anales de psicología, 2017, vol. 33, nº 3 (october), 578-588
http://dx.doi.org/10.6018/analesps.33.2.267961

ISSN print edition: 0212-9728. ISSN web edition (http://revistas.um.es/analesps): 1695-2294

Effect of treatment on sex offenders' recidivism: a meta-analysis

Virginia Soldino* and Enrique J. Carbonell-Vayá

University Research Institute of Criminology and Criminal Science. University of Valencia (Spain).

Título: Efecto del tratamiento sobre la reincidencia de delincuentes sexuales: un meta-análisis.

Resumen: Este meta-análisis tiene por objetivo medir el efecto del tratamiento en delincuentes sexuales. Tras una revisión sistemática de la literatura reciente, fueron seleccionados diecisiete estudios, contando con una muestra total de 6,681 delincuentes sexuales. Las tasas de reincidencia sexual (13.12% vs. 17.94%), violenta –incluyendo la sexual– (25.5% vs. 29.1%) y general –cualquier tipo de reincidencia– (46.53% vs. 52.41%) de los delincuentes tratados fueron inferiores a las de los grupos control. Se evidenció la eficacia del tratamiento en la reducción de las tasas de reincidencia sexual (*OR* = .69; p< .05) y general (*OR* = .66; p < .05) de los sujetos tratados, pero no en las tasas de reincidencia violenta. Estos resultados confirman la capacidad de los tratamientos psicológicos para reducir el riesgo de reincidencia sexual y general de los delincuentes sexuales. No obstante, la interpretación de tales resultados requiere cautela, pues el análisis independiente de los estudios con buena calidad metodológica no mostró efectos significativos del tratamiento. La necesidad de nuevos y mejores estudios resulta evidente, especialmente en Europa.

Palabras clave: Delincuentes sexuales; Tratamiento; Reincidencia; Meta-análisis.

Abstract: This meta-analysis has the aim of measuring the effect of treatment on sex offenders. After a systematic review of the recent literature, seventeen studies were selected, containing a total sample of 6,681 sex offenders. The rates of sexual recidivism (13.12% vs. 17.94%), violent –including sexual– (25.5% vs. 29.1%) and general –any type of recidivism– (46.53% vs. 52.41%) of treated offenders were less than those of the control groups. The effectiveness of the treatment was clear in reducing the rates of sexual (*OR*= .69; p < .05) and general (*OR* = .66; p < .05) recidivism of the subjects treated, but not the rates of violent recidivism. This results demonstrated the ability of psychological treatments for reducing the risk of sexual and general recidivism of sex offenders. However, the interpretation of such results requires caution, given that an independent analysis of the studies of a good methodological quality did not show significant effects of treatment. The need for new and better comparison studies to assess treatment effect is clear, especially in Europe.

Key words: Sex offenders; Treatment; Recidivism; Meta-analysis.

Introduction

Despite the generalized acceptance that certain modalities of intervention reduce the recidivism rates of common offenders, the effectiveness of treatment for sex offenders remains controversial (Hanson & Yates, 2013). Some reviews have concluded that treatment reduces the risk of recidivism of such subjects (Hanson, Bourgon, Helmus & Hodgson, 2009; Reitzel & Carbonell, 2006; Schmucker & Lösel, 2008, 2015), while others state that the evidence is not sufficient to reach such conclusions (Dennis et al., 2012; Grønnerød, Grønnerød & Grøndahl, 2015); all of the latter obviating a clear need for more and better studies –randomized controlled trials and high-quality quasi- experimental studies, especially outside North America (Schmucker & Lösel, 2015).

Prior meta-analyses on treatment effectiveness

Of the meta-analyses published on the effectiveness of the treatment of sex offenders, seven studies published in recent years should be highlighted, owing to their quality and current nature.

In 2005 and again in 2008, several studies conducted up to 2007 on the effectiveness of sex offender treatment programs (psychological, pharmacological or surgical castration treatments) were analyzed (Lösel & Schmucker, 2005; Schmucker & Lösel, 2008). The majority of them confirmed the treatment benefits; the average rate of sexual recidivism for treated offenders was 11.1%, while the average rate of the control groups was 17.5% (Odds Ratio *(OR)* = 1.70; p < .001); 6.6% vs. 11.8% with regard to violent recidivism in the control group (*OR* = 1.9; p < .001) and 22.4% compared to 32.5% (*OR* = 1.67; p < .001) in terms of general recidivism. Nevertheless, the methodological quality of the studies included was moderate: only 40% of studies reached Level 3 or higher on the Maryland Scientific Methods Scale and only six randomized studies reached Level 5 (Sherman et al., 1997). Recently, the authors updated these analysis (Schmucker & Lösel, 2015), including only psychosocial treatments, finding a smaller effect size for sexual recidivism (*OR* = 1.41; p < .01).

Moreover, Reitzel and Carbonell (2006) analyzed the data from nine studies conducted between 1975 and 2003 on the effectiveness of psychological treatment on juvenile sex offenders. Treatment effect on sexual recidivism rates was statistically significant (7.37% in treated subjects vs. 18.93% in the control groups); the effect size obtained was r = .43 (95% *CI* = .33 - .55).

For their part, Hanson et al. (2009) examined whether the Risk-Need-Responsivity (RNR) principles, associated with the effectiveness of general treatments for offenders, were also indicators of the effectiveness of specific psychological treatments for sex offenders. Based on 23 studies conducted up until 2008, the rates of sexual recidivism scored by the treated subjects were lower than in the control groups (10.9% vs. 19.2%; *OR* = .66; 95% *CI* = .49 - .89) and general recidivism rates (31.8% vs. 48.3%; *OR* = .61; 95% *CI* = .47 - .80), but violent recidivism rates were not significantly lower for the treatment groups relative to the comparison groups (22.9% vs. 32%; *OR* = .81; 95% *CI* = .58 - 1.14).

*** Correspondence address [Dirección para correspondencia]:**
Virginia Soldino. Instituto U. de I. en Criminología y Ciencias Penales. Facultad de Derecho. Universidad de Valencia. Edificio Departamental Central. Campus Tarongers s/n E-46022 Valencia (Spain).
E-mail: virginia.soldino@uv.es

However, the poor quality of the studies –only five studies were scored as good according to the guidelines of the Collaborative Outcome Data Committee (CODC, 2007)– urges caution when interpreting the results.

A more recent meta-analytical review (Dennis et al., 2012) analyzed the results obtained in ten randomized trials, carried out before 2010, on the effectiveness of psychological treatments on sex offenders. The conclusions of this study revealed the lack of results that support the ability of psychological treatments in reducing the risk that sex offenders re-offend.

Lastly, Grønnerød et al. (2015) conducted a specific meta-analysis on sexual offenders against children, analyzing 14 studies published between 1988 and 2011. The effect size deriving from the analysis of the studies was $r = .08$ (95% *CI* = .02 - .14) yet, by only analyzing the nine studies rated as good or weak (CODC, 2007), an effect size was obtained of $r = .03$ (95% *CI* = -.04 - .10). The results obtained did not show an effect of psychological treatment on recidivism rates.

Objectives of our meta-analysis

The purpose of our research was to review meta-analytically the empirical evidence existing with regard to the effectiveness of treatments specifically aimed at sex offenders, basing our research on control group comparison designs. Likewise, we were interested in analyzing the influence of moderating variables such as the treatment applied or the quality of the studies analyzed. Lastly, the effect size of the treatments analyzed was published in terms of sexual, violent (including sexual) and general recidivism (any type of recidivism) through the *OR*.

In contrast to the meta-analyses described (which included studies published as far back as 1975), and with the aim of excluding studies based on obsolete treatment programs that are no longer applied, only studies published over the last decade were analyzed (2004–2014). In recent years, significant changes have occurred in specific treatments for sex offenders, which evolve toward a model based on the strengths of the subjects (Marshall & Marshall, 2014). In this regard, the incorporation of the RNR principles by Andrews and Bonta (2010), the "Good Lives Model" by Ward (2010), the motivational interview by Miller and Rollnick (2002) and multisystemic therapy (MST) (Henggeler, Schoenwald, Borduin, Rowland & Cunningham, 2009b) −noteworthy in the case of adolescents− should be highlighted.

Furthermore, this is the first meta-analysis including Spanish studies which analyses the effectiveness of the first specific program for sex offenders created for the Spanish context (Garrido & Beneyto, 1996; Rivera-González, Romero-Quintana, Labrador- Muñoz & Serrano-Sáiz, 2006). On the other hand, in harmony with Grønnerød et al. (2015) and Hanson et al. (2009), we only included those studies classified as good or weak according to CODC directives (2007).

Method

Literature search

In November 2014, an electronic search was conducted in the Cochrane Database of Systematic Reviews, MedLine, PsycInfo and Dialnet, for articles published between 2004 and 2014 in English, Spanish, French and Italian, using the following search criteria (translated into each language): (*treatment OR intervention OR therapy*) *AND* (*sexual OR sex OR sexually*) *AND* (*offen* OR crim* OR assault* OR aggress* OR rap* OR abuse*) *NOT* (*victim*). The references of the articles found were also reviewed. With the aim of reducing publication bias, studies not published in peer-reviewed journals (reports, theses, etc.) were likewise included (Higgins & Green, 2011; Hopewell, McDonald, Clarke & Egger, 2007). After reading the abstracts of the articles identified in the search, 117 studies were selected (*see Figure 1*).

Study selection criteria

Selection of the articles to be included in the meta-analysis was conducted in two phases. Firstly, the studies had to fulfill the following selection criteria: a) the study had to apply a specific treatment to a sample of sex offenders –both adults and legal minors–; b) the study had to examine the treatment effectiveness, comparing the treated sex offenders' recidivism rates with those of a control group of sex offenders; c) the subjects in the control group could have received a treatment that was non-specific for sex offenders or no form of treatment. Of the 117 studies selected, only 20 complied with these criteria −10 of them had not been previously analyzed in other meta-analyses (Abracen, Looman, Ferguson, Harkins & Mailloux, 2011; Duwe, 2013; Olver, Nicholaichuk & Wong, 2012; Olver, Wong & Nicholaichuk, 2009; Redondo-Illescas, 2006; Redondo-Illescas & Garrido-Genovés, 2008; Smid, Kamphuis, Wever & Van Beek, 2014; Valencia, Andreu, Mínguez & Labrador, 2008; Worling, Litteljohn & Bookalam, 2010; Zgoba & Simon, 2005). Articles based on the same sample of subjects (Redondo-Illescas, 2006; Redondo-Illescas & Garrido-Genovés, 2008; Zgoba & Levenson, 2008; Zgoba & Simon, 2005) were treated as a single study, reducing the total to 18 studies.

Secondly, the studies had to comply with certain minimum levels of quality. To do so, the articles were independently graded by two evaluators following CODC directives (2007). According to these directives, a high-quality study is one that has a high degree of confidence that the treatment effect has been estimated with a minimum degree of bias; to verify this, each study must be graded on 21 individual items grouped into 7 categories (administrative control of independent variables, experimenter expectancies, sample size, attrition, equivalence of groups, outcome variables, correct comparisons conducted). With the aim of obtaining all the required information, the authors were contacted when required. Bearing in mind the grade given by

both evaluators ($\varkappa$ = .79), no study was classified as strong, 7 studies were classified as good, 10 as weak and 1 was rejected (Valencia et al., 2008), leaving a total of 17 studies. The detailed grading is available upon request.

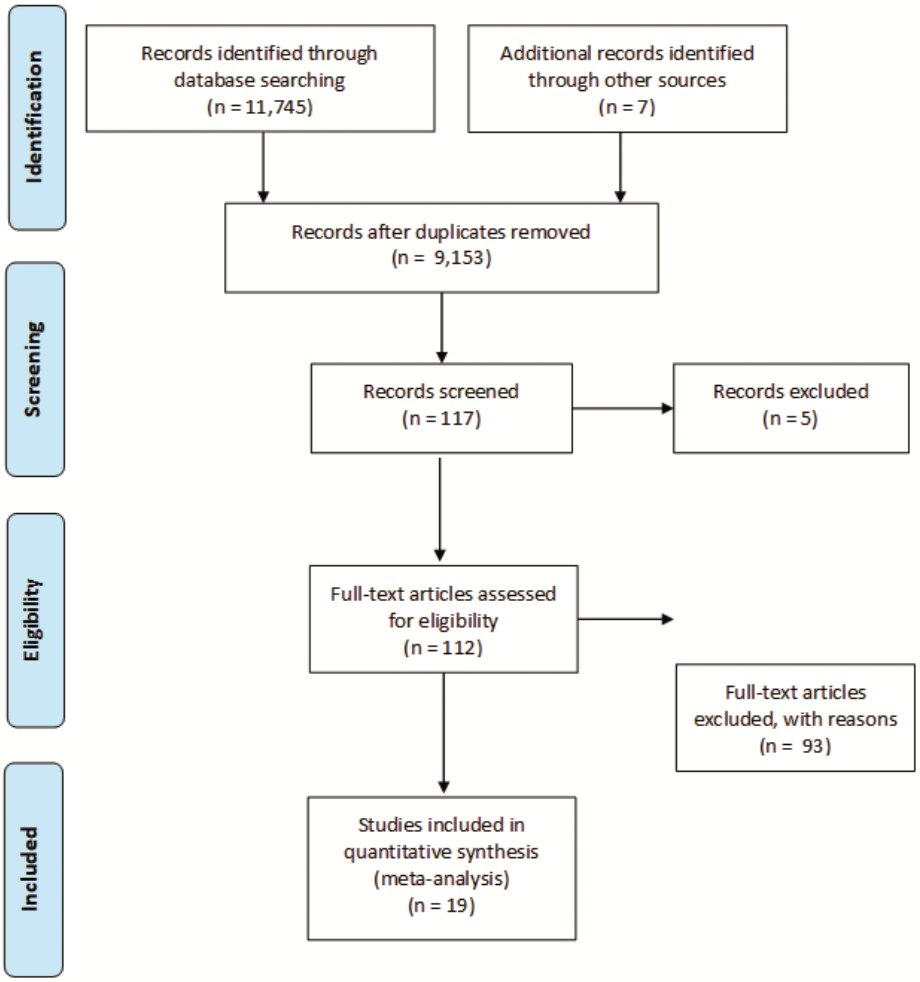

Figure 1. Literatura search procedure.

Coding of variables

With the objective of examining the influence of the characteristics of the study on effect sizes, variables related to treatment, participants and the methodology employed in the studies were all codified, as were general descriptors.

The general descriptors codified were: a) publication type (peer-reviewed, non-peer- reviewed); b) origin of the study (Canada, USA, Europe, others).

Regarding the methodology employed by the studies, the following was codified: a) the design employed (randomized, non-randomized); b) the total sample size; c) follow-up length (in years); d) definition of recidivism (new arrest, new conviction, new arrest and/or new conviction).

The characteristics of participants codified were: a) age of participants (adults, adolescents); b) gender of participants (% males); c) age of the victim (adults, children). The treatment characteristics codified were: a) treatment type (cognitive-behavioral therapy (CBT), CBT with relapse prevention (RP), MST, social support, and mixed); b) treatment location (in an institution, in an institution and in the community, solely in the community); c) treatment format (group, individual, group and individual); e) average treatment length (number of months).

In order to assess the reliability of the coding process, two researchers codified the studies independently. The average kappa coefficient (Cohen, 1960) was .88, the least degree of agreement ($\varkappa$ = .70) occurred regarding the definition of recidivism that each study employed, while agreement was total regarding the characteristics of participants and the general descriptors. The code book is available on request.

Characteristics of the included studies

The characteristics of the included studies were summarized in *Table 1 and 2*, although several studies did not pro-

vide all the information needed for each category (recidivism definition, age of the victims, treatment format and treatment length).

Table 1. Analyzed treatment programs.

Study	Treatment program
1. Abracen et al., 2011	Regional Treatment Centre Sex Offender Treatment Program (RTCSOTP)
2. Borduin et al., 2009	Multisystemic therapy for juvenile sex offenders
3. Craissati et al., 2009	Challenge Project
4. Duwe, 2013	Circles of Support and Accountability (COSA)
5. Duwe & Goldman, 2009	Transitional Sex Offender Treatment Program (SOTP)
6. Hanson et al., 2004	Community Sex Offender Program (CSOP)
7. Harkins, 2004	Regional Treatment Centre Sex Offender Treatment Program (RTCSOTP)
8. Lambie & Stewart, 2012	Community-based programs for child sexual offenders
9. Marques et al., 2005	Sex Offender Treatment and Evaluation Project (SOTEP)
	Correctional Service of Canada (CSC) Sex Offender
10. Olver et al., 2012	Treatment Program
11. Olver et al., 2009	Clearwater Program
12. Redondo-Illescas, 2006; Redondo- Illescas & Garrido-Genovés, 2008	Control de la Agresión Sexual (CAS)
13. Smid et al., 2014	Dutch mandatory inpatient sex offender treatment
14. Ternowski, 2004	Stave Lake Correctional Centre (SLCC) Treatment Program
15. Wilson et al., 2005	Circles of Support and Accountability (COSA)
16. Worling et al., 2010	Sexual Abuse: Family Education and Treatment Program (SAFE-T)
17. Zgoba & Levenson, 2008; Zgoba & Simon, 2005	Adult Diagnostic Treatment Center (ADTC) sex offenders' treatment program

The average total size of the sample was 393 subjects (ranging from 48 to 2,040 subjects). The average monitoring period ranged from 2 to 12.33 years (average mean =5.86 years).

Most studies focused on adult men (k = 15), while two studies contained a sample of adolescents, including women (less than 10% of the total sample). The average treatment length was 16.11 months (ranged from 7.5 to 36 months), though only twelve studies included this information.

Table 2. Characteristics of the studies.

Categories	k	Studies
General descriptors		
Publication type		
Peer-reviewed	14	1-6, 8-13, 16, 17
Non-peer-reviewed	3	7, 14, 15
Origin of the study		
Canada	8	1, 6, 7, 10, 11, 14-16
USA	5	2, 4, 5, 9, 17
Europe	3	3, 12, 13
Methodological characteristics		
Study design		
Randomized	3	2, 4, 9
Non-randomized	14	1, 3, 5-8, 10-17
Total sample size		
≤ 100	2	2, 4
> 100 ≤ 500	11	1, 3, 7- 9, 12-17
> 500	4	5, 6, 10, 11
Follow-up length		
≤ 5 years	6	4, 7, 8, 11, 12, 15
> 5 years	11	1-3, 5, 6, 9, 10, 13, 14, 16, 17
Definition of recidivism		
New arrest	5	2, 4, 5, 9, 16
New conviction	7	1, 3, 7, 8, 10, 11, 17
Both	4	6, 13-15
Characteristics of participants		
Age of participants		
Adults	15	1, 3-15, 17
Adolescents	2	2, 16
Gender of participants		
Only men	15	1, 3-15, 17
Including females	2	2, 16
Age of the victims		
Adults & children	14	1-3, 5-7, 9, 11, 13-17
Only children	1	8
Treatment characteristics		
Treatment type		
CBT	2	7, 10
CBT + RP	7	1, 8, 9, 11, 12, 14, 17
MST	2	2.16
Social support	2	4, 15
Mixed	4	3, 5, 6, 13
Treatment location		
Institution	8	1, 5, 7, 10, 11, 13, 14, 17
Community	6	2, 3, 6, 8, 15, 16
Both	3	4, 9, 12
Treatment format		
Individual	3	2, 4, 15
Group + individual	13	1, 3, 5-14, 16
Treatment length		
≤ 12 months	6	2, 4, 10-12, 14
> 12 months	6	3, 5, 8, 9, 13, 16
≤ 12 months	6	2, 4, 10-12, 14

Note. CBT = cognitive-behavioral therapy; RP = relapse prevention; MST = multisystemic therapy. k = number of studies.

Calculation of the treatment effect size

To calculate the treatment effect, the rates of sexual, violent and general recidivism of subjects were analyzed and those belonging to the control group, projected onto 2x2 tables. Besides, chi-square tests (χ^2) were conducted to compare the percentages of recidivism in both groups.

The unit of analysis was an individual study and weighting of the effect size of each study was applied according to the inverse of its standard error (related to the sample size). Studies with a smaller standard error and a larger sample size were given a greater weight in calculating the overall effect size (Borenstein, Hedges, Higgins & Rothstein, 2009).

Following the recommendations concerning the analysis of dichotomous outcomes (Higgins & Green, 2011), the statistic employed for measuring the treatment's effect size was the *OR*. Calculation of the *OR* was done using both the fixed-effects and the random-effects model −under which the true effects in the studies are assumed to vary between studies and the summary effect is the weighted average of the effects reported in the different studies (Borenstein et al., 2009)− (both reported in tables). Given that all the studies were not functionally equivalent −subjects and interventions in the analyzed studies differed in ways that impacted on the results− a common effect size could not be assumed (Borenstein, Hedges, Higgins & Rothstein, 2010; Hedges & Vevea, 1998), therefore the study effects were integrated using a random-effects model. When value 1.0 did not fall within the confidence interval at 95%, the *OR* was considered statistically significant ($p < .05$) (Higgins & Green, 2011).

The presence of heterogeneity between the studies was calculated using Cochran's *Q* Test (using a significance cut-off point of .10) and the statistic I^2, whose value ranged between 0% and 100% –the values above 30% being heterogeneity indicators– (Higgins & Green, 2011).

All the statistical analyses were performed using the computer program *MedCalc Statistical Software* version 15.8.

Results

Treatment effect on sexual recidivism and analysis of the moderating variables

In total, 17 studies were analyzed, which included 3,659 treated sex offenders and 3,022 belonging to the control group. The percentage of sexual recidivism observed in the total sample (n = 6,681) was 15.30%, (weighted mean (*WM*)).

The rate of sexual recidivism of the treated subjects ranged between 0.00% and 22.55% (*WM* = 13.12%), while the control groups ranged between 3.23% and 45.83% (*WM* = 17.94%) ($\chi^2 = 29.30$; $p < .001$). In 12 of the 17 studies, the rate of sexual recidivism of the group of subjects treated was lower than the control group.

The *OR* of the effect of treatment on sexual recidivism ranged from 0.11 to 1.75, with a *WM* of .69 (random-effects) ($z = -2.90$; $p <. 01$; *95% CI = .54 - .89*) (*see Figure 2*). The heterogeneity between the studies ($Q\ (16) = 34.24$; $p < .01$. $I^2 = 53.27\%$; *95% CI* =18.94 - 73.06) was considerable.

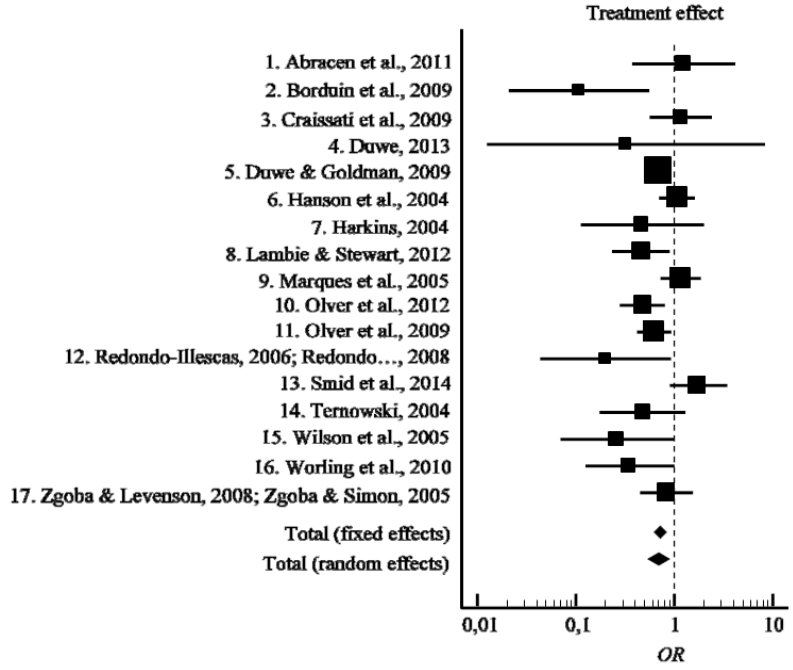

Figure 2. Meta-analysis of the effect of treatment on sexual recidivism rates.

Note. The size of the markers that represent the effects of the studies vary in size according to the weights assigned to the different studies. Diamonds represent the pooled effects (the location of the diamond represents the estimated effect size and the width of the diamond reflects the precision of the estimate).

Regarding the analysis of the moderating variables (*see Table 3*), significant differences were observed between published and non-published studies, as well as the influence of the follow-up length. Nevertheless, randomization of the studies or the type of recidivism analyzed did not influence the treatment effect obtained.

Table 3. Analysis of the moderating variables on the treatment effect.

Moderating variables	*k*	Fixed effects		Random effects		*Q*	I^2
		OR	*95% CI*	*OR*	*95% CI*		
Publication type						2.62	**61.87%**
Peer-reviewed	14	.74***	.64 - .85	.73*	.57 - .96		
Non-peer-reviewed	3	.39**	.20 - .78	.40*	.20 - .81		
Study design						1.41	29.23%
Randomized	3	.90	.59 - 1.38	.40	.06 - 2.5		
Non-randomized	14	.70***	.61 - .82	.69**	.54 - .88		
Follow-up length						2.96	**66.24%**
≤ 5 years	6	.51***	.37 - .69	.52***	.38 - .71		
> 5 years	11	.79**	.68 - .92	.80	.59 - 1.07		
Definition of recidivism						2.69	25.73%
New arrest	5	.71**	.58 - .86	.60	.34 - 1.06		
New conviction	7	.65***	.51 - .83	.65**	.50 - .85		
Both	4	1	.72 - 1.38	.84	.44 - 1.62		
Age of participants						**4.89***	**79.56%**
Adults	15	.75***	.65 - .86	.75*	.59 - .95		
Adolescents	2	.25**	.10 - .60	.23*	.08 - .71		
Treatment type						**11.57***	**65.44%**
CBT	2	.47**	.29 - .79	.47**	.29 - .79		
CBT + RP	7	.72**	.57 - .91	.70*	.49 - .99		
MST	2	.25**	.10 - .60	.23*	.08 - .71		
Social support	2	.27*	.08 - .94	.27*	.08 - .94		
Mixed	4	.83	.69 - 1.01	1.02	.67 - 1.54		
Treatment location						2.59	22.78%
Institution	8	.70***	.59 - .83	.72*	.55 - .93		
Community	6	.71*	.54 - .94	.53*	.29 - .98		
Both	3	.92	.60 - 1.41	.54	.14 - 2.16		
Treatment format						**6.27***	**84.05%**
Individual	3	.19**	.07 - .52	.19**	.07 - .53		
Group + individual	13	.74***	.64- .86	.74*	.58 - .96		
Treatment length						**11.07*****	**90.96%**
≤ 12 months	6	.49***	.37 - .66	.47***	.33 - .69		
> 12 months	6	.78**	.65 - .93	.84	.56 - 1.25		

Note. CBT = cognitive-behavioral therapy; RP = relapse prevention; MST = multisystemic therapy.
* $p < .05$; ** $p < .01$; *** $p < .001$.
Q and I^2: between-groups heterogeneity measures. Values in bold indicate differences between the groups.

All the treatment modalities were shown to be effective both in adults (*OR* = .75) and adolescents (*OR* = .23), excepting mixed treatments (those that combined diverse models and intervention types). The treatment that displayed the greatest effect size was MST (*OR* = .23), followed by interventions based on social support provided by volunteers (*OR* = .27). CBTs and those including the RP were also effective, although they displayed less robust treatment effects (*OR* = .47 and .70 respectively). The individualized treatments and those with a duration of less than or equal to one year displayed the largest effects, although such effects did not depend on the treatment location (institution or community).

Effect of treatment on violent recidivism

In total, 11 studies were analyzed, which included 3,028 treated sex offenders and 2,423 belonging to the control group. The percentage of violent recidivism (including sexual) observed in the total sample (n = 5,451) was 27.10% (*WM*).

The rate of violent recidivism of the treated subjects ranged between 9.82% and 38.89% (*WM* = 25.50%), while the control groups ranged between 11.56% and 44.23% (*WM* = 29.1%) ($\chi^2 = 8.65$; $p < .01$). In 7 of the 11 studies, the rate of violent recidivism of the treated group was lower than the control group.

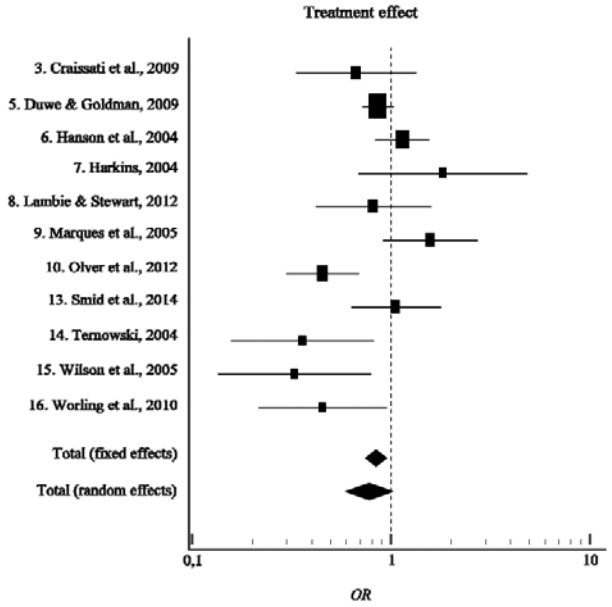

Figure 3. Meta-analysis of the effect of treatment on violent recidivism rates. *Note.* The size of the markers that represent the effects of the studies vary in size according to the weights assigned to the different studies. Diamonds represent the pooled effects (the location of the diamond represents the estimated effect size and the width of the diamond reflects the precision of the estimate).

The *OR* of the treatment effect on violent recidivism ranged from 0.33 to 1.83 with a *WM* .78 (random-effects) (*see Figure 3*). Nevertheless, the inclusion of the value 1.0 within the confidence interval at 95% of the OR indicated that violent recidivism rates in the treatment groups were not significantly different from the control groups (z = -1.79; p > .05; *95% CI* = .59 - 1.02). The analyses showed heterogeneity between studies (*Q (10)* = 31.46; p < .001. I^2 = 68.22%; *95% CI* = 40.4 - 83.05).

Effect of treatment on general recidivism

In total, 10 studies were analyzed, which included 2,072 treated sex offenders and 1,866 belonging to the control group. The percentage of general recidivism (any type of recidivism) observed in the total sample (n = 3,938) was 49.31% (*WM*).

The rate of general recidivism of the treated subjects ranged between 6.12% and 62.67% (*WM* = 46.53%), while the control groups ranged between 18.60% and 58.14% (*WM* = 52.41%) (χ^2 = 13.35; p < .001). In 9 of the 10 studies, the rate of general recidivism of the group of subjects treated was lower than the control group.

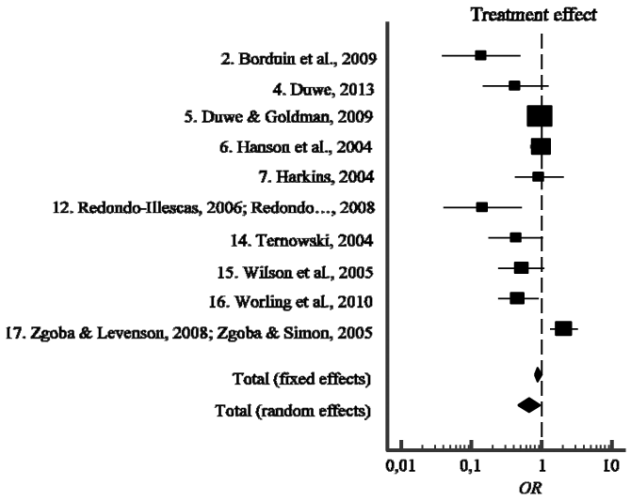

Figure 4. Meta-analysis of the effect of treatment on general recidivism rates *Note.* The size of the markers that represent the effects of the studies vary in size according to the weights assigned to the different studies. Diamonds represent the pooled effects (the location of the diamond represents the estimated effect size and the width of the diamond reflects the precision of the estimate).

The *OR* of the treatment effect on general recidivism ranged from 0.15 to 2.08 with a *WM* of .66 (random-effects) (z = -2.22; p < .05; *95% CI = .45 - .95*) (*see Figure 4*). The analyses showed heterogeneity between the studies (*Q (9)* = 39.78; p < .001. I^2 = 77.38%; 95% *CI* = 58.48 - 87.67).

Analysis of the quality of studies as a moderating variable of the treatment effect

Statistically significant differences were observed (I^2 > 30%) in the effect size of the treatment among those studies classified as good and those classified as weak. These differences were observed both when calculating the treatment effect in terms of sexual recidivism and when observing its effect on violent and general recidivism rates *(see Table 4).* Therefore, when solely analyzing those studies of a good quality, a significant treatment effect was not observed on the rates of sexual recidivism (*OR* = .93; z = -0.36; p > .05), violent recidivism (*OR* = 1.05; z = 0.42; p > .05) or general recidivism (*OR* = .73; z = -1.44; p > .05*)* of the treated subjects. Nevertheless, when separately analyzing the studies classified as qualitatively weak, a significant treatment effect was observed on the rates of sexual recidivism (z = -4.43; p < .001) and violent recidivism (z = - 3.08.42; p < .01), but not on the general recidivism rates (z = -1.35; p > .05*)* of these subjects *(see Figure 5).*

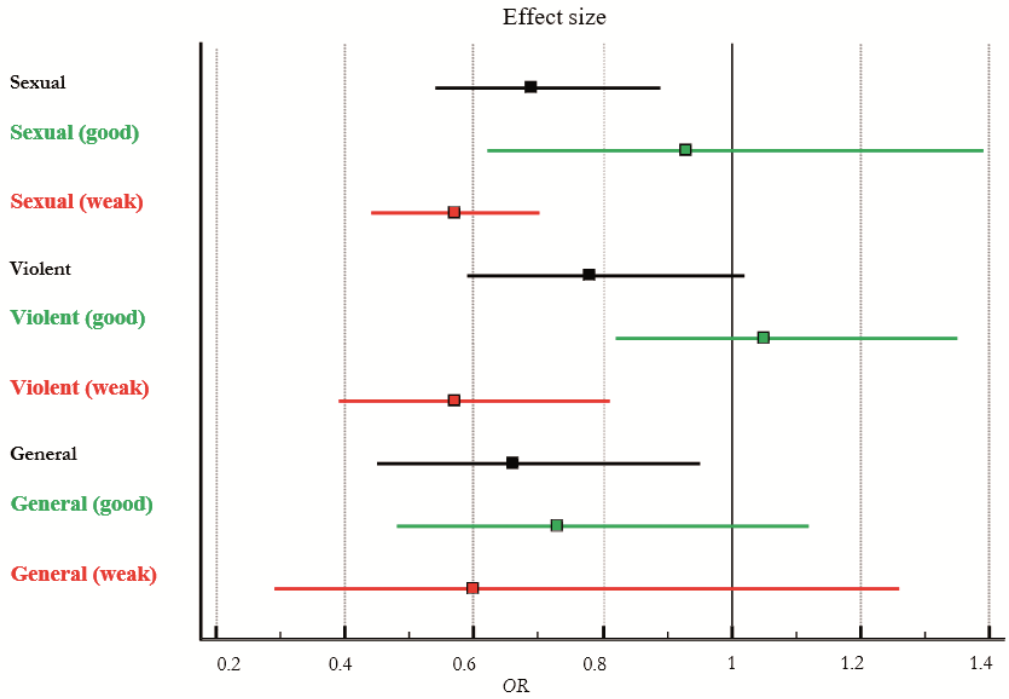

Figure 5. Effect of treatment according to the quality of the studies.
Note. When confidence intervals do not cross the null-effect line (*OR* = 1), effect size values are considered statistically significant ($p < .05$).

Table 4. Effect of treatment according to the quality of the studies.

Recidivism type	*k (n)*	Fixed effects		Random effects		*Q*	I^2	Studies
		OR	*95% CI*	*OR*	*95% CI*			
Sexual						**8.31****	**87.96%**	
Good	7 (3687)	.84*	.70 – .99	.93	.62 – 1.39			1, 2, 4, 5, 7, 9, 13
Weak	10 (2994)	.57***	.46 - .71	.57***	.44 - .73			3, 7, 8, 10-12, 14-17
Violent (including sexual)						**4.06***	**75.34%**	
Good	4 (3459)	.97	.84 – 1.13	1.05	.82 – 1.35			5, 6, 9, 13
Weak	7 (1992)	.56***	.43 - .72	.57**	.39 - .81			3, 7, 8, 10, 14-16
General (any type)								
Good	4 (2874)	.91	.78 – 1.05	.73	.48 – 1.12	**7.75****	**87.1%**	2, 4-6
Weak	6 (1064)	.84	.64 – 1.10	.60	.29 – 1.26			7, 12, 14-17

Note. *k* = number of studies
* $p < .05$; ** $p < .01$; *** $p < .001$
Q and I^2: between-groups heterogeneity measures. Values in bold indicate differences between the groups.

Discussion and conclusions

The aim of the present study was to conduct a meta-analysis of studies measuring the effects of sexual offense treatment programs on three types of recidivism: sexual, violent and general. Reported results showed that sexual, violent and general recidivism rates of treated sex offenders were lower than those observed in the control groups (Sexual recidivism: 13.12% vs. 17.94%; $p < .001$. Violent recidivism: 25.5% vs. 29.1%; $p < .01$. General recidivism: 46.53% vs. 52.41%; $p < .001$); results highly similar to those obtained in prior meta-analyses (Reitzel & Carbonell, 2006; Schmucker & Lösel, 2015), although based solely on recent studies (from 2004 to 2014). Following Herrero (2013), we can confirm that re-offending sex offenders who commit new sexual offences (15.30%), constitute a minority within this type of crime. However, despite the low sexual recidivism rates observed (Andrés-Pueyo & Redondo-Illescas, 2007; Hanson & Morton-Bourgon, 2009), the social alarm that this type of recidivism generates requires greater effectiveness in interventions for sex offenders (Herrero, 2013). The high rates of general recidivism observed (49.31%) might be due to the importance of the combination of the antisocial characteristics of these individuals with sexual deviation, as precursors to sexual offending. Sexual deviation has been found to predict exclusively sexual recidivism, while antisocial characteristics have been found to predict all types of recidivism (e.g., Hanson & Morton-Bourgon, 2005; Brouillette-Alarie, Babchishin, Hanson, & Helmus, 2016). Therefore, if therapists aim to reduce the risk of non-sexual recidivism, they should

work on antisocial characteristics in addition to sexual deviation, which would suggest the need to apply interventions for common offenders in combination with specific treatments for sex offenders (Duggan & Dennis, 2014; Herrero, 2013). In this regard, an analysis of antisociality measures o at least the criminal history of these individuals would provide key information.

The effect size obtained showed the effectiveness of treatment in reducing sexual recidivism rates (*OR* = .69; $p <$ .01) and general recidivism rates (*OR* = .66; $p < .05$) of the subjects treated. Nevertheless, the effect size obtained regarding reduction of violent recidivism rates was not significant (*OR* = .78; $p > .05$): there were no significant differences in the commission of new violent crimes (including sexual violent crimes) among treated subjects and subjects within the control groups, as pointed previously by Hanson et al. (2009). As stated by Marshall & Marshall (2007) and Seto et al. (2008), conducting RCTs of sex offender treatment imply many practical and structural difficulties, which has forced the inclusion of studies that do not ensure perfect control groups (sex offenders that have received no form of treatment). Thus, the subjects in the control groups in the studies analyzed may have received non-specific treatment for sexual offending, a treatment that may have influenced their violent recidivism rates, making them comparable in some cases with those subjects undergoing specific treatments for sexual offending. On the other hand, it is possible that specifically tailored sex offender treatment programs focus on working sexual deviations rather than general violent behaviors (Duggan & Dennis, 2014).

In addition, several moderating variables were assessed, in particular the impact of study methodological quality on study findings. Regarding the type of treatment employed, MST was the most effective intervention in reducing sexual recidivism rates (*OR* = .23; $p < .05$); although it should be highlighted that the lack of specific studies on this type of intervention ($k = 2$; $n = 196$) meant that only the effectiveness of this therapy on adolescents was analyzed, which was likewise the only intervention applied to this collective (Hanson et al., 2009; Schmucker & Lösel, 2015). According to MST principles (Henggeler et al., 2009b), the effectiveness of interventions stems from attending to all those risk factors for an antisocial behavior in adolescents (e.g., few skills in resolving problems in youth, little supervision and ineffective discipline within their families, relations with other offenders or poor performance in school) through the individualization of the therapy, at the same time as the protective factors for juveniles are increased (Henggeler et al., 2009a). Regarding interventions based on social support provided by volunteers, the results also showed significant treatment effects (*OR* = .27; $p < .05$); although the aforesaid effect could be due to the individualization of this type of intervention, or the smaller number of studies analyzed ($k = 2$; $n = 182$). While the inclusion of RP in CBTs reduced the effectiveness of such interventions.

Methodological limitations −the greater number of studies analyzed (2 vs. 7) and the presence of heterogeneity among the studies that combined both models− could explain why RP was found to be less effective than other types of CBT, yet it could also be because RP is truly less effective than general CBT. Further studies are needed in this regard.

In addition, the unnecessary prolonging of treatments should be highlighted, since shorter programs (one year or less) showed bigger effects (*OR* = .47; $p < .001$) than longer programs, which did not show a significant treatment effect (*OR* = .84; $p > .05$). Research regarding the most appropriate length of interventions is scarce, and practice varies substantially across jurisdictions (Smid, Kamphuis, Wever & Verbruggen, 2015; Yates, 2013); however, specialized literature suggests the adverse effect of long interventions may come about by the disruption of the prosocial activities and social circles (school, employment, etc.) of these individuals (Lowenkamp, Latessa, & Holsinger, 2006).

Nevertheless, these results must be interpreted cautiously since of the 17 studies analyzed, only 7 were of a good methodological quality according to the CODC directives (2007) and none of them was classified as strong. The estimated effect of treatment varied significantly when restricting our meta-analysis to those studies that complied with the standards of *good quality*; an analysis that did not enable us to demonstrate the effectiveness of the treatments analyzed in reducing sexual, violent and general recidivism rates. In general, poor quality studies do not ensure reported treatment effects are not due to chance, and tend to show greater effect sizes than better quality studies. In this case, the inclusion of longer monitoring periods in the better-quality studies (average follow-up length: 7.74 years vs. 6.75 years) could be one of the reasons why the recidivism rates of the treated subjects were comparable to those of the subjects in the control groups. As reported previously (*see Table 3*), studies including monitoring periods over 5 years did not show significant effect sizes, which might mean that treatment could only delay recidivism, rather than prevent it. On the one hand, the longer the follow-up the higher the range in which recidivism outcomes can be demonstrated. On the other hand, the more time passes after the end of the treatment, the more likely it is that a treated offender encounters risk influences in his life, thus supposedly reducing the impact of treatment (Schmucker & Lösel, 2015).

The stay of a sex offender in prison should constitute an opportunity to become effectively socially rehabilitated, and not be a manner of keeping the subject away from society during the time that his or her sentence stipulates, with a view to returning. The financial expenditure it means for the State to institutionalize these persons requires the application of treatment programs whose effect has been empirically demonstrated, adapted to the rehabilitation needs of each type of sex offender (Hanson et al., 2009).

Recent trends point toward a differentiation on the therapeutic interventions according to specific criminal typologies (Soldino & Carbonell-Vayá, 2016) −e.g. specific treatment programs for child sexual offenders (Lambie & Stew-

art, 2012) or Internet sex offenders (Herrero et al., 2015; Middleton, Mandeville-Norden, & Hayes, 2009)−, in order to respond to their particular therapeutical needs. Thus, additional primary research on new treatment approaches is required for future meta-analysis to identify which target groups respond best to specific techniques and which combination of treatments is most effective (Kim, Benekos & Merlo, 2016).

For this purpose, new and better studies are needed that include longer monitoring periods, especially regarding treatments applied in Europe, MST and social support programs, and those programs specifically for adolescents. In this regard, the improvement of the quality of studies do not need to increase their cost (Hanson et al., 2009), yet they could help us to reduce bias and make reliable data available. Evidently, the publication of these studies should not be limited to those showing significant effects of treatment, since the opposite could generate false expectations on their effectiveness, which would, in any case, harm both those subjects sentenced for sexual offenses, and society, in its efforts to achieve true social rehabilitation.

Aknowledgements.- This research was partially supported by an FPU grant, funded by the Spanish Ministry of Education, Culture and Sport.
We thank Víctor Garrigós for assistance with coding, and Carlos López-Pinar for comments that greatly improved the manuscript.

References

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

*Abracen, J., Looman, J., Ferguson, M., Harkins, L., & Mailloux, D. (2011). Recidivism among treated sexual offenders and comparison subjects: Recent outcome data from the Regional Treatment Centre (Ontario) high-intensity Sex Offender Treatment Programme. *Journal of Sexual Aggression*, *17*(2), 142-152. doi:10.1080/13552600903511980

Andrés-Pueyo, A., & Redondo-Illescas, S. (2007). La predicción de la violencia: entre la peligrosidad y la valoración del riesgo de violencia. *Papeles del Psicólogo, 28*(3), 157-173.

Andrews, D. A., & Bonta, J. (2010). *The psychology of criminal conduct* (5ª ed.). New Providence, New Jersey: LexisNexis Matthew Bender.

*Borduin, C. M., Schaeffer, C. M., & Heiblum, N. (2009). A randomized clinical trial of multisystemic therapy with juvenile sexual offenders: effects on youth social ecology and criminal activity. *Journal of Consulting and Clinical Psychology*, 77(1), 26-37. doi:10.1037/a0013035

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. West Sussex, UK: John Wiley.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2010). A basic introduction to fixed effect and random effects models for meta-analysis. *Research Synthesis Methods, 1*, 97-111.

Brouillette-Alarie, S., Babchishin, K. M., Hanson, R. K., & Helmus, L. M. (2016). Latent constructs of static risk scales for the prediction of sexual recidivism: A 3-factor solution. *Assessment*, *23*(1), 96-111. doi:10.1177/1073191114568114

Collaborative Outcome Data Committee. (2007). *The Collaborative Outcome Data Committee's guidelines for the evaluation of sexual offender treatment outcome research Part 2: CODC guidelines*. Ottawa, Canada: Public Safety Canada.

Retrieved from http://www.publicsafety.gc.ca/res/cor/rep/codc-eng.aspx Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20*(1), 37–46. doi:10.1177/001316446002000104

*Craissati, J., South, R., & Bierer, K. (2009). Exploring the effectiveness of community sex offender treatment in relation to risk and re-offending. *Journal of Forensic Psychiatry & Psychology*, *20*(6), 769-784. doi:10.1080/14789940903174105

Dennis, J. A., Khan, O., Ferriter, M., Huband, N., Powney, M. J., & Duggan, C. (2012). Psychological interventions for adults who have sexually offended or are at risk of offending. *Cochrane Database of Systematic Reviews, 12* (Art. No. CD007507). doi:10.1002/14651858.CD007507.pub2

Duggan, C., & Dennis, J. (2014). The place of evidence in the treatment of sex offenders. *Criminal Behaviour and Mental Health, 24*, 153-162. doi:10.1002/cbm.1904

*Duwe, G. (2013). Can Circles of Support and Accountability (COSA) work in the United States? Preliminary results from a randomized experiment in Minnesota. *Sexual Abuse: Journal of Research and Treatment, 25*(2), 143-165. doi:10.1177/1079063212453942

*Duwe, G., & Goldman, R. A. (2009). The impact of prison-based treatment on sex offender recidivism: Evidence from Minnesota. *Sexual Abuse: A Journal of Research and Treatment, 21*(3), 279-307. doi:10.1177/1079063209338490

Garrido, V., & Beneyto, M.J. (1996). *El control de la agresión sexual. Un programa de tratamiento para delincuentes sexuales en prisión y en la comunidad*. Valencia: Ed. Cristóbal Serrano Villalba.

Grønnerød, C., Grønnerød, J. S., & Grøndahl, P. (2015). Psychological treatment of sexual offenders against children: A meta-analytic review of treatment outcome studies. *Trauma, Violence & Abuse*, *16*(3), 280-290. doi:10.1177/1524838014526043

Hanson, R. K., Bourgon, G., Helmus, L., & Hodgson, S. (2009). The principles of effective correctional treatment also apply to sexual offenders: A meta-analysis. *Criminal Justice and Behavior, 36*(9), 865-891. doi:10.1177/0093854809338545

*Hanson, R. K., Broom, I., & Stephenson, M. (2004). Evaluating community sex offender treatment programs: A 12-year follow-up of 724 offenders. *Canadian Journal of Behavioural Science, 36*(2), 87-96. doi:10.1037/h0087220

Hanson, R. K., & Morton-Bourgon, K. E. (2005). The characteristics of persistent sexual offenders: A meta-analysis of recidivism studies. *Journal of Consulting and Clinical Psychology, 73*(6), 1154-1163

Hanson, R. K., & Morton-Bourgon, K. E. (2009). The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis of 118 prediction studies. *Psychological Assessment, 21*(1), 1–21. doi:10.1037/a0014421

Hanson, R. K., & Yates, P. M. (2013). Psychological Treatment of Sex Offenders. *Current Psychiatry Reports*, *15*(3), 348.

*Harkins, L. (2004). Recidivism and within-treatment change among treated sex offenders and matched comparison subjects. *Masters Abstracts International, 43*(3), 993 (UMI No. MQ95168).

Hedges, L. V., & Vevea, J. L. (1998). Fixed-and random-effects models in meta- analysis. *Psychological methods, 3*(4), 486-504.

Henggeler, S. W., Letourneau, E. J., Chapman, J. E., Borduin, C. M., Schewe, P. A., & McCart, M. R. (2009a). Mediators of change for multisystemic therapy with juvenile sexual offenders. *Journal of Consulting and Clinical Psychology, 77*(3), 451-462. doi:10.1037/a0013971

Henggeler, S. W., Schoenwald, S. K., Borduin, C. M., Rowland, M. D., & Cunningham, P. B. (2009b). *Multisystemic treatment of antisocial behavior in children and adolescents* (2ª ed.). New York, NY: Guilford Press.

Herrero, O. (2013). ¿Por qué no reincide la mayoría de los agresores sexuales? *Anuario de Psicología Jurídica, 23*, 71-77. doi:10.5093/aj2013a11

Herrero, O., Negredo, L., Lila, M., García, A., Pedrón, V., & Terreros, E. (2015). *Fuera de la Red: Programa de Intervención frente a la delincuencia sexual con menores en la Red*. Ministerio del Interior. Secretaría General Técnica.

Higgins, J. P. T., & Green, S. (2011). *Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0*. The Cochrane Collaboration. Retrieved from http://handbook.cochrane.org

Hopewell S., McDonald S., Clarke M. J., Egger M. (2007). Grey literature in meta- analyses of randomized trials of health care interventions. *Cochrane Database of Systematic Reviews*, *2*. Art. No.: MR000010. doi:10.1002/14651858.MR000010.pub3.

Kim, B., Benekos, P. J., & Merlo, A. V. (2016). Sex Offender Recidivism Revisited: Review of Recent Meta-analyses on the Effects of Sex Offender Treatment. *Trauma, Violence & Abuse, 17*(1), 105-117. doi:10.1177/1524838014566719

*Lambie, I., & Stewart, M. W. (2012). Community solutions for the community's problem: an evaluation of three New Zealand community-based treatment programs for child sexual offenders. *International Journal of Offender Therapy and Comparative Criminology, 56*(7), 1022-1036. doi:10.1177/0306624X11420099

Lösel, F., & Schmucker, M. (2005). The effectiveness of treatment for sexual offenders: A comprehensive meta-analysis. *Journal of Experimental Criminology, 1*(1), 117-146. doi:10.1007/s11292-004-6466-7

*Marques, J. K., Wiederanders, M., Day, D. M., Nelson, C., & Van Ommeren, A. (2005). Effects of a relapse prevention program on sexual recidivism: Final results from California's Sex Offender Treatment and Evaluation Project (SOTEP). *Sexual Abuse: A Journal of Research and Treatment, 17*(1), 79-107. doi:10.1177/107906320501700108

Marshall, W. L., & Marshall, L. E. (2007). The Utility of the Random Controlled Trial for Evaluating Sexual Offender Treatment: The Gold Standard or an Inappropriate Strategy? *Sexual Abuse: A Journal of Research and Treatment, 19,* 175-191. doi:10.1177/107906320701900207

Marshall, W. L., & Marshall, L. E. (2014). Psychological treatment of sex offenders: Recent innovations. *Sexual Deviation: Assessment and Treatment, 37*(2), 163- 171. doi:10.1016/j.psc.2014.03.006

Middleton, D., Mandeville-Norden, R., & Hayes, E. (2009). Does treatment work with Internet sex offenders? Emerging findings from the Internet Sex Offender Treatment Programme (i-SOTP). *Journal of Sexual Aggression, 15*(1), 5-19. doi:10.1080/13552600802673444

Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2ª ed.). New York, NY: Guilford Press.

*Olver, M. E., Nicholaichuk, T. P., Gu, D., & Wong, S. C. (2012). Sex offender treatment outcome, actuarial risk, and the aging sex offender in Canadian corrections: A long-term follow-up. *Sexual Abuse: A Journal of Research and Treatment, 25*(4), 396-422. doi:10.1177/1079063212464399

*Olver, M. E., Wong, S. C., & Nicholaichuk, T. P. (2009). Outcome evaluation of a high-intensity inpatient sex offender treatment program. *Journal of Interpersonal Violence, 24*(3), 522-536. doi:10.1177/0886260508317196

*Redondo-Illescas, S. (2006). ¿Sirve el tratamiento para rehabilitar a los delincuentes sexuales? *Revista Española De Investigación Criminológica*, *4*(6), 1-22.

*Redondo-Illescas, S., & Garrido-Genovés, V. (2008). Efficacy of a psychological treatment for sex offenders. *Psicothema, 20*(1), 4-9.

Reitzel, L. R., & Carbonell, J. L. (2006). The effectiveness of sexual offender treatment for juveniles as measured by recidivism: A meta-analysis. *Sexual Abuse: A Journal of Research and Treatment*, *18*(4), 401-421. doi:10.1177/107906320601800407

Rivera-González, G., Romero-Quintana, M. C., Labrador-Muñoz, M. A., & Serrano- Sáiz, J. (2006). *El control de la Agresión sexual: programa de intervención en el medio penitenciario. Manual del terapeuta.* Ministerio del Interior. Secretaría General Técnica.

Schmucker, M., & Lösel, F. (2008). Does sexual offender treatment work? A systematic review of outcome evaluations. *Psicothema, 20*(1), 10-19.

Schmucker, M., & Lösel, F. (2015). The effects of sexual offender treatment on recidivism: An international meta-analysis of sound quality evaluations. *Journal of Experimental Criminology, 11*(4), 597-630. doi:10.1007/s11292-015-9241-z

Seto et al. (2008). Good Science and Progress in Sex Offender Treatment Are Intertwined: A Response to Marshall and Marshall (2007). *Sexual Abuse: A Journal of Research and Treatment, 20*(3), 247-255. doi:10.1177/1079063208317733

Sherman, L., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., & Bushway, S. (1997). *Preventing crime: What works, what doesn't, what's promising. Report to the U.S. Congress*. Washington, DC.

*Smid, W. J., Kamphuis, J. H., Wever, E. C., & Van Beek, D. J. (2014). A quasi- experimental evaluation of high-intensity inpatient sex offender treatment in the Netherlands. *Sexual Abuse: A Journal of Research and Treatment*, *28*(5), 469- 85. doi:10.1177/1079063214535817

Smid, W. J., Kamphuis, J. H., Wever, E. C., & Verbruggen, M. C. (2015). Risk levels, treatment duration, and drop out in a clinically composed outpatient sex offender treatment group. *Journal of Interpersonal Violence, 30*(5), 727-743. doi:10.1177/0886260514536276

Soldino, V., & Carbonell-Vayá, E. J. (2016). Aspectos criminológicos de los delitos de pornografía infantil. In R. Arce, B. G. Amado, & M. Vilariño (Eds.), *IX Congreso Internacional de Psicología Jurídica y Forense. Libro de actas.* (p.239-242). Santiago de Compostela: Sociedad Española de Psicología Jurídica y Forense.

*Ternowski, D. R. (2004). Sex offender treatment: An evaluation of the Stave Lake Correctional Centre Program. *Dissertation Abstracts International, 66*(6), 3428B. (UMI No. NR03201).

Valencia, O. L., Andreu, J. M., Mínguez, P., & Labrador, M. A. (2008). Nivel de reincidencia en agresores sexuales bajo tratamiento en programas de Control de la Agresión Sexual. *Psicopatología Clínica Legal y Forense, 8,* 7-18.

Ward, T. (2010). The Good Lives Model of offender rehabilitation: Basic assumptions, etiological commitments, and practice implications. In F. McNeil, P. Raynor, & C. Trotter (Eds.), *Offender supervision: New directions in theory, research and practice* (pp. 41-64). New York, NY: Willan.

*Wilson, R. J., Picheca, J. E., & Prinzo, M. (2005). *Circles of Support & Accountability: An evaluation of the pilot project in South-Central Ontario.* (User Report R-168). Ottawa: Correctional Service Canada.

*Worling, J. R., Litteljohn, A., & Bookalam, D. (2010). 20-Year prospective follow-up study of specialized treatment for adolescents who offended sexually. *Behavioral Sciences and the Law, 28*, 46-57. doi:10.1002/bsl.912

Yates, P. M. (2013). Treatment of Sexual Offenders: Research, Best Practices, and Emerging Models. *International Journal of Behavioral and Consultation Therapy, 8*(3-4), 89-95.

*Zgoba, K. M., & Levenson, J. (2008). Variations in the recidivism of treated and nontreated sexual offenders in New Jersey: An examination of three time frames. *Victims & Offenders, 3*(1), 10-30. doi:10.1080/15564880701751639

*Zgoba, K. M., & Simon, L. M. J. (2005). Recidivism rates of sexual offenders up to 7 years later: Does treatment matter? *Criminal Justice Review, 30*(2), 155-173. doi:10.1177/0734016805284146

(Article received: 18-09-2016; revised: 08-02-2017; accepted: 20-02-2017)