease in corporal punishment, while in 15 parents (27%) there were no significant changes, and there was an increase in this type of violent behavior in 4 parents (9%). In addition, psychological aggression decreased significantly in 23 cases (51%), and remained unchanged in 22 cases (49%).

Discussion

The EI-YPA program is directed at children with an elevated risk of developing adolescent aggression toward one parent. The main purpose of this study was to obtain evidence of long-term effects of the EI-YPA program (Ibabe et al., 2019) on the outcome variables of adolescents and parents. The evaluation of EI-YPA showed promising results, both at group and at case level.

The hypothesis that YPA directed at fathers and/or mothers would decrease one year after starting the program was confirmed for psychological aggression toward parents with a large effect ($d=0.93$). However, physical aggression toward parents showed a medium effect size ($d=0.43$). A large percentage of children presented no clinical changes with respect to physical aggression toward father (86%) or aggression toward mother (87%). Physical aggression might be more difficult to change than psychological YPA for two reasons. First, the level of physical aggression was low in the pre-intervention assessment due to the program being for early intervention, with serious physical aggression to one parent a criterion for exclusion. Second, the cases that evolve towards greater severity were referred to YPA intervention program, which depends on another service.

Previous studies on evaluations of EI-YPA have also shown short-term effects are more relevant in psychological YPA than physical YPA (Arnoso et al., 2021; Asla et al., 2020; Ibabe et al., 2018, 2021). This finding is important because the target of this program is YPA, the number of participants of the present study is higher and long-term effects are explored. All studies evaluating the EI-YPA program show that there is evidence in favor of the decrease of YPA, but physical aggression toward fathers could be more difficult to change; at least the evidence is not clear and a larger sample size is required. Moreover, at individual level, clinically relevant changes were found for physical aggression (toward fathers 13%, toward mothers 17%) and psychological YPA (toward fathers 50%, toward mothers 52%).

As hypothesized, adolescents showed a lower level of clinical symptoms and irrational beliefs, as well as higher empathy and life satisfaction. At group level, statistically significant reductions were found in some internalizing behaviors, with effect sizes ranging from large (depressive symptomatology $d=0.80$; irrational beliefs $d=0.79$) to medium (emotional instability, $d=0.52$), but empathy (d = -0.45) and satisfaction with life (d = -0.43) showed an increase with medium effect sizes. All these results indicate an improvement of the well-being of adolescents. At individual level, these were mostly clinically relevant, ranging from 13 to 56% of adolescents with no negative effect in any indicator. These results are consistent with the results of previous studies on EI-YPA (Ibabe et al., 2018, 2021), but two indicators (emotional instability and life satisfaction) obtained one year efficacy. Moreover, as expected, physically and psychologically aggressive discipline by fathers and mothers decreased with a large effect ($d=1.19$), which was clinically relevant for 64% (corporal punishment) and 51% (psychological aggression) of parents, respectively. Although in a previous evaluation of EI-YPA (Arnoso et al., 2021) a large effect was found, clinical relevance was not analyzed.

As expected, mothers and fathers presented a lower level of clinical symptoms and higher empathy, in line with previous evaluation reports of EI-YPA (Arnoso et al., 2021; Ibabe et al., 2018). At group level, the effect sizes of parent

outcome were medium, from depressive symptomatology ($d = 0.61$) to empathy ($d = -0.43$). Psychological inflexibility is a new clinical symptom which improved in the present study ($d = 0.52$), as well as satisfaction with life ($d = -0.33$). At the same time, as was hypothesized, the family conflict perception of all family members was significantly lower at follow-up evaluation, with large effect size ($d = 0.86$). This result is consistent with previous studies, which showed evidence of decreasing family conflict in post-intervention evaluation (Ibabe et al., 2018, 2021) and in follow-up evaluation based on parent sample (Arnoso et al., 2021).

The results indicate that externalizing symptoms of parents (aggressive discipline) were reduced more than children's externalizing symptoms (YPA) at group level, potentially improving family environment perception, and thus reducing family conflict perception. There is substantial empirical evidence regarding the effect of negative parental discipline practices on YPA (Cano-Lozano et al., 2022; Ibabe & Bentler, 2016). Moreover, there is evidence supporting a one-year effect of family conflict perception of parents and children, while previous studies also informed that family relationships improve during participation in EI-YPA (Asla et al., 2020; Ibabe et al., 2021).

In general, most effect sizes in the present study are very promising, taking into account the meta-analyses, which show effect sizes situated around 0.40 for psychological, educational, and behavioral intervention programs (Bartels et al., 2001), and 0.50 in effective interventions for serious juvenile offenders (Lipsey & Wilson, 1998). According to the effect sizes found, EI-YPA has a large effect on three outcome variables of adolescents (psychological aggression toward parents, depressive symptomatology, and irrational beliefs), and a medium-effect on emotional instability, empathy, and satisfaction with life.

Differences at a mean group level do not answer the clinical question of identifying the extent to which individuals can be expected to reliably improve or deteriorate (Barker-Collo & Purdy, 2013). In the present study changes were analyzed at an individual level at the 6-month follow-up. Participants tended to have better performance, showing less violent behavior and depressive symptomatology at the 6-month follow-up, consistent with the improvement reported at group level. Percentages of participants who had reliable positive changes were not very high (from 13 to 64%), but these results may be explained because RCI is a more conservative method than others (Barker-Collo & Purdy, 2013). The RCI type I error control could be too conservative for clinical practicality, and some authors have advocated using less extreme values than 1.96 (Donaldson, 2008; Wise, 2004).

Limitations and Future Directions

The main limitation is the absence of an equivalent control group. However, this fact does not invalidate the results obtained in the present study for two reasons. First, different types of dependent variables (behavioral, emotional and family environment) have been measured at three key moments (pre- and post-intervention, and follow-up). Second, information from different sources (adolescents, mothers and fathers) is shown because this program meets the needs of adolescents, parents and the family system.

The potential experimenter bias could be another limitation of the study because evaluators knew the experimental condition of participants and this fact could intentionally or unintentionally affect results in the study. Moreover, all assessment instruments were homogenized to a five-point Likert scale. Although this fact could alter the psychometric properties of these assessments, in this case the tools are still valid for three reasons. First, the results based on data simulated using the Monte Carlo method show that as the optimum number of alternatives between four and seven, as well as the number of response alternatives in Likert-type scales increases, both reliability and factorial validity improve (Lozano et al., 2008). Second, it is advisable to complement the psychometric criterion with the discriminative capacity of participants because if too many alternatives are offered, there is a greater likelihood of new measurement errors being introduced (Lozano et al., 2008). Third, of the 10 tools used in the current study, four tools originally had less than five-point Likert scales (2, 3, 3 and 4 response alternatives), while two had more than five options (7 and 10 response alternatives), with the rest having five-point Likert scales.

Although some internal consistency coefficients do not reach the desired level ($\alpha \geq .70$), the use of these measures was justified. The insufficient level of the internal consistency coefficient for Physical Youth-to-Parent Aggression might be due to the small number of scale items (3 items) while in the case of Family Conflict and Interpersonal Reactivity Index it might be due to the existence of inverse items. Additionally, a five-point Likert scale is usually considered quite sufficient to generate a reasonably reliable indication of response direction (Frary, 2003). Furthermore, RCI is used as a clinically significant criterion applying statistical criteria to establish cut scores for continuous variables, where an RCI equal to or greater than $|1.96|$ ($p < 0.05$) indicates a reliable change. However, other studies (Molinari et al., 2018) also examine if the post-intervention score falls within the functional population on the variable of interest. Unfortunately, most of the outcomes used in the present study lack "normative or reference values" to establish "normality" of health status.

These limitations notwithstanding, the present study has the strength of being a pioneering program which has the most positive evidence of all evaluation studies in early intervention in a child and family services context. In future studies, it would be useful to check whether these results are confirmed with a control group avoiding the experimenter bias, as well as showing more indicators of clinical relevance of observed changes. Future research could study why this program works, checking the underlying assumption that EI-YPA decreases YPA by applying the theory of change. The theory of change is useful for identifying the core program components, mechanisms of action/change, and the short- and long-term outcomes of the program aims to change (Weiss, 1995). A good theory of change can help to pose evaluation questions and direct data analysis and reporting. Although there have been calls for research on the specific components of child and family therapy that contribute to change (Huey et al., 2000; Kazdin, 1997), little empirical work has been conducted in this area (Mestre et al., 2022). Thus, it would be interesting to identify the mechanisms through which EI-YPA produces favorable outcomes among adolescents, parents and families. The explanation of the mechanisms of change would allow researchers to advance in the evaluation of this program, as well as in the intervention itself because some strategies can be reinforced more than others.

Conclusion

Conclusions about intervention efficacy should be interpreted with caution because the sample size of adolescents is small, and a randomized groups design could not be applied. However, the present research has several strengths. Data were based on the self-reports of adolescents, mothers, and fathers, and diverse variables of participants were also assessed to evaluate the potential one-year effects of the program. At long-term follow-up, children and parents in the program presented less aggressive behavior, clinical symptoms, and family conflict, which in turn will contribute to improving family relationships. Thus, in the future family members could show more respectful and prosocial behavior in the family environment and YPA will be less likely.

In this study, all the changes of participants found long-term at group and individual levels (clinical significance in the investigation of therapeutic results) would indicate positive one-year effects of the program. This would mean that the changes of participants' knowledge, attitudes and behaviors did not happen by chance and are sustainable after program participation. Thus, this program can be recommended for families in YPA situations. Although more studies are needed, EI-YPA conducted in a setting of social services can guide practitioners to help parents and children avoid being drawn into cycles of negative interactions. As indicated, interventions to respond early to YPA and responses outside of the criminal justice setting are needed.

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Declarations

Conflict of Interest The authors declare that they have no conflict of interest.

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