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The psychological treatment of sexual abuse in children and adolescents: A meta-analysis

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ABSTRACT. By means of a meta-analytic review, the current study investigated the efficacy of the psychological treatment of children and adolescents that have suffered sexual abuse. Thirty-three articles met our selection criteria and, using the group as the analysis unit, the meta-analytic database was composed of 44 treatment groups and 7 control groups. The effect size index was the standardized mean change between the pretest and the posttest means, and it was separately applied for different outcome measures (sexualised behaviours, anxiety, depression, self-esteem, behaviour problems, and other outcomes) and assessment methods (child self-reports, parent reports, and clinician assessments). For all of the outcome measures, the mean effect size for the treatment groups was statistically and clinically significant, whereas the control groups did not achieve a significant improvement. Significant differences among the various psychological treatment approaches were found for the global outcome measure, sexualised behaviours, and behaviour problems. In general, trauma-focused cognitive-behavioural treatments combined with supportive therapy and a psychodynamic element *(e.g.,* play therapy) showed the best results. Finally, the implications for clinical practice and for future research of the results in this field are discussed.

KEYWORDS. Child and adolescent sexual abuse. Psychological treatment. Outcome evaluation. Meta-analysis.

RESUMEN. Mediante una revisión meta-analítica, este estudio investigó la eficacia de los tratamientos psicológicos para niños y adolescentes que han sufrido abuso sexual. Los criterios de selección fueron cumplidos por 33 artículos con los que, utilizando el

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grupo como unidad de análisis, se identificaron 44 grupos de tratamiento y 7 grupos de control. El índice del tamaño del efecto fue el cambio estandarizado entre las medias del pretest y del postest, y se calculó éste por separado para diferentes medidas de resultado (conductas sexualizadas, ansiedad, depresión, autoestima, problemas de conducta y otras medidas). El tamaño del efecto medio para los grupos tratados fue estadística y clínicamente significativo con todas las medidas de resultado. Se obtuvo eficacia diferencial entre los distintos tratamientos para el promedio global, las conductas sexualizadas y los problemas de conducta. En general, los tratamientos cognitivo-conductuales centrados en el trauma combinados con terapia de apoyo y algún elemento psicodinámico (*e.g.,* terapia de juego) obtuvieron los mejores resultados. Por último, se discuten las implicaciones clínicas y para la investigación futura de nuestros resultados en este campo.

PALABRAS CLAVE. Abuso sexual infantil y adolescente. Tratamiento psicológico. Evaluación de resultados. Meta-análisis.

Child sexual abuse can be considered an activity aimed at providing sexual pleasure, stimulation or gratification to an adult, who uses a child for this purpose, taking advantage of their dominant position. It is also considered to be sexual abuse when there are circumstances of asymmetry between the victim and the aggressor, which constitute a difference of approximately five years when the child is younger than 12 years old, and ten years if he or she is over 12; when there is asymmetry of power, as the offender controls or has some kind of authority over the victim; when there is knowledge or social skills asymmetry, which involves the aggressor using his or her astuteness and manipulation skills, the abuse between minors being included in this category; and when gratification asymmetry exists, through which the child is pressurized in a subtle way (presents, trips, *etc.*) so that he or she gives in to the abuse (Saywitz, Mannarino, Berliner, and Cohen, 2000).

Studies of the incidence and prevalence of child and adolescent sexual abuse tend to produce very disparate results (Echeburúa and Subijana, 2008; Ortega, Sánchez, Ortega-Rivera, Nocentini, and Menesini, 2010). According to retrospective parent reports, around 20% of women and 5-10% of men have suffered sexual abuse during childhood and adolescence (Finkelhor and Berliner, 1995). With regards to the type of abuse, intrafamilial abuse is usually suffered by a greater number of girls, with a young age of commencement (7-8 years), whilst extrafamilial abuse is suffered more often by boys, with an age of commencement of around 11-12 years. Incest tends to occur in secrecy and only 2% of cases are discovered whilst they are occurring. It is estimated that only 50% of sexual abuse in children is revealed, 15% of cases are reported and 5% are resolved in court. Moreover, heterosexual men of all ages are more likely than women to abuse a minor (Bonner, 2003).

With regards to the sequelae of abuse for the child, the traumagenic model (Finkelhor and Browne, 1986) considers that the symptomatology displayed by the child is associated with the following variables: a) Traumagenic beliefs about sexuality (interference that the abuse effects on the child's sexual development), b) a feeling of betrayal towards

the aggressor caused by the abuse and a generalization of the child's feelings towards adults, c) a feeling of stigma that comes from the self-blame and shame linked to the experience of abuse and that can influence the child's self-image and self-esteem, and, lastly d) a feeling of powerlessness caused by the child's lack of control and the impossibility to put a stop to the abuse, creating an attitude of withdrawal and passivity and increasing his or her vulnerability to suffering further abusive sexual experiences.

In the majority of cases the sexual abuse causes numerous negative sequelae on the physical, psychological and behavioural levels. With regards to the gravity of the symptoms, Saywitz *et al.* (2000) distinguish between four levels of seriousness: a) Children in whom the relevant symptoms are not detected with the usual psychological assessment instruments; b) children who show a few symptoms which are not actually clinical (emotional stress, anxiety, low self-esteem, *etc.*) or the behavioural problems that they display are minor; c) children with serious psychiatric disturbances such as depression, anxiety, sexualised behaviours, drug abuse, aggression, low self-esteem, sexual identity problems, and d) children who fulfil the criteria of psychological disorders, the most frequent being post-traumatic stress disorder (PTSD), followed by major depression, anxiety disorders, sleep disorders, *etc.*

The treatment of child sexual abuse

Therapeutic approaches that have been researched scientifically for treating children who are victims of sexual abuse come from various different psychological models. Of all of these, the treatments that have been the subject of the most research are those based on the cognitive-behavioural model (CBT), and specially trauma-focused CBT developed and evaluated by Berliner and Saunders (1996), Cohen and Mannarino (1996) and Deblinger, Lippmann, and Steer (1996). In their research into the programs used to treat the sequelae of sexual abuse in children, Saunders, Berliner, and Hanson (2004) consider the CBT model to be the only empirically-supported treatment. This treatment deals with the four traumagenic dynamics: traumatic sexualisation, stigmatization, a feeling of powerlessness and a feeling of betrayal (Cohen and Mannarino, 1997). The intervention with the child consists of various techniques, amongst which are included coping skills training, gradual exposure, processing traumatic memories and reminders, and education about child sexual abuse, healthy sexuality and personal body safety skills training. Together with this treatment protocol, others have been used, which include cognitive-behavioural techniques. Thus, Jaberghaderi, Greenwald, Rubin, Zand, and Dolatabadi (2004) used the program of Eye Movement Desensitization Reprocessing (EMDR) on a treatment group, whilst other authors combine different cognitive-behavioural techniques (King *et al.,* 2000).

From the psychodynamic model, programs based on psychodrama (MacKay, Gold, and Gold, 1987) and play therapy (Scott, Burlingame, Starling, Porter, and Lilly, 2003) have been used. From the humanistic model the most used treatments were those based on client-centered therapy, which main aim is to empower the self-awareness and self-reliance of the child (Bagley and LaChance, 2000). Support programs have also been applied to the child and family, offered routinely by the Child and Family Protective Services (McGain and McKinzey, 1995). Eclectic approaches have also been used, their

techniques coming from different theoretical orientations (*e.g.,* Kruzeck and Vitanza, 1999; Lanktree and Briere, 1995).

There is currently a large number of empirical studies that have evaluated the efficacy of diverse psychological treatments for child sexual abuse, which results are not consistent. Some of the qualitative reviews carried out in this context indicate that the non-behavioural approaches have not been evaluated correctly, (psychodynamic therapy, supportive therapy, humanistic therapy, *etc.*), since the active principles are difficult to manualise and standardise (Saywitz *et al.*, 2000). Within the behavioural approach, abuse-specific CBT is considered effective for the treatment of anxiety, depression and behavioural problems in children and adolescents. In other literature review, Kolko (1987) indicated that art therapy and individual supportive therapy are the most effective due to the fact that they encourage the expression of emotional reactions to the experiences of abuse. In another literature review, Silovsky and Hembree-Kigin (1994) affirm that family therapy and group therapy were more effective than individual therapy. More recently, and focused on abused children with PTSD, King *et al.* (2003) present cognitive-behavioural techniques as the most indicated for treating this problem, considering the interventions received to be those with the best empirical support.

Previous meta-analyses on child sexual abuse

To our knowledge, five meta-analyses have been published about the efficacy of the psychological treatment of sexual abuse in children and adolescents. The first was that of Reeker, Ensing, and Elliott (1997), which focused on the benefits of group treatment as a cost-effective strategy to help children and adolescents that had been sexually abused. Reeker *et al.* (1997) identified 15 studies that met their inclusion criteria and they applied the standardised mean difference between the pretest and the posttest means as the effect size index. This effect size index was calculated separately for the parent reports and for the child self-reports, and for six different outcome variables: general psychological distress, internalizing symptoms (depression, anxiety, fears), externalizing symptoms (conduct disorders), self-esteem, sexual behaviours, and knowledge of sexual abuse/prevention. The overall effect size for all of the outcome measures was $d = .79$, and there were no differences between the parent and child reports ($d = .75$ and .74 respectively). The mean effect sizes for the different outcome variables were, in order of magnitude: knowledge of sexual abuse / prevention ($d = .99$), self-esteem ($d = .88$), sexual behaviours ($d = .77$), general psychological distress ($d = .73$), internalizing symptoms ($d = .64$), and externalizing symptoms ($d = .56$). Finally, a trend of larger effect sizes was found for groups comprised exclusively of females.

The second meta-analysis was carried out by Skowron and Reinemann (2005) and it was focused not only on child sexual abuse, but also other types of child maltreatment (physical abuse, physical neglect and general maltreatment). Their selection criteria were stricter than those of Reeker *et al.* (1997), as the studies had to include a control group. The effect size was the standardised difference between the means of the treatment and control groups in the posttest.

The seven studies that used samples of children and/or adolescents that had been sexually abused obtained a mean effect size of $d = .69$, which was statistically significant.

Skowron and Reinemann (2005) did not find significant differences between the effect sizes obtained with the different treatment modalities: individual treatment ($d = .39$), group treatment ($d = .69$), family treatment ($d = .28$), and multilevel treatment ($d = .64$).

Macdonald, Higgins, and Ramchandani (2006) carried out a meta-analytic review about the efficacy of the cognitive-behavioural treatments for children and adolescent victims of sexual abuse. The inclusion criteria were very restrictive, requiring that the studies included a CBT group and a control group (active or nonactive) or a treatment as usual group. As a consequence, their meta-analysis only integrated 10 studies. The effect size index was the difference between the standardised pretest-posttest mean change for the two groups (CBT *vs.* comparison group). They found a significant improvement with CBT in comparison to the control group only for depression measures (unstandardised mean difference = 1.80), PTSD symptoms ($d = .43$), and anxiety measures ($d = .21$). On the contrary, they did not find a significant improvement with CBT for sexualised behaviours (unstandardised mean difference = .65) or for externalizing outcomes ($d = .14$). Due to the scarce number of studies included, they did not conduct moderator analyses. Macdonald *et al.* (2006) concluded that trauma-focused CBT may have a positive impact on the psychological well-being of children and adolescents who have been sexually abused, but the evidence is based on studies that are methodologically flawed.

Like Reeker *et al.* (1997), Hetzel-Riggin, Brausch, and Montgomery (2007) focused exclusively on child sexual abuse and used the standardised mean difference between the pretest and the posttest as the effect size index, but unlike Reeker *et al.* (1997) and Macdonald *et al.* (2006) they covered all types of treatments for child sexual abuse. Hetzel-Riggin *et al.* (2007) integrated 28 studies published between 1975 and 2004, giving 104 pretest-posttest comparisons (94 treatment groups and 10 control groups). They obtained an overall effect size of $d = .74$, statistically larger than that of the control groups, $d = .46$, and very similar to that of Reeker *et al.* (1997) for group treatment. In decreasing order of magnitude, the different outcome measures obtained the following mean effect sizes: behaviour problems ($d = 1.60$), other measures ($d = 1.49$), psychological distress ($d = 1.05$), self-concept ($d = .71$), and social functioning ($d = .48$). Averaging all of the outcome measures, the best results were for cognitive-behavioural treatments ($d = .88$), play therapy ($d = .88$), supportive treatment ($d = .87$), group treatment ($d = .85$), and abuse-specific treatment ($d = .81$). Lower effects were found for family therapy ($d = .62$) and other treatments ($d = .32$).

Hetzel-Riggin *et al.* (2007) concluded that different treatments were more effective than others depending on the outcome measure. Thus, for behaviour problems the best results were with abuse-specific therapy, supportive therapy, and group therapy; for psychological distress CBT and individual treatment were found to be the best; self-concept was most improved by CBT, abuse-specific therapy, and group therapy; and for social functioning, play therapy gave the best results. Neither the age nor gender of the sample affected the treatment effectiveness, but ethnicity did affect the effect sizes, showing better results as the proportion of non-Caucasian people in the sample increased. Moreover, better results were found as the percentage of children in the sample that had suffered intra-familial sexual abuse decreased. Finally, a positive

relationship was found between the duration of the treatment and the effect size, and there was a null relationship with the design quality of the studies.

More recently, Corcoran and Pillai (2008) have published a meta-analysis to examine the efficacy of psychological treatments that involve both the child and non-offending parents. In their literature search they were able to recover seven studies, published between 1980 and 2005, that compared a parent-involved treatment with a control or comparison group. They calculated the standardised mean difference between the two groups in the posttest for internalizing symptoms, externalizing symptoms, sexualised behaviours, and post-traumatic stress symptoms. The mean effect sizes obtained were, respectively, $d = .41, .32, .31,$ and $.36$. Due to the scarce number of studies that met the selection criteria, moderator analyses were not carried out. Corcoran and Pillai (2008) concluded that, in general terms, parent-involved treatment confers a small but statistically significant advantage over comparison conditions.

The goals of our meta-analysis

The purpose of our investigation was to review the empirical evidence, by applying meta-analysis, of the differential efficacy of the psychological treatment for children and adolescents that have suffered sexual abuse (Botella and Gambara, 2006; Montero and León, 2007). We were also interested in studying the influence of treatment, participant, and methodological variables on the effect sizes. As there are many studies that do not use a control group, we decided to include both studies with and without a control group in the meta-analysis and to define the group as the analysis unit, not the comparison between a treated and a control group.

Our meta-analysis does not coincide with any of the previous meta-analyses. Like both the meta-analysis by Reeker *et al.* (1997) and that of Hetzel-Riggin *et al.* (2007), our effect size index was the standardised mean difference between the pretest and posttest means of each group. In comparison with the meta-analyses by Reeker *et al.* (1997), Macdonald *et al.* (2006), and Corcoran and Pillai (2008), our scope was wider, as we were interested in all types of treatments, not just group treatment, CBT, or parent-involved treatments alone. Unlike the meta-analysis by Hetzel-Riggin *et al.* (2007), we excluded studies where the treatment was applied only to the parents and not to the children that had actually suffered the sexual abuse. And unlike the meta-analysis by Skowron and Reinemann (2005), we focused on sexual abuse and excluded other types of child maltreatment.

Furthermore, our meta-analysis includes some methodological improvements with respect to the previous ones. Firstly, we produced a more detailed classification of the outcome measures as a function of the psychological constructs measured (sexualised behaviours, anxiety, depression, self-esteem, behaviour problems and general adjustment, and other outcomes) and as a function of the type of measurement (child self-reports, parent assessments, and clinician assessments), and we calculated separate effect sizes for each one. Secondly, we carried out a more complete analysis of the potential moderator variables related with the treatment, subject, and methodological characteristics of the studies. Thirdly, we updated the previous meta-analyses up to the year 2006. Finally, like Macdonald *et al.* (2006) and Corcoran and Pillai (2008), we applied random-

and mixed-effects meta-analytic models, which are more realistic than the fixed-effects models applied in the previous meta-analyses.[2]

Method

Selection criteria of the studies

In order to be included in the meta-analysis, the studies had to fulfil the following selection criteria: a) the study had to apply any psychological treatment to a sample of children and/or adolescents (maximum age, 18 years old) that had suffered sexual abuse; b) the treatment could be directed at the child alone or at the child and the parents, tutors or all the family, but treatments that excluded the child were deleted; c) sexual abuse in the children had to be clearly detected by the children's services; d) the studies could include one or more treatment groups with or without a control group, but all of them had to include pretest and posttest measures; e) single-case designs were excluded, as it is not possible to obtain an effect size estimate in the same metric as that of the group studies; f) the study could be written in English, Spanish, French, Italian, or Portuguese; g) the study had to be published or finished between 1970 and 2006; h) the sample size in the posttest had to be of 5 or more subjects, and i) the study had to report the statistical data needed to estimate the effect sizes.

Search procedure

To identify the studies that could fulfil our selection criteria, we developed several search strategies. First, an electronic search was carried out on the databases PsycInfo and Medline in March of 2007, comprising the years 1970-2006. In the search the following key-words were combined: [(abuse) or (sexual trauma) or (maltreat*)] and {[(adolescen*) or (child*) or (young*)] and [(treat*) or (intervent*)] and [(postraumatic stress disorder) or (post-traumatic stress disorder) or (posttraumatic stress disorder)]}. The electronic search identified 2,720 references which abstracts were read in order to determine which of them could fulfil our selection criteria. Second, previous meta-

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[2] The consequences of assuming a random-effects model instead of a fixed-effects one concern the interpretation of the results and also the results obtained themselves. On the one hand, in a fixed-effects model it is assumed that the results can only be generalized to a population of studies that is identical to that of the individual studies included in the meta-analysis. However, in a random-effects model the results can be generalized to a wider population of studies. On the other hand, in a fixed-effects model the error attributed to the effect size estimates is smaller than in a random-effects model, which is why in the first model the confidence intervals are narrower and the statistical tests more liberal than in the second one. The principal consequence of assuming a fixed-effects model when the meta-analytic data come from a random-effects model is that we may attribute more precision to the effect size estimates than is really appropriate and that, in addition, we may find statistically significant relationships between variables that are actually spurious. In general, it is more reasonable to assume that the studies integrated in the meta-analysis differ among themselves by a uncountable number of characteristics and, as a consequence, it is more realistic to assume random- and mixed-effects models than fixed-effects ones (cf. Cooper, Hedges, and Valentine, 2009).

analyses on child sexual abuse or child maltreatment in general were reviewed (DeJong and Gorey, 1996; Hetzel-Riggin *et al.*, 2007; Macdonald *et al.*, 2006; Reeker *et al.*, 1997; Skowron and Reinemann, 2005), as well as the systematic reviews of Thomlison (2003) and Wolfe and Wekerle (1993), and several theoretical reviews on child sexual abuse. Third, we contacted several experts on sexual abuse, requesting papers (published or unpublished) that could fulfil our selection criteria. Finally, the references of the studies recovered were also revised.

The search procedure enabled us to select 33 papers that fulfilled the selection criteria producing a total of 51 groups of children (44 treatment groups and 7 control groups). The 51 groups gave a total of 1,141 in the posttest (1,037 participants in the treatment groups and 104 in the control groups). The majority of the studies were carried out in North America (41 of the 51 groups), followed by Europe (5 groups), Oceania (3 groups), and Asia (2 groups).

Taking into account the methodological improvements previously mentioned and the fact that our meta-analysis includes 11 studies not present in the most recent one (Hetzel-Riggin *et al.*, 2007), we can consider that our meta-analysis constitutes a relevant and original contribution to this field.

Coding of studies

In order to examine the influence of the characteristics of the studies on the effect sizes, treatment, participant, and methodological moderator variables were coded in the studies. The treatment characteristics coded were: a) the type of treatment (cognitive-behavioural trauma-focused treatment, play therapy, supportive therapy, psychodynamic therapy, and humanistic therapy); b) the treatment target (only the child, the child-non-offending caregiver pair, and the family); c) the use of manualised treatment; d) the type of training (individual, group, mixed); f) the therapist's experience (low, medium, high); g) the number of sessions; h) the treatment duration (number of weeks); i) the treatment intensity (number of hours per week), and j) the treatment magnitude (total number of hours).

The participant characteristics coded were: a) the mean age of the children (in years); b) the gender distribution in the sample (% male); c) the type of sexual aggression (% of children that suffered penetration); d) the relationship of the victim to the perpetrator (intrafamilial, extrafamilial); e) the ethnicity of the participants (% of Caucasians, Afro-Americans, Asians, Hispanics), and f) whether the children had been diagnosed with posttraumatic stress disorder (PTSD).

Finally, several methodological characteristics were coded: a) the recruitment methods of the children (from social services agencies, upon the researcher's request); b) the assignment method of the children to the groups (random versus non random assignment); c) the use or non-use of masked outcome evaluators; d) the use or non-use of intention-to-treat analyses; e) the comparison or non-comparison between dropouts and completers; f) the sample size in the posttest; g) the use of one or several therapists in the treatment (only one, several clinicians but not crossed among the treatments, and several clinicians

crossed among the treatments); h) the methodological quality of the design[3] (on a scale of 0 to 7 points, where the higher the score the greater the quality), and i) the percentage of attrition in the posttest.

In order to assess the reliability of the coding process, two researchers independently coded a random sample of the meta-analyzed studies (20%) by applying the norms detailed in a previously produced codebook. They reached kappa coefficients which were highly satisfactory on the whole: in all cases they were greater than .72 (mean kappa coefficient = .84). The codebook can be obtained from the corresponding author.

Computation of the effect size index

Due to ethical reasons, it is very common to find studies about the treatment efficacy for child sexual abuse that have not included a control group. This circumstance led us to define the group as the analysis unit and, as a consequence, to use as the effect size index the standardized mean difference, *d*, defined as the difference between the pretest and the posttest means divided by the standard deviation in the pretest (Cooper, Hedges, and Valentine, 2009). A positive *d* index meant that the mean in the posttest was better than that in the pretest.

The results for each study were classified as a function of the outcome measured: a) measures of sexualised behaviours and feelings or thoughts about sexual abuse; b) measures of anxiety and stress; c) measures of depression; d) measures of self-esteem and self-concept; e) measures of behaviour problems (*e.g.,* acting out, externalizing symptoms) and general adjustment, and f) other outcomes (*e.g.,* affective disorders, PTSD symptoms, loneliness symptoms, *etc*.). The different outcomes were also classified as a function of the type of measurement: child self-reports, parent assessments, and clinician assessments. All of the outcome measures referred to the child, that is, outcomes about the parents were excluded from our calculations. Thus, a *d* index was calculated for each one of the outcome measures resulting from combining 6 (psychological constructs) *x* 3 (types of measurement) = 18 combinations. Moreover, an average *d* index was also calculated for each psychological construct, for each type of measurement, and for all of the outcome measures. In total, in each study 28 *d* indices could be calculated. In all cases, the *d* index was calculated comparing the pretest and the posttest measurements, but when the study included a follow-up measurement we also calculated a *d* index comparing the means for the pretest and the largest follow-up reported. Therefore, additional 28 *d* indices in the follow-up could also be calculated in each study. This enabled us to assess the maintenance of the treatment effects along time.

The calculations of the effect sizes were also subjected to analysis of their reliability. They produced, on average, an intra-class correlation coefficient of .89 between the estimates obtained by two independent coders with a random sample (20%) of all the studies.

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[3] The quality scale takes into consideration such methodological items as random assignment, sample size, the presence of attrition, the use of blind evaluators, the comparison between dropouts and completers, the use of intention-to-treat analysis, and the use of one or several clinicians.

Statistical analysis

    For each combination of outcome measure and type of measurement, separate meta-analyses were carried out. In order to give more weight to the effect sizes with the larger sample sizes, each effect size was weighted by its inverse variance. In each meta-analysis and assuming a random-effects model, a weighted mean effect size was calculated, together with its statistical significance and confidence interval. Following Cohen (1988), effect sizes of .02, .50, and .80 were interpreted as representing an effect of small, medium, and large magnitude, respectively. The next step in the statistical analysis consisted of applying the heterogeneity Q statistic and the I^2 index, in order to examine if the individual effect sizes were homogeneous or not around the mean effect size. When the effect sizes showed heterogeneity, we then searched for moderator variables of the studies that could influence the effect sizes variability by assuming a mixed-effects model. With this purpose, we applied analyses of variance (for the categorical moderator variables) and weighted regressions (for the continuous ones). In both cases, the analysis consisted of testing the hypothesis of no influence on the effect sizes with the Q_B and the z statistics for the analyses of variance and for the meta-regressions respectively. Additionally, the model misspecification was tested by applying the Q_W and Q_E statistics for the analyses of variance and for the meta-regressions respectively Finally, and given that our meta-analysis did not include any unpublished studies, a study of publication bias was carried out.

    All the statistical analyses were carried out with the SPSS macros created by David B. Wilson and with the program Comprehensive Meta-analysis 2.0 (Borenstein, Hedges, Higgins, and Rothstein, 2005).

Results

Distribution of effect sizes

    Due to the great variability of the symptoms exhibited by children that have suffered sexual abuse, we carried out separate meta-analyses for each combination of outcome measure (sexualised behaviour, anxiety, depression, self-esteem, behaviour problems and general adjustment, and other outcomes) and type of measurement (child self-reports, parent assessments, and clinician assessments).

    Table 1 presents separately the weighted mean effect sizes obtained by the treatment and the control groups and as a function of the outcome measures and types of measurements. Out of the 44 treatment groups, the type of outcome measures most frequently reported were those referring to behaviour problems and general adjustment, with 35 groups (79.50%), followed by those of sexualised behaviours, with 27 groups (61.40%).

    The weighted mean effect size obtained for the global outcome measure in the 44 treated groups was $d_+ = .64$ and statistically significant. Following Cohen (1988), we can consider this mean effect size to be of medium magnitude and clinically relevant. On the contrary, the 7 control groups obtained a weighted mean effect size of only $d_+ = .08$, non-statistically significant and practically null.

The effect estimates varied, however, depending on the measurement instrument. Thus, the mean effect size for clinician assessments ($d_+ = 1.34$) was clearly larger than those of child self-reports and parent assessments ($d_+ = .52$ and $d_+ = .53$, respectively). This result was repeated in the sexualised behaviour measures, in anxiety measures, and in behaviour problems.

TABLE 1. Weighted mean effect sizes for the different outcome measures and types of measurements in the posttest, and separately for the treated and control groups.

Outcome measure	k	d_+	Treatment groups 95 percent C.I. dl	du	Z	p	k	d_+	Control groups 95 percent C.I. dl	du	Z	p
Sexualised behaviour												
Self-reports	22	.41	.83	.54	6.34	< .001	1	-.08	-.71	.55	-.24	.81
Parents	16	.41	.28	.53	6.40	< .001	1	.18	-.45	.81	.55	.58
Clinicians	4	1.36	.46	2.26	2.96	.003	1	.54	-.14	1.23	1.56	.12
Global	27	.45	.35	.56	8.33	< .001	1	.21	-.42	.85	.66	.51
Anxiety/Stress												
Self-reports	19	.49	.37	.60	8.45	< .001	2	.13	-.34	.60	.54	.59
Parents	1	.83	.42	1.24	3.93	< .001	--	--		--	--	--
Clinicians	1	1.91	.92	2.89	3.80	< .001	1	.44	-.14	1.02	1.49	.14
Global	21	.53	.40	.66	7.94	< .001	3	.25	-.11	.62	1.36	.17
Depression												
Self-reports	20	.40	.32	.49	9.13	< .001	3	-.00	-.30	.29	-.02	.98
Parents	1	.67	.27	1.06	3.33	< .001	--	--		--	--	--
Global	20	.41	.32	.50	9.29	< .001	3	-.00	-.30	.29	-.02	.98
Self-esteem[a]	14	.61	.37	.86	4.90	< .001	3	.10	-.39	.60	.41	.68
Behaviour problems												
Self-reports	7	.82	.39	1.24	3.74	< .001	2	-.16	-.48	.16	-.96	.34
Parents	30	.53	.41	.65	8.91	< .001	4	.19	-.11	.48	1.23	.22
Clinicians	6	1.03	.76	1.29	7.58	< .001	--	--		--	--	--
Global	35	.66	.54	.79	10.31	< .001	5	.02	-.21	.25	.15	.88
Other variables												
Self-reports	10	.43	.17	.69	3.22	.001	2	.40	-.23	1.03	1.24	.21
Parents	1	1.36	-.34	3.07	1.57	.116	--	--		--	--	--
Clinicians	8	1.48	1.07	1.88	7.19	< .001	2	.37	-.48	1.21	.85	.39
Global	18	.93	.60	1.25	5.53	< .001	4	.35	-.06	.77	1.66	.10
All of the variables												
Self-reports	37	.52	.41	.62	9.62	< .001	5	.05	-.21	.30	.37	.71
Parents	34	.53	.42	.65	9.22	< .001	4	.17	-.13	.46	1.09	.28
Clinicians	16	1.34	1.05	1.64	8.86	< .001	3	.45	.07	.84	2.29	.02
Global	44	.64	.54	.75	12.18	< .001	7	.08	-.13	.29	.73	.46

Note. [a] Only child self-report measures. k: number of studies. d_+: mean effect size. dl and du: lower and upper limits of the 95% confidence interval for the mean effect size. Z: Z statistic for testing the statistical significance of the mean effect size, d_+. p: probability level for the Z statistic.

Out of the different psychological constructs assessed with the measurement instruments, the largest mean effect size was obtained with the category 'other varia-

bles', with mean effect size d_+ = .93, followed by a reduction of behaviour problems (d_+ = .66), an increase of self-esteem (d_+ = .61), and significant reductions of anxiety (d_+ = .53), sexualised behaviour symptoms (d_+ = .45), and depression (d_+ = .41). For all of the outcome measures the treatments seem to achieve a statistically significant and clinically relevant improvement of the different symptoms exhibited by the children that have been sexually abused. On the contrary, the control groups did not achieve a statistically significant mean effect size for any of the outcome measures, d_+ = .08 being the mean effect size obtained for the global outcome measure (see Table 1). Therefore, the children that did not receive treatment did not achieve either a statistically or a clinically significant improvement in their psychological well-being.

The heterogeneity analysis showed that the 44 treated groups exhibited a great variability in their effect estimates and, as a consequence, it is necessary to search for which treatment, participant, and methodological characteristics of the studies can explain at least part of the variability. Before presenting the results of these analyses however, a study of publication bias is outlined in the next section.

Publication bias

Since all the studies included in the meta-analysis were published papers, we tested whether the publication bias against null results could be a source of bias in the estimates of the effect size obtained in our meta-analysis. To do this, we carried out two complementary analyses on the 44 effect sizes obtained from the treated groups: the Egger test and the Fail-safe N (Cooper *et al.*, 2009). With the Egger test a non-statistically significant result was found for the intercept with anxiety measures (p = .269), depression measures (p = .280), self-esteem measures (p = .240), and other outcomes (p = .487). A statistically significant result was found for the intercept with the global measure (p = .012), sexualised behaviour symptoms (p = .006), and behaviour problems (p = .002). In these three last cases publication bias cannot be discarded as a potential confounding source. However, the Fail-safe Ns obtained in these three cases were very large, with values of N_{fs} = 181, 55, and 153 for global measures, sexualised behaviours, and behaviour problems, respectively. Obtaining an N_{fs} value of, for example, 181, means that to cancel the mean effect size obtained in our meta-analysis (d_+ = .65) there had to be 181 non-published studies with null effects not included in the meta-analysis. Therefore, in the light of these analyses and on a reasonable basis, we can discard publication bias as a serious threat to the validity of our meta-analytic results in all of the outcome measures.

Type of treatment

The main purpose of this meta-analysis was to examine the efficacy of the different psychological treatments that have been tested with children and adolescents victims of sexual abuse. Out of the 51 groups identified in the meta-analysis, 7 groups were comparison or control groups, whereas the remaining 44 groups were composed of children that had received some psychological treatment. The most tested treatments were those based on the cognitive-behavioural approach, CBT, with 17 groups (38.60%), mainly trauma-focused cognitive-behavioural treatments, followed by supportive therapy, with 8 groups (18.20%), psychodynamic treatments, with 4 groups (9.10%), humanistic treatments, with 4 groups (9.10%) of which 3 applied client-centered therapy and the

remaining group applied Maslow's self-regulation therapy; and play therapy, with 2 groups (4.50%). In addition, 9 groups combined CBT with other treatments.

Due to the wide variety of symptoms manifested by the abused children, we investigated the differential effectiveness of the treatments by applying separate analyses of variance for each outcome measure and for the global outcome (see Table 2). Beginning with the global outcome measure, we found statistically significant differences between the mean effect sizes obtained for the different treatments and with 33% of variance explained, with the best results obtained for one group that combined CBT + supportive therapy (d_+ = 1.74) and 2 groups that combined CBT + supportive therapy + play therapy (d_+ = 1.34). Next, the following treatments also obtained a mean effect size that was statistically significant: psychodynamic therapy (d_+ = .76), supportive therapy (d_+ = .67), CBT (d_+ = .63), CBT + psychodynamic therapy (d_+ = .62), and to a lesser extent, humanistic treatments (d_+ = .47). The remaining treatments did not achieve a statistically significant mean effect size. Finally, the 7 control groups obtained a mean effect size that was practically null (d_+ = .10).

TABLE 2. Mixed-effects analysis of variance of the type of treatment on the effect sizes obtained for the different outcome measures.

Outcome measure / Treatment	k	d_+	95 percent C.I.		ANOVA
			dl	du	
Outcome: global					$Q_{B(10)}$ = 32.59**
Cognitive-behavioural (CBT)	17	.63	.49	.77	ω^2 = .33
Play therapy (Play)	2	.34	-.12	.81	
Supportive therapy (ST)	8	.67	.42	.93	
Psychodynamic therapy (P)	4	.76	.40	1.11	
Humanistic therapy	4	.47	.24	.70	
CBT + ST	1	1.74	.72	2.76	
CBT + P	4	.62	.29	.96	
CBT + Play + ST	2	1.34	.85	1.84	
CBT + Play + P	1	.42	-.03	.858	
CBT + ST + P	1	.56	-.33	1.45	
Control groups	7	.10	-.14	.35	
Outcome: sexualised behaviours					$Q_{B(8)}$ = 14.65[a]
Cognitive-behavioural (CBT)	13	.48	.33	.62	ω^2 = .16
Play therapy (Play)	1	.64	-.44	1.72	
Supportive therapy (ST)	3	.38	.08	.68	
Psychodynamic therapy (P)	2	.62	.27	.97	
Humanistic therapy	3	.29	.06	.52	
CBT + P	3	.35	.04	.66	
CBT + Play + ST	1	1.92	1.03	2.81	
CBT + Play + P	1	.38	-.03	.79	
Control groups	1	.21	-.47	.90	
Outcome: anxiety measures					$Q_{B(6)}$ = 4.80
Cognitive-behavioural (CBT)	9	.51	.31	.70	ω^2 = .00
Supportive therapy (ST)	6	.80	.45	1.15	
Psychodynamic therapy (P)	1	.41	-.99	1.81	
Humanistic therapy	2	.37	.04	.71	
CBT + P	2	.53	.00	1.05	

TABLE 2. Mixed-effects analysis of variance of the type of treatment on the effect sizes obtained for the different outcome measures. (Cont.)

Outcome measure / Treatment	k	d_+	95 percent C.I.		ANOVA
			dl	du	
CBT + P	2	.53	.00	1.05	
CBT + Play + P	1	.54	.03	1.04	
Control groups	3	.25	-.18	.68	
Outcome: depression measures					$Q_B(6) = 8,82$
Cognitive-behavioural (CBT)	10	.43	.31	.54	$\omega^2 = .14$
Supportive therapy (ST)	3	.52	.17	.87	
Psychodynamic therapy (P)	1	.89	-.80	2.58	
Humanistic therapy	3	.33	.17	.50	
CBT + P	2	.47	.04	.90	
CBT + Play + P	1	.45	.13	.77	
Control groups	3	-.00	-.30	.29	
Outcome: self-esteem					$Q_{B(8)} = 7.34$
Cognitive-behavioural (CBT)	21	.65	.04	1.26	$\omega^2 = .01$
Play therapy (Play)	1	.23	-.58	1.03	
Supportive therapy (ST)	5	.42	-.06	.89	
Humanistic therapy	1	.82	-.95	2.60	
CBT + ST	1	.75	-.08	1.57	
CBT + P	1	.33	-1.63	2.93	
CBT + Play + ST	2	1.17	.52	1.81	
CBT + ST + P	1	.56	-.53	1.65	
Control groups	3	.11	-.42	.65	
Outcome: behaviour problems					$Q_{B(8)} = 23.89*$
Cognitive-behavioural (CBT)	15	.59	.42	.76	$\omega^2 = .246$
Play therapy (Play)	2	.38	-.13	.90	
Supportive therapy (ST)	7	.84	.54	1.14	
Psychodynamic therapy (P)	3	.89	.48	1.30	
Humanistic therapy	4	.46	.19	.74	
CBT + ST	1	1.74	.69	2.79	
CBT + P	2	.71	.16	1.27	
CBT + Play + ST	1	.94	.21	1.66	
Control groups	5	.05	-.25	.36	
Outcome: other measures					$Q_{B(6)} = 3.62$
Cognitive-behavioural (CBT)	9	1.14	.63	1.65	$\omega^2 = .00$
Supportive therapy (ST)	4	.83	-.05	1.71	
Psychodynamic therapy (P)	1	.36	-1.54	2.25	
Humanistic therapy	2	.68	-.30	1.66	
CBT + P	1	1.10	-.31	2.51	
CBT + Play + P	1	.29	-1.10	1.68	
Control groups	4	.41	-.35	1.17	

Note. k: number of studies. d_+: mean effect size. dl and du: lower and upper limits of the 95% confidence interval for the mean effect size. Q_B: between-categories Q statistic. ** $p < .001$. [a] $p = .066$. ω^2: proportion of variance explained.

Note. * $p < .01$. k: number of studies. d_+: mean effect size. dl and du: lower and upper limits of the 95% confidence interval for the mean effect size. Q_B: between-categories Q statistic. ω^2: proportion of variance explained.

Comparing the type of treatment on the effect sizes obtained for the sexualised behaviour outcomes, a marginally statistically significant result was found. The best results were found in one study that combined CBT + play therapy + supportive therapy ($d_+ = 1.92$). A statistically significant mean effect size was also found for psychodynamic therapy ($d_+ = .62$), CBT ($d_+ = .48$), supportive therapy ($d_+ = .38$), and humanistic therapy ($d_+ = .29$).

The comparison of the different treatments on the effect sizes obtained for anxiety measures did not achieve a statistically significant result. It is worth noting however that the best results were obtained by supportive therapy ($d_+ = .80$), CBT + play therapy + psychodynamic therapy ($d_+ = .54$), CBT + psychodynamic therapy ($d_+ = .53$), and CBT alone ($d_+ = .51$). Non-statistically significant results were also found when comparing the treatments in the effect sizes obtained for depression measures. The best results were obtained by supportive therapy ($d_+ = .52$), CBT + psychodynamic therapy ($d_+ = .47$), CBT + play therapy + psychodynamic therapy ($d_+ = .45$), and CBT alone ($d_+ = .43$). One study that applied psychodynamic therapy obtained an effect size of .89, but did not achieve statistical significance.

The effect sizes obtained with the self-esteem measures did not show statistically significant differences for the different treatments, but it is worth noting that the only two treatment categories that obtained a statistically significant mean effect size were CBT + play therapy + psychodynamic therapy ($d_+ = 1.17$) and CBT alone ($d_+ = .65$). One study that applied humanistic therapy obtained an effect size of .82, but it was not statistically significant.

Statistically significant differences were found when we compared the different treatments in the effect sizes obtained for the behaviour problem outcomes. The best results were obtained by one group that combined CBT with supportive therapy ($d_+ = 1.74$), followed by CBT + play therapy + supportive therapy ($d_+ = .94$), psychodynamic therapy ($d_+ = .89$), supportive therapy ($d_+ = .84$), CBT + psychodynamic therapy ($d_+ = .71$), and CBT alone ($d_+ = .59$).

Summarizing the results obtained with the analyses of variance, it seems that CBT combined with supportive therapy, play therapy, or other psychodynamic treatments present better effect sizes than other treatment options.

Other treatment characteristics

In addition to the type of treatment tested, we were interested in examining the influence of several characteristics of the treatments implemented. When the moderator variables were qualitative, we applied analyses of variance, and when they were continuous, we applied simple regression analyses, in both cases assuming a mixed-effects model. It is worth noting that these analyses, as well as those referring to participant and methodological characteristics, were carried out only for the 44 treatment groups and for the global outcome measure.

With regards to the qualitative moderator variables we did not find a statistically significant effect for any one of them ($p > .05$): treatment target, the use or non-use of a manualised treatment, type of training, therapist training, or therapist experience.

Table 3 presents the results of the simple regression analyses for the continuous moderator variables. The length of the treatment was coded in terms of the number of weeks (median = 12, range: from 2 to 96 weeks) and in terms of the number of sessions (median = 12, range: from 1 to 48). A positive, statistically significant relationship with the effect size was found both with the number of weeks and with the number of sessions. The magnitude of the treatment, defined as the total number of hours received by the child (median = 15, range: from 3.80 to 161 hours), showed a positive, marginally significant relationship with the effect sizes ($p = .074$), whereas the intensity of the treatment (number of hours per week; median = 1 hour, range: from .60 to 4.50) did not show a statistical relationship. Therefore, the larger the length and the magnitude of the treatment, the larger the effect size.

TABLE 3. Mixed-effects simple regression analyses of the treatment, participant, and methodological moderator variables on the effect sizes obtained for the global outcome measure.

Moderator variable	k	b_j	Z	p	Q_E	p	R^2
Treatment variables							
Number of sessions	39	.02	2.20	.027	34.69	.573	.12
Duration (nº of weeks)	40	.01	2.06	.039	39.92	.385	.10
Intensity (nº of hours per week)	31	.09	.75	.455	27.33	.554	.02
Magnitude (total nº of hours)	33	.00	1.78	.074	28.73	.584	.10
Participant variables							
Mean age (in years)	44	.02	1.14	.253	42.92	.431	.03
Gender (% male)	44	-.00	-.52	.603	43.75	.397	.01
Sex contact (% with penetration)	29	-.00	-.41	.679	28.88	.367	.01
% intrafamilial aggressor	34	.00	.69	.490	32.18	.458	.02
Methodological variables							
Study quality (0 – 7)	44	-.03	-.83	.403	43.07	.468	.02
N in the posttest	44	-.00	-.45	.585	42.91	.432	.01
% attrition in the posttest	44	-.58	-1.82	.068	44.30	.375	.07

Note. k: number of studies. b_j: unstandardised regression coefficient. Z: Z statistic for testing the significance of the moderator variable. Q_E: statistic for testing the model misspecification. p: in all cases, p is the probability level for each statistical test. R^2: proportion of variance accounted for.

Participant characteristics

Other variables that can be related to the effect sizes are the personal characteristics of the participants in the treatment groups. No statistically significant relationships were found with the effect size for any of the qualitative moderator variables examined. Some trends in the data are worth noting however. Firstly, although the mean age of the abused children in the sample did not exhibit a statistically significant relationship with the effect sizes, the mean effect size experimented a slight increase with age. This result is in the same line as that found in the meta-regression (see Table 3) applied for the mean age of the children in the sample (mean = 10.60, range: from 4.20 to 17 years), with a positive but non-statistically significant regression coefficient. Secondly, although the gender of the abused children in the samples did not achieve a statistical relationship

with the effect size, the mean effect size was higher when the samples were composed by females alone ($d_+ = .79$) than when they contained only males ($d_+ = .57$). This result is similar to that obtained in the meta-regression (see Table 3) for the percentage of boys in the sample (median = 10%, range: from 0% to 100%), with a negative but non-statistically significant relationship with the effect size. Thirdly, although a non-statistically significant relationship was found between the victim–aggressor relationship and the effect size, it seems that the samples composed of children that have suffered intrafamilial abuse exclusively achieved a mean effect size ($d_+ = .88$) that was larger than that of the samples which mixed children with intrafamilial and extrafamilial abuse ($d_+ = .59$). This result is similar to that obtained in the meta-regression (see Table 3) for the percentage of children in the sample that had suffered intrafamilial sexual abuse (median = 57.50%, range: from 19% to 100%), with a positive but non-statistically significant relationship with the effect size. Therefore, although the analyses did not show a statistically significant relationship with the effect size, these results suggest that the treatments are more effective for females than for males, as the age is greater, and when the relationship between the victim and the aggressor is intrafamilial.

Methodological characteristics

Another cluster of moderator variables, whose possible relationship with the effect sizes of the treatment groups we were interested in examining, refers to the methodological aspects of the study design. The only two methodological characteristics that reached a marginally significant relationship with the effect size were the use of one or several therapists in applying the treatment and the percentage of attrition at the posttest in respect to the pretest (see Table 3). In particular, a larger mean effect size was obtained ($p = .066$) when there were several therapists used, but not crossed between the treatments ($d_+ = .78$), than when one therapist alone was used to apply the treatment ($d_+ = .47$). The negative, marginally significant relationship of the percentage of attrition ($p = .068$; mean = 18.70%, range: from 0% to 58%) to the effect size means that the greater the loss of participants during the treatment, the lower the effect size (see Table 3).

There were non-statistically significant differences in the mean effect sizes of the studies that randomly versus non-randomly assigned the participants to the groups, between those that used and did not use masked evaluators, between those that carried out versus those that did not carry out intent-to-treat analyses, between those that compared versus those that did not compare completers with dropouts, and between the different recruitment procedures of the participants. Finally, the study quality, coded on a scale of 0 to 7 points (median = 3.90, range: from .50 to 6.30), did not show a statistically significant relationship with the effect size (see Table 3).

Follow-up measures

Out of the 51 groups meta-analyzed, only 22 treatment groups and one control group reported follow-up data for the outcome measures (median = 21 months, range: from 5 to 82). For the global outcome measure, the mean effect size was $d_+ = .70$, which was statistically significant ($Z = 9.40$, $p < .001$) and of medium magnitude. This mean

effect size was even slightly higher than that obtained in the posttest ($d_+ = .70$; see Table 1), as well as those obtained for the self-reports ($d_+ = .58$), parent assessments ($d_+ = .51$), and clinician assessments ($d_+ = 1.53$). In order of the effect magnitude exhibited, the better results were found with other outcome measures ($d_+ = 1.05$, $Z = 4.59$, $p < .001$), followed by anxiety measures ($d_+ = .63$, $Z = 6.95$, $p < .001$), sexualised behaviours ($d_+ = .62$, $Z = 8.03$, $p < .001$), self-esteem ($d_+ = .62$, $Z = 2.98$, $p = .003$), behaviour problems ($d_+ = .61$, $Z = 8.07$, $p < .001$), and depression measures ($d_+ = .51$, $Z = 6.65$, $p < .001$), all of medium magnitude. With respect to the only control group, the effect sizes obtained for the different outcome measures and type of report were non-statistically significant, with the exception of that obtained for other outcome measures. Therefore, in all of the examined outcome measures the effects achieved in the posttest maintained over time and even slightly increased. These results should be interpreted very cautiously however, because of the high attrition suffered with respect to the sample size in the pretest: a median attrition of 28% in the treatment groups and an attrition of 17% in the control group.

Discussion

The purpose of this research was to examine, by means of a meta-analytic investigation, the efficacy of the psychological treatments for children and adolescents that have suffered sexual abuse. Thirty-three articles that met our selection criteria enabled us to define 44 treatment groups and 7 control groups. For each group of participants, an effect size index was defined as the standardized mean change between the pretest and the posttest means. In the studies we found a wide variety of psychological approaches for treating the symptoms of children that had been victims of sexual abuse, but there is evidently a predominance of trauma-focused cognitive-behavioural treatments, alone or in combination with other treatment approaches. In order to capture all of the possible changes due to the treatments, an effect estimate was calculated for each of the different outcome measures (sexualised behaviours, anxiety, depression, self-concept, behaviour problems, and other outcomes) and types of report (child self-report, parent assessment, and clinician assessment).

In terms of the criteria by Cohen (1988), the mean effect sizes obtained for the different outcome measures were of a medium-to-large magnitude and statistically significant. The mean effect size for the global outcome measure was $d_+ = .64$, very similar to that obtained by Skowron and Reinemann (2005, $d = .69$) and slightly lower than those of Reeker *et al.* (1997, $d = .74$) and Hetzel-Riggin *et al.* (2007, $d = .74$). The clinician assessments exhibited an over-estimation of the effects ($d_+ = 1.34$) in comparison to self-reports ($d_+ = .52$) and parent assessments ($d_+ = .53$). On the contrary, the mean effect size obtained for the control groups was practically null and non-statistically significant in all of the outcome measures, $d_+ = .08$ being that obtained for the global outcome measure.

In the follow-up, with a median length of 21 months, the mean effect size for the global outcome measure was $d_+ = .70$, of a medium-to-large magnitude and statistically significant. Therefore, for all of the outcome measures the effects achieved by the

treatments in the posttest maintained over time. However, these results should be interpreted very cautiously because they are based only on 22 treatment groups.

A significant improvement was found for all the outcome measures analyzed, although the effect magnitude varied from one outcome to the other. Thus, sexualised behaviours achieved a mean effect size of medium magnitude ($d_+ = .45$), clearly lower than that found by Reeker *et al.* (1997, $d = .77$) and higher than that of Corcoran and Pillai (2008, $d = .31$). In reducing behaviour problems, treatments showed an effect of medium magnitude ($d_+ = .66$), clearly lower than those of Reeker *et al.* (1997, $d = .73$) and Hetzel-Riggin *et al.* (1007, $d = 1.60$) and clearly higher than those of Macdonald *et al.* (2006, externalizing outcomes: $d = .14$) and Corcoran and Pillai (2008, externalizing: $d = .32$; internalizing: $d = .41$). The children's self-esteem was largely improved by the treatments ($d_+ = .61$), a result slightly lower than those found by Reeker *et al.* (1997, $d = .88$) and Hetzel-Riggin *et al.* (2007, $d = .71$). With anxiety outcomes the treatments achieved an effect of medium magnitude ($d_+ = .53$) and clearly larger than that of Macdonald *et al.* (2006, $d = .21$) for CBT versus treatment as usual comparisons. In respect to depression outcomes, the treatments significantly improved the children's wellbeing, with an effect of medium magnitude ($d_+ = .41$). Finally, in other outcome measures we found a significant and large effect magnitude ($d = .93$).

The main purpose of our study was to examine the effects of different treatment approaches to ameliorate the sequelae of sexual abuse in children and adolescents. Our results revealed that there are statistically significant differences among the different treatment modalities for the global outcome measure, behaviour problems and, marginally, sexualised behaviour outcomes. Our analyses with these outcome measures revealed that the best improvements in children's psychological wellbeing are achieved by combining trauma-focused CBT, supportive therapy and, to a lesser extent, psychodynamic therapy. In the other outcome measures (anxiety, depression, self-esteem, and other outcomes) there were no significant differences among the treatment modalities, but CBT, supportive therapy, and psychodynamic therapy, alone or in combination, were revealed as the most effective treatments. In particular, for improving the self-esteem of abused children, CBT alone or in combination with supportive therapy and play therapy were the only treatment elements that achieved a statistically significant result. In general, although CBT alone showed good results, better results were obtained when it was combined with supportive therapy and/or some psychodynamic element (*e.g.,* play therapy).

With regards to the differential treatment efficacy, our results coincide only partially with those of Hetzel-Riggin *et al.* (2007). On the one hand, the good results obtained for CBT ($d_+ = .63$) and supportive therapy ($d_+ = .67$) match those of Hetzel-Riggin *et al.* (2007, $d = .88$ and $.87$ respectively), as well as the conclusions of several qualitative reviews (King *et al.*, 2003; Saunders *et al.*, 2004; Saywitz *et al.*, 2000). On the other hand, the good result obtained by Hetzel-Riggin *et al.* (2007) for play therapy ($d = .88$) did not match our results, as we did not find a statistically significant mean effect size for play therapy with any of the outcome measures (*e.g.,* $d_+ = .34$ for global outcome).

Comparing our effect estimates for CBT and those obtained by Macdonald *et al.* (2006) reveals an apparent discrepancy, as our effect estimates were consistently larger

than those shown by Macdonald *et al.* (2006). The reason for this discrepancy is in the different effect size indices used in these meta-analyses. In our meta-analysis, the analysis unit was the group and the effect size was the standardized mean difference between the pretest and posttest means. In the meta-analysis by Macdonald *et al.* (2006) however, the analysis unit was the comparison between a CBT and a treatment as usual condition, and the effect size was defined as the difference between the standardized pretest - posttest mean change of the two groups. The low effect estimates obtained by Macdonald *et al.* (2006) were due to the fact that the CBT groups were compared with an active treatment, usually supportive therapy, and as it has been showed in our study, supportive therapy is about equally as effective as CBT in improving child wellbeing.

In respect to the treatment characteristics, the only one that showed a clear relationship with the results was the length of the treatment, implying better results as the treatment is longer. This result coincides with that obtained by Hetzel-Riggin *et al.* (2007). Other treatment characteristics such as the treatment target, use of treatment manuals, type of training, therapist training, and therapist experience, did not show a statistical relationship with the effect sizes.

Although we did not find a statistical relationship between any of the participant characteristics and the results, it is worth noting that the treatments showed better results as the percentage of females in the sample increased, as the age of the participants was greater, and for intrafamilial sexual abuse. The absence of a statistically significant relationship of gender and age with the effect sizes coincides with the results obtained by Reeker *et al.* (1997) and Hetzel-Riggin *et al.* (2007), but in respect to gender Reeker *et al.* (1997) also found a similar trend to ours: a better result for samples composed of females only ($d = .96$) than for males only ($d = .30$). Hetzel-Riggin *et al.* (2007) found the opposite trend to ours in respect to the intrafamilial versus extrafamilial victim-aggressor relation: whereas we found slightly better results for samples composed of children that suffered intrafamilial sexual abuse ($d_+ = .88$) in comparison to mixed samples ($d_+ = .59$), Hetzel-Riggin *et al.* (2007) found a negative relationship between the percentage of participants in the sample with intrafamilial abuse and the effect size. The discrepancy between these results may be due to the ambiguity in the studies describing the type of abuse and the participant characteristics, which can lead to deficiencies in the coding process. On the other hand, the absence of a statistical relationship between ethnicity in the sample and effect size did not match the result found by Hetzel-Riggin *et al.* (2007) of a positive relationship between the percentage of non-Caucasians in the sample and effect size.

Finally, in respect to the methodological variables the only one that showed a marginally significant relationship with the effect size was the percentage of attrition in the posttest, with better effect sizes as the number of dropouts decreased. Other important methodological variables, such as the study quality, random assignment to the groups, the use of masked evaluators, the use of intent-to-treat analyses, the comparison between dropouts and completers, and the participant recruitment strategy, did not present a statistical relationship with the effect sizes.

Implications for clinical practice

A first important result for practiced therapists is the wide variety of symptoms that can affect the psychological and behavioural wellbeing of children that have suffered sexual abuse. The assessment protocol has to be as complete as possible in order to be able to detect the symptoms that have to be treated (sexualised behaviours, behaviour problems, anxiety, depression, self-esteem, PTSD symptoms, general adjustment, social functioning, etc.). On the other hand, using self-reports with children and young adolescents has problems of validity and reliability. It is very recommendable to complement the symptom assessment with interviews with the child and his/her parents, caregivers, and other persons connected with him/her. In this respect, the Child Behavior Checklist (CBCL; Achendach and Edelbrock, 1991) is a very useful instrument, as it covers a wide variety of child symptoms reported by the parents and teachers (depression, social isolation, somatisations, hyperactivity, *etc.*).

A second important result is the absence of improvements in the psychological wellbeing of the sexually abused children when they do not receive treatment and the long-term consequences that no treatment can cause in adult life (Cantón and Justicia, 2008). Thirdly, there is a wide variety of treatment approaches and combinations of CBT and other treatment elements which efficacy has been empirically assessed. Our results show that CBT is more effective when it is combined with supportive therapy and/or some psychodynamic component (*e.g.,* play therapy). Mixing these treatment elements enables us to simultaneously treat the feelings, thoughts, and behaviours of the abused children. In any case, it is important to take into account the particular symptoms of the child in order to apply the most appropriate treatment elements for him/her. Finally, when the treatment for child sexual abuse occurs in a group therapy context, it is important to take into account that the progress of each child may be different and that some of them may suffer a worsening in the therapeutic process. As a consequence, fixing *a priori* the number of group sessions can be problematic in practice.

Implications for future research

The outcome research about the efficacy of the psychological treatment of children that have been sexually abused suffers from serious methodological deficiencies in its design, implementation, and data analysis. Studies should include, at least, a control or comparison group. They should randomly assign participants to the groups, use several therapists and cross them among the treatments. Masked evaluators should be used, differential attrition analyzed, and intent-to-treat analyses applied. All of these steps will enable us to better control for possible biases in the effect estimates of the treatments. In addition, a more meticulous reporting of the treatment elements of each condition and the participant characteristics (*e.g.,* age, gender, history of the abuse, intrafamilial versus extrafamilial nature of the abuse, presence of PTSD and other disorders, alcohol or drug abuse in the parents, matrimonial problems, sexual assertiveness, *etc.*) will help to better characterize the study and interpret the results (Santos-Iglesias and Sierra, 2010). A greater attention to the methodological aspects together with a better description of these characteristics will provide more valid and reliable evidence about the efficacy of child sexual abuse treatment and will benefit future reviews (qualitative or quantitative) of the research about this topic.

References

(The references preceded by an asterisk were included in the meta-analysis.)

Achenbach, T. and Edelbrock, C. (1991). Manual for the Child Behaviour Checklist and revised behaviour profile. Burlington, VT: University of Vermont: Department of Psychiatry.

*Ashby, M., Gilchrist, L., and Miramontez, A. (1987). Group treatment for sexually abused American Indian adolescents. *Social Work with Groups, 10*, 21-32.

*Bagley, C. and LaChance, M. (2000). Evaluation of a family-based programme for the treatment of child sexual abuse. *Child and Family Social Work, 5*, 205-213.

*Berliner, L. and Saunders, B.E. (1996). Treating fear and anxiety in sexually abused children: Results of a controlled 2-year follow-up study. *Child Maltreatment*, *1*, 294–309.

Bonner, B.L. (2003). Child maltreatment. In T. Ollendick and C. Schroeder (Eds.), *Encyclopedia of Clinical Child and Pediatrics Psychology* (pp. 92-93). New York: Plenum Pub.

Borenstein, M.J., Hedges, L.V., Higgins, J.P.T., and Rothstein, H. (2005). *Comprehensive Meta-analysis* (Vers.2). Englewood, NJ: Biostat, Inc.

Botella, J. and Gambara, H. (2006). Doing and reporting a meta-analysis. *International Journal of Clinical and Health Psychology*, *6*, 425-440.

Cantón, D. and Justicia, F. (2008). Afrontamiento del abuso sexual infantil y ajuste psicológico a largo plazo. *Psicothema, 20*, 509-515.

*Celano, M., Hazzard, A., Webb, C., and McCall, C. (1996). Treatment of traumagenic beliefs among sexually abused girls and their mothers: An evaluation study. *Journal of Abnormal Child Psychology, 24*, 1-17.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

*Cohen, J.A., Deblinger, E., Mannarino, A.P., and Steer, R.A. (2004). A multisite, randomized controlled trial for children with sexual abuse-related PTSD symptoms. *Journal of the American Academy of Child and Adolescent Psychiatry, 43*, 393-402.

*Cohen, J.A. and Mannarino, A.P. (1996). A treatment outcome study for sexually abused preschool children: Initial findings. *Journal of the American Academy of Child and Adolescent Psychiatry*, *35*, 42–50.

*Cohen, J.A. and Mannarino, A.P. (1997).[4] A treatment study for sexually abused preschool children: Outcome during a one-year follow-up. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 1228-1235.

*Cohen, J.A. and Mannarino, A.P. (1998).[5] Interventions for sexually abused children: Initial treatment outcome findings. *Child Maltreatment, 3*, 17-26.

*Cohen, J.A., Mannarino, A.P., and Knudsen, K. (2005). Treating sexually abused children: 1 year follow-up of a randomized controlled trial. *Child Abuse and Neglect, 29*, 135-145.

Cooper, H., Hedges, L.V., and Valentine, J.C. (Eds.) (2009). *The handbook of research synthesis and meta-analysis* (2nd ed.). New York: Russell Sage Foundation.

Corcoran, J. and Pillai, V. (2008). A meta-analysis of parent-involved treatment for child sexual abuse. *Research on Social Work Practice, 18*, 453-464.

*Deblinger, E., Lippmann, J., and Steer, R. (1996). Sexually abused children suffering posttraumatic stress symptoms: Initial treatment outcome findings. *Child Maltreatment, 1*, 310-321.

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[4] This article contributed with the follow-up data of the Cohen and Mannarino's (1996) study.

[5] This article presents data from the same sample that that of Cohen, Mannarino, and Knudsen (2005). As the Cohen et al.'s (2005) study included follow-up data and applied intent-to-treat analyses, we used their data in opposite to those of Cohen and Mannarino (1998).

*Deblinger, E., Mannarino, A.P., Cohen, J.A., and Steer, R.A. (2006).[6] A follow-up study of a multisite, randomized controlled trial for children with sexual abuse-related PTSD symptoms. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 1474-1484.

*Deblinger, E., McLeer, S.V., and Henry, D. (1990). Cognitive behavioral treatment for sexually abused children suffering post-traumatic stress: Preliminary findings. *Journal of the American Academy of Child and Adolescent Psychiatry, 29*, 747-752.

*Deblinger, E., Stauffer, L.B., and Steer, R.A., (2001). Comparative efficacies of supportive and cognitive behavioral group therapies for young children who have been sexually abused and their nonoffending mothers. *Child Maltreatment, 6*, 332-343.

*Deblinger, E., Steer, R.A., and Lippmann, J. (1999).[7] Two-year follow-up study of cognitive behavioral therapy for sexually abused children suffering post-traumatic stress symptoms. *Child Abuse and Neglect, 23*, 1371-1378.

DeJong, T.L. and Gorey, K.M. (1996). Short-term versus long-term group work with female survivors of childhood sexual abuse: A brief meta-analytic review. *Social Work with Groups, 19*, 19-27.

*De Luca, R.V., Boyes, D.A., Grayston, A.D., and Romano, E. (1995). Sexual abuse: Effects of group therapy on pre-adolescent girls. *Child Abuse Review, 4*, 263-277.

*De Luca, R.,V., Hazen, A., and Cutler, J. (1993). Evaluation of a group counselling program for preadolescent female victims of incest. *Elementary School Guidance and Counselling, 28*, 104-114.

Echeburúa, E. and Subijana, I.J. (2008). Guía de buena práctica psicológica en el tratamiento judicial de los niños abusados sexualmente. *International Journal of Clinical and Health Psychology, 8*, 733-748.

Finkelhor, D. and Berliner, L. (1995). Research on the treatment of sexually abused children: A review and recommendations. *Journal of the American Academy of Child and Adolescent Psychiatry***, 34*, 1408–1423.

Finkelhor, D. and Browne, L. (1986). The traumatic impact of child sexual abuse: A conceptualization. *Annual Progress in Child Psychiatry and Child Development,* 632-648.

*Friedrich, W.N., Luecke, W.J., Beilke, R.L., and Place, V. (1992). Psychotherapy outcome of sexually abused boys: An agency study. *Journal of Interpersonal Violence, 7*, 396–409.

*Hack, T., Osachuk, T., and de Luca, R. (1994). Group treatment for sexually abused preadolescent boys. *Families in Society: The Journal of Contemporary Human Services, 4*, 217-228.

*Hall-Marley, S.E. and Damon, L. (1993). Impact of structured group therapy on young victims of sexual abuse. *Journal of Child and Adolescent Group Therapy, 3*, 41-48.

Hetzel-Riggin, M.D., Brausch, A.M., and Montgomery, B.S. (2007). A meta-analytic investigation of therapy modality outcomes for sexually abused children and adolescents: An exploratory study. *Child Abuse and Neglect, 31*, 125-141.

*Hiebert-Murphy, D., de Luca, R., and Runtz, M. (1992). Group treatment for sexually abused girls: Evaluating outcome. *Families in Society: The Journal of Contemporary Human Services, 73*, 205-213.

*Jaberghaderi, N., Greenwald, R., Rubin, A., Zand, S.O., and Dolatabadi, S. (2004). A comparison of CBT and EMDR for sexually abused Iranian girls. *Clinical Psychology and Psychotherapy, 11*, 358-368.

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[6] This article contributed with the follow-up data of the Cohen, Deblinger, Mannarino, and Steer's (2004) study.

[7] This article contributed with the follow-up data of the Deblinger et al. (1996) study.

King, N.J., Heyne, D., Tonge, B.J., Mullen, P., Myerson, N., Rollings, S., and Ollendick, T.H. (2003). Sexually abused children suffering from post-traumatic stress disorder: Assessment and treatment strategies. *Cognitive Behaviour Therapy, 32*, 2-12.

*King, N.J., Tonge, B.J., Mullen, P., Myerson, N., Heyne, D., Rollings, S., Martin, R., and Ollendick, T.H. (2000). Treating sexually abused children with posttraumatic stress symptoms: A randomized clinical trial. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*, 1347-1355.

Kolko, D.J. (1987). Treatment of child sexual abuse: Programs, progress, and prospects. *Journal of Family Violence, 2,* 303-318.

*Kruczek, T. and Vitanza, S. (1999). Treatment effects with an adolescent abuse survivor's group. *Child Abuse and Neglect, 23*, 477-485.

*Lanktree, C.B. and Briere, J. (1995). Outcome of therapy for sexually abused children: A repeated measures study. *Child Abuse and Neglect, 19*, 1145-1155.

Macdonald, G., Higgins, J.P.T., and Ramchandani, P. (2006). Cognitive-behavioural interventions for children who have been sexually abused. *Cochrane Database of Systematic Reviews*, Issue 4. Art. No.: CD001930. DOI: 10.1002/14651858.CD001930.pub2.

*MacKay, B., Gold, M., and Gold, E. (1987). A pilot study in drama therapy with adolescent girls who have been sexually abused. *The Arts in Psychotherapy, 14*, 77-84.

*McGain, B. and McKinzey, R.K. (1995). The efficacy of group treatment in sexually abused girls. *Child Abuse and Neglect, 19*, 1157-1169.

Montero, I. and León, O. G. (2007). A guide for naming research studies in psychology. *International Journal of clinical and Health Psychology, 7*, 847-862.

*Nelki, J.S. and Watters, J. (1989). A group for sexually abused young children: Unravealing the web. *Child Abuse and Neglect, 13*, 369-377.

*Nolan, M., Carr, A., Fitzpatrick, C., O'Flaherty, A., Keary, K., Turner, R., O'Shea, D., Smyth, P., and Tobin, G. (2002). A comparison of two programmes for victims of child sexual abuse: A treatment outcome study. *Child Abuse Review, 11*, 103-123.

Ortega, R., Sánchez, V., Ortega-Rivera, J., Nocentini, A., and Menesini, E. (2010). Peer sexual harassment in adolescent girls: A cross-national study (Spain-Italy). *International Journal of Clinical and Health Psychology, 10*, 245-264.

*Reeker, J. and Ensing, D. (1998). An evaluation of a group treatment for sexually abused young children. *Journal of Child Sexual Abuse**, 7*, 65–85.

Reeker, J., Ensing, D., and Elliott, R. (1997). A meta-analytic investigation of group treatment outcomes for sexually abused children. *Child Abuse and Neglect, 21*, 669-680.

*Rust, J.O. and Troupe, P.A. (1991). Relationships of treatment of child sexual abuse with school achievement and self-concept. *Journal of Early Adolescence**, 11*, 420–429.

Santos-Iglesias, P. and Sierra, J.C. (2010). El papel de la asertividad sexual en la sexualidad humana: Una revisión sistemática. *International Journal of Clinical and Health Psychology, 10*, 553-577.

Saunders, B.E., Berliner, L., and Hanson, R.F. (Eds.). (2004). *Child physical and sexual abuse: Guidelines for treatment (Revised Report: April 26, 2004)*. Charleston, SC: National Crime Victims Research and Treatment Center.

Saywitz, K.J., Mannarino, A.P., Berliner, L., and Cohen, J. A. (2000). Treatment for sexually abused children and adolescents. *American Psychologist**, 55*, 1040–1049.

*Scott, T.A., Burlingame, G., Starling, M., Porter, C., and Lilly, J.P. (2003). Effects of individual client-centered play therapy on sexually abused children's mood, self-concept, and social competence. *International Journal of Play Therapy, 12*, 7–30.

Silovsky, J.F. and Hembree-Kigin, T.L. (1994). Family and group treatment for sexually abused children: A review. *Journal of Child Sexual Abuse, 3*, 1–20.

*Sinclair, J.J., Larzelere, R.E., Paine, M., Jones, P., Graham, K., and Jones, M. (1995). Outcome of group treatment for sexually abused adolescent females living in a group home setting, *Journal of Interpersonal Violence, 10*, 533–542.

Skowron, E. and Reinemann, D.H.S. (2005). Effectiveness of psychological interventions for child maltreatment: A meta-analysis. *Psychotherapy: Theory, Research, Practice, Training, 42*, 52-71.

*Stauffer, L.B. and Deblinger, E. (1996). Cognitive behavioral groups for nonoffending mothers and their young sexually abused children: A preliminary treatment outcome study. *Child Maltreatment, 1*, 65-76.

*Sullivan, P.M., Scanlan, J.M., Brookhouser, P E., Schulte, L.E., and Knutson, J.F. (1992). The effects of psychotherapy on behavior problems of sexually abused deaf children. *Child Abuse and Neglect, 16*, 297–307.

Thomlison, B. (2003). Characteristics of evidence-based child maltreatment interventions. *Child Welfare, 82*, 541-569.

*Thun, D., Sims, P.L., Adams, M.A., and Webb, T. (2002). Effects of group therapy on female adolescent survivors of sexual abuse: A pilot study. *Journal of Child Sexual Abuse, 11*, 1-16.

*Trowell, J., Kolvin, I., Weeramanthri, T., Sadowski, H., Berelowitz, M., Glasser, D., and Leitch, I. (2002). Psychotherapy for sexually abused girls: Psychopathological outcome findings and patterns of change. *British Journal of Psychiatry, 180*, 234-247.

*Verleur, D., Hughes, R.E., and de Rios, M.D. (1986). Enhancement of self-esteem among female adolescent incest victims: A controlled comparison. *Adolescence, 21,* 843–854.

Wolfe, D.A. and Wekerle, C. (1993). Treatment strategies for child physical abuse and neglect: A critical progress report. *Clinical Psychology Review, 13*, 473-500.

APPENDIX 1. List of studies and groups included in the meta-analysis with the most relevant moderator variables.

Reference	Treatment	Duration	Age	Gender	Relation	Design	Attrition	Quality	N	d
Ashby, Gilchrist, and Miramontez (1987)	CBT+ST+P	10	15	0	-	0	.27	.72	9	.56
Bagley and LaChance (2000) Control gr.	Control	-	11.80	0	100	0	.36	1.64	30	-.17
Bagley and LaChance (2000) Gr. A	H	96	11.20	0	100	0	.23	2.27	27	.97
Berliner and Saunders (1996) Gr. A	CBT	10	8	10	50	1	.38	5.12	48	.29
Berliner and Saunders (1996) Gr. B	CBT	10	8	13	76	1	.58	4.92	32	.39
Celano, Hazzard, Webb, and McCall (1996) Gr. A	CBT	8	10.50	0	56	1	.06	4.94	15	.80
Celano et al. (1996) Gr. B	ST	8	10.50	0	44	1	0	5	16	.71
Cohen and Mannarino (1996) Gr. A	CBT	12	4.68	42	34	1	.07	4.43	39	.80
Cohen and Mannarino (1996) Gr. B	H	12	4.68	42	34	1	.33	4.17	28	.34
Cohen et al. (2004) Gr. A	CBT	10.50	10.76	21	40.90	1	.22	6.28	89	.84
Cohen et al. (2004) Gr. B	H	10.75	10.76	21	59.10	1	.21	6.29	81	.61
Cohen et al. (2005) Gr. A	CBT	12	11.33	30	53	1	.27	6.23	30	.35
Cohen et al. (2005) Gr. B	H	12	10.67	32	70	1	.54	5.46	19	.08
De Luca, Hazen, and Cutler (1993)	ST	10	10.57	0	100	0	.14	.83	6	1.33
De Luca, Boyes, Grayston, and Romano (1995)	ST	10,5	9.50	0	100	0	.33	1.67	30	.78
Deblinger, McLeer, and Henry (1990)	CBT	12	7.79	0	73.70	0	0	3.50	19	1.07
Deblinger et al. (1996) Control gr.	Control	-	9.84	17	51	1	.60	2.40	10	.38
Deblinger et al. (1996) Gr. A	CBT	12	9.84	17	51	1	.12	3.88	22	1.03
Deblinger et al. (1996) Gr. B	CBT	12	9.84	17	51	1	.04	3.96	24	.80
Deblinger, Stauffer, and Steer (2001) Gr. A	CBT	8.50	5.45	39	52.30	1	.22	4.28	21	.70
Deblinger et al. (2001) Gr. B	ST	8.50	5.45	39	52.30	1	.15	4.35	23	.41
Friedrich, Luecke, Beilke, and Place (1992)	ST	32	10	100	50	0	.21	2.79	33	.56
Hack, Osachuk, and de Luca (1994)	ST	12	10	100	67	0	.14	.86	6	.62
Hall-Marley and Damon (1993)	Play	48	5.50	46.10	-	0	0	1	13	.53
Hiebert-Murphy, de Luca, and Runtz (1992)	ST	9	8	0	80	0	.17	.83	5	-.09
Jaberghaderi et al. (2004) Gr. A	CBT	6.14	12.50	0	-	1	.22	3.28	7	1.29
Jaberghaderi et al. (2004) Gr. B	CBT	-	12.50	0	-	1	.22	3.28	7	.81
King et al. (2000) Control gr.	Control	-	11.50	31	19	1	.17	5.83	10	.29
King et al. (2000) Gr. A	CBT	-	11.50	31	19	1	.25	5.75	9	.87

APPENDIX 1. List of studies and groups included in the meta-analysis with the most relevant moderator variables. (Cont.).

Reference	Treatment	Duration	Age	Gender	Relation	Design	Attrition	Quality	N	d
King et al. (2000) Gr. B	CBT	-	11.50	31	19	1	.25	5.75	9	.86
Kruczek and Vitanza (1999)	CBT+P	2	14.21	0	61	0	0	5	41	.77
Lanktree and Briere (1995)	CBT+Play+P	12	11.60	15.20	46.70	0	.21	1.79	44	.42
MacKay (1987)	P	8	15.40	0	100	0	0	4.50	5	.62
McGain and McKinzey (1995) Control gr.	Control	-	10.50	0	45	0	0	4	15	.25
McGain and McKinzey (1995) Gr. A	ST	32	10.50	0	45	0	0	4	15	2,50
Nelki and Watters (1989)	P	9	6	0	83.30	0	.14	1	6	.47
Nolan et al. (2002) Gr. A	CBT+P	24	12.60	15	30	0	.05	1.45	19	.54
Nolan et al. (2002) Gr. B	CBT+P	24	12.70	0	61.20	0	.17	1.83	15	.39
Reeker and Ensing (1998)	CBT+Play+ST	24	6.31	52.60	-	0	.34	1.16	19	1.26
Rust and Troupe (1991)	CBT+Play+ST	24	12.75	0	89.50	0	0	4	25	1.41
Scott et al. (2003)	Play	10	5.60	27	-	0	0	4	26	.30
Sinclair et al. (1995)	CBT	12	15	0	-	0	0	4.50	43	.29
Stauffer and Deblinger (1996)	CBT	-	4.21	26	64	0	.44	.50	19	.47
Sullivan, Scanlan, Brookhouser, Schulte, and Knutson (1992) Control gr.	Control	-	14	71	-	0	.50	1	18	-.10
Sullivan et al. (1992) Gr. A	CBT+ST	36	14	71	-	0	.56	.96	16	1.74
Thun, Sims, Adams, and Webb (2002) Control gr.	Control	-	17	0	100	1	.14	1.86	4	.18
Thun et al. (2002) Gr. A	CBT+P	12	17	0	100	1	.33	1.77	6	.33
Trowell et al. (2002) Gr. A	P	18	10.40	0	-	1	.19	3.81	29	.67
Trowell et al. (2002) Gr. B	P	30	9.70	0	-	1	.17	3.83	29	.93
Verleur, Hughes, and de Rios (1986) Control gr.	Control	-	15	0	100	1	0	4.50	15	.31
Verleur et al. (1986) Gr. A	CBT	24	15	0	100	1	0	4.50	15	1.02