

Promoting resilience in children with depressive symptoms

Óscar Sánchez-Hernández^{1*}, Francisco X. Méndez Carrillo¹ y Judy Garber²

¹ Universidad de Murcia. (España).

² Universidad de Vanderbilt, Nashville (EE.UU.).

Título: Promoción de la resiliencia en niños con sintomatología depresiva.

Resumen: Se llevó a cabo un estudio experimental con el objetivo principal de estudiar la eficacia de una intervención cognitivo-conductual inspirada en el Programa de Resiliencia de Pensilvania (PRP; Gillham, Jaycox, Reivich, Seligman y Silver, 1990; Seligman, Reivich, Jaycox y Gillham, 2005), como prevención de la depresión infantil en población escolar de Educación Primaria. Los componentes principales del programa son la modificación del estilo explicativo y la resolución de problemas interpersonales. Se hallaron diferencias estadísticamente significativas que indicaron que se produjo una fuerte mejora del pretest al postest en los participantes del grupo experimental con "alta sintomatología depresiva" en comparación con los controles. Los análisis cualitativos también señalaron esta tendencia. Se debaten distintas conclusiones a la luz de los resultados así como posibles futuras líneas de investigación.

Palabras clave: depresión infantil; estilo explicativo; prevención; optimismo; resiliencia

Abstract: A pilot study was conducted with the primary objective to study the effectiveness of a cognitive-behavioral intervention inspired by the Penn Resiliency Program (PRP; Gillham, Jaycox, Reivich, Seligman, & Silver, 1990; Seligman, Reivich, Jaycox, & Gillham, 2005), for the prevention of depression in students from primary education. The main components of the program include modifying explanatory style and resolving interpersonal problems. Results indicated that there was significant improvement from pre-test to post-test in the experimental group for children with "high depressive symptoms" compared with controls. Qualitative analysis were consistent with this trend. Conclusions in light of these results are discussed and potential directions for future research are recommended.

Key words: childhood depression; explanatory style; prevention; optimism; resilience.

Introduction

Interventions to promote psychological well-being and personal growth should be a top priority. Similarly, encouraging resilience in childhood and adolescence will help young people overcome the adversities they will face in their lives, whether consequences of daily stress (academic, social), vital crisis, and / or disaster naturals.

One reason to promote psychological resilience in childhood and adolescence is the negative consequences of emotional problems. Specifically, the World Health Organization notes that by 2020, depression will be the second leading cause of disability worldwide, second only to ischemic diseases, while in 2000 depression ranked fourth (see <http://www.who.int/topics/depression/en/>).

The point prevalence of major depression in the general child population are as follows: 0.5% for children under 6 years, 2.5% for children aged 6-12 years, and 6.5% for teens from 13 years (Méndez, Olivares & Ros, 2001).

The rates of comorbid disorders with child and adolescent depression are high, and include anxiety disorders, externalizing (defiant, antisocial) and substance abuse (Méndez, 1999). They are also more likely to smoke, use drugs, and attempt suicide (Covey, Glassman & Stetner, 1998; Garrison, Addy, Jackson, McKeown & Waller, 1991).

Young people with high, although subclinical levels of depression, experience academic and interpersonal difficulties similar to those found among youth diagnosed with mood disorders (Gotlib, Lewinsohn & Seeley, 1995).

Given its prevalence, role as one of the major risk factors for suicide (Bustamante & Florenzano, 2013; Sánchez-

Teruel, García-León & Muela-Martínez, 2014), and impact on the family environment and socio-economic outcomes, preventing depression in children and adolescents is considered of great importance not only for the health system, but also for society as a whole (Ferreira, Granero, Noorian, Acosta, & Domènech-Llaberia, 2012).

Despite the prevalence and impact of depression, it often goes undetected in children and adolescents. Therefore, investment in early detection, treatment, and prevention are needed to reduce its effects. Fortunately, in the last twenty years there has been increasing interest in the study of the effectiveness of interventions to prevent depression in young people worldwide (Horowitz & Garber, 2006).

However, in the Spanish culture, there has been an absence of such studies (Sánchez-Hernández, Méndez & Garber, 2014). Therefore, there is a need to invest in research of high methodological quality, given the benefits in personal, family, and social well-being possible with appropriate interventions.

Horowitz and Garber (2006) conducted a meta-analytic review of studies testing the efficacy of programs for the prevention of depression in children and adolescents. They concluded that programs that targeted at-risk youth (i.e., selective or indicated samples) had higher effect sized than studies using universal samples (Vázquez, Blanco, Torres, Otero & Hermida, 2014).

In a recent meta-analysis of Merry, Hetrick, Cox, Brudevold-Iversen & McDowell (2011), concluded that there is sufficient evidence to say that prevention programs for depression, targeted and universal, can prevent the onset of depressive disorders. For an even more recent review see Sánchez-Hernández et al. (2014).

Examples of programs to promote resilience are The Inner Resiliency Program (Lantieri, 2009) and the Penn Resiliency Program (PRP; Gillham et al., 1990). PRP stands out as

*** Dirección para correspondencia [Correspondence address]:**

Oscar Sánchez-Hernández. Facultad de Psicología. Campus Universitario de Espinardo. 30100. Murcia (España). E-mail: oscarsh@um.es

the prevention program for youth depression most widely evaluated (Gillham, Brunwasser, & Freres, 2008). It is based on the promotion of an optimistic explanatory style. In a meta-analysis of studies of the effectiveness of PRP, especially with depressive symptoms, by Brunwasser, Gillham and Kim (2009), 17 studies of 2,498 participants were identified. Evidence has been found for the efficacy of PRP in significantly reducing depressive symptoms through at least one year after the intervention ended.

The current experimental study aimed to investigate the effectiveness of a cognitive-behavioral intervention inspired by the PRP (Gillham et al., 1990; Seligman et al., 2005), as a

prevention of depressive symptoms in schoolchildren from Primary Education. The main components of the program are the modification of explanatory style and resolving interpersonal problems.

This study focused particularly on qualitative analyses and the effects of the intervention in participants with "high depressive symptoms" at pre-test. The main hypothesis was that the preventive intervention would reduce depressive symptoms in general, and especially in participants with "high depressive symptoms," defined as those who reported scores above the cutoff point of 24 on the CES-DC in the pretest, as used in other investigations (Clarke et al., 2001).

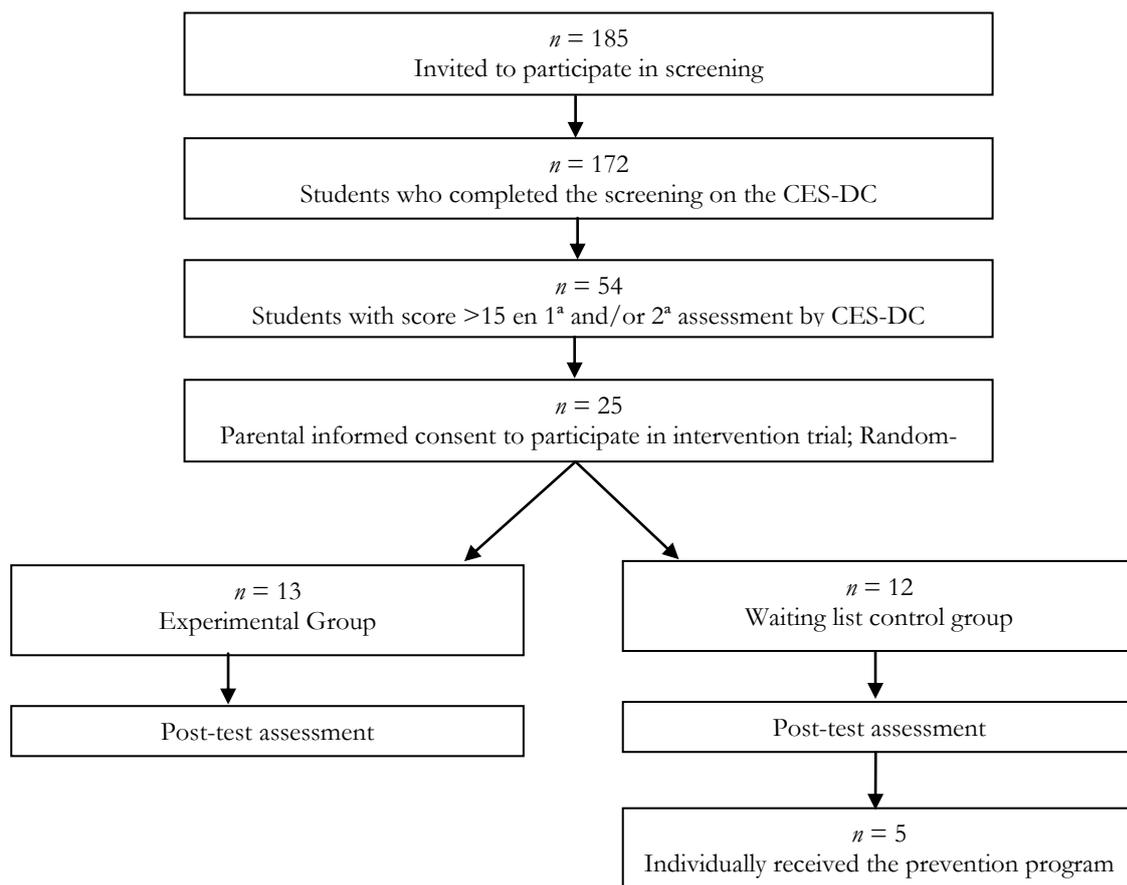


Figure 1. Flowchart of recruitment, selection and evaluation.

Method

Participants

The study involved 25 students, 10 to 12 years old ($M = 11.08$, $SD = 0.76$), 68% males, selected from 185 schoolchildren in grades 5 and 6 of Primary education in a concerted Murcia city school. Students were eligible if they met the cutoff score on the measure depression (see Assessment in-

struments section) at least once in the pretest and if their parents gave informed consent.

Participants were randomly assigned to the experimental group (preventive intervention) and control (waiting list). The mean age was similar: in the experimental group [$M = 11.23$ years ($SD = 0.83$)] and in the control group [$M = 11.00$ years ($SD = 0.85$)]. The proportion of males in the experimental group (54%) was lower than in the control group (83%), but this difference was not statistically significance ($\chi^2_1 = 2.49$; $p = .11$).

The average score on the measure of depressive symptoms at pretest was greater than 15 (the cutoff score used on the depression scale) in both groups: mean = 22.38 ($SD = 6.54$) in the experimental and mean = 19.52 ($SD = 8.03$) in the control group; this difference was not statistically significant ($t_{23} = 0.97$; $p = .34$). However, there were differences at the practical level between the groups of medium-low magnitude (Cohen, 1988) indicating that the experimental group had slightly higher levels of depressive symptoms ($d = -.38$). Figure 1 shows the phases of recruitment.

Study Design

A mixed 2 x 2 factorial design was used, with an inter factor (prevention program; waiting list) and an intra factor (pretest, posttest).

Instruments

The Center for Epidemiological Studies Depression Scale for Children (CES-DC; Weissman, Orvaschel, & Padian, 1980). The Spanish translation of the slightly modified version used by Seligman et al. (2005) was administered in this study. Each of the 20 items is rated on a 4-point scale: "not at all" to "very much" that is scored from 0-3 in the frequency of occurrence over the past week, with a possible total score ranging from 0 to 60. Higher scores indicate greater symptomatology. A score of 10 or lower indicates low levels of depressive symptoms. Scores between 10 and 15 represent mild depressive symptoms without clinical relevance. Scores greater than 15 correspond to levels of clinically relevant depressive symptoms: 16 to 24 correspond to moderate levels of depressive symptoms and greater than 24 corresponds to severe levels of depressive symptoms (Seligman et al., 2005; Weissman et al., 1980). The psychometric properties of the CES-DC are satisfactory. LaGrange et al. (2008) reported Cronbach's alpha of between .81 a .87.

Preventive intervention

The cognitive-behavioral intervention was administered in a group format in 12 sessions of two hours each. Two sessions per week were implemented by a group leader according to a manual; students were provided with an activity book. Except for the first and last sessions, each session began with a review of homework and ended with an assignment for the following week.

The intervention was inspired by the description of the main components of the Pennsylvania Resilience Program (PRP) of Seligman et al. (2005) adapted for a Spanish population with new materials and examples. The intervention also used relevant materials of the Cognition, Emotion, and Action Program (Méndez, 2002) because it presented different concepts of the cognitive approach using materials specifically written for children. The modules were:

1. *ABC model* (5 hours): Understanding the concept of internal dialogue with examples. Introduction of the ABC model (Adversity - Beliefs - Consequences) using bullets. Presentation of real cases to practice the ABC model.
2. *Changes to the explanatory style* (7 hours): Introduction of the concept of optimism. Comparing optimistic and pessimistic styles on stability, generalization, and personalization dimension through stories, emphasizing the emotional and behavioral consequences of each model. Combat dichotomous thinking and the tendency to take all the blame (or blame everything on external factors); try to find the greatest number of possible causes and adequately determine their responsibility.
3. *Questioning and de-catastrophizing* (7 hours): Questioning pessimistic explanations. Introduction of the ABCDE (Adversity - Beliefs - Consequences - Disputation - Energization); examine beliefs that try to explain the adversity << why did this happen? >> Question the catastrophic beliefs like: << What if ...? >>. In general, try to avoid falling into the feeling of helplessness, and "move" the person to action.
4. *Resolution of interpersonal problems* (5 hours): Technique for resolving interpersonal problems. Distinguish among patterns of interpersonal relationships: aggressive = hard (heavy), assertive (firm), and passive = soft (light), and teach negotiation skills.

Statistical analysis

ANOVA was used in a mixed 2 x 2 factorial design, with an between group factor (prevention program, waiting list) and a within group factor (pre-test, post-test). We also calculated effect sizes, as recommended by Frías, Pascual, and García (2000). For analysis of results regarding the effect of the program, the index d is more appropriate to compare the change that occurs from pre- to post-test in youth in one condition versus the other (Morris, 2000; Morris & DeShon, 2002). Effect sizes were interpreted based on Cohen (1988). For scores ≥ 0.20 , index d was considered low; scores ≥ 0.50 were considered medium, and scores ≥ 0.80 were considered high.

An ANOVA also was conducted for participants who had at pre-test "high depressive symptoms" which was defined as a score above 24 on the CES-DC, as used in other studies (Clarke et al, 2001). In qualitative analysis of differences in the proportion of participants, above the cutoff point 15 and above the cutoff 24 on the CES-DC, between groups and at different time points were analyzed at pretest and post-test. For the calculation of independent proportions, a Fisher test was used and a related ratios McNemar test. The Fisher and the ϕ coefficient were used to determine the magnitude of the effect size (Cramer, 1946; Pearson, 1913). Index ϕ for a score less than .10 is considered low, less than .30 medium, and less than .50 high.

Results

Quantitative analysis of program effectiveness in depressive symptoms in the total sample

Table 1 show that no statistically significant difference was found between the groups at post-test. The effect size indicates an improvement in the experimental group of low to medium size (Cohen, 1988), even though the control group also improved.

Table 1. Descriptive statistics (mean and standard deviation) of the scores of change in the measure of depression in the total sample. Calculating ANOVA and effect size.

Variable	Group	Mean Change	SD	n	F	df	P	Effect size
CES-DC	Control Group	2.91	7.04	12				
	Experimental Group	6.11	8.58	13	1.028	1,23.321	.39	
	Total	4.58	7.88	25				

Notes: CES-DC = Center for Epidemiological Studies Depression Scale for Children; *s.d.* = standard deviation; *df* = degrees of freedom.

Quantitative analysis of program effectiveness in participants with high depressive symptoms at pre-test

We explored the effectiveness of the intervention in participants with "high depressive symptoms" at pre-test, defined as those with CES-DC scores of higher than 24 at the pretest, as has been used in other investigations (Clarke et al, 2001). A statistically significant difference was found indicating a reduction of depressive symptoms in the experimental group as compared to the control group.

The effect size of this difference was of high magnitude, indicating that there was strong improvement from pre-test to post-test in participants with "high depressive symptoms" at pre-test in the experimental group as compared to controls

Table 2. Descriptive statistics (means and standard deviations) of changes in CES-DC scores from pre- to post-test in participants with "high depressive symptoms" (> 24) at pre-test. Calculation ANOVA and effect size.

Variable	Group	Mean Change	s.d.	n	F	df	p	Effect size
CES-DC	Control Group	4.83	1.75	3				
	Experimental Group	11.90	4.56	5	6.286	1,6.046	1.59	
	Total	9.25	5.11	8				

Notes: CES-DC = Center for Epidemiological Studies Depression Scale for Children; *s.d.* = standard deviation; *df* = degrees of freedom

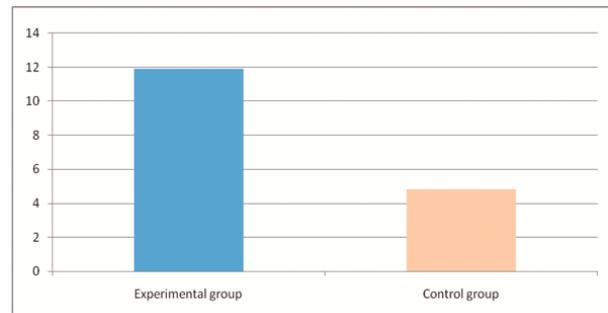


Figure 2. Improvement in mood from pre-test to post-test (change scores) in participants with high depressive symptoms (i.e., CES-DC > 24) at pre-test.

Qualitative analysis of program effectiveness in depressive symptoms

We next examined changes in the CES-DC to better understand the clinical changes that occurred in depressive symptoms. Scores above the cutoff point of 15 on the CES-DC are generally considered clinically relevant (Weissman et al, 1980).

At pretest, 58.3% of the control group and 92.3% of the experimental group were above the cutoff of 15 on the CES-DC. This difference in proportions between groups based on the Fisher's test approached significant ($p = .073$) indicating that the experimental group tended to have a higher number of participants above the cutoff 15, with a medium-high effect size ($\phi .397$) according to Cohen (1988). In the post-test no significant differences were found between the groups ($p = 1.0$).

In the experimental group, 38.5% of participants above the cutoff 15 at pretest decreased to below 15 at post-test. According to the McNemar test, this change approached significant ($p = .063$). In the control group there was no reduction ($p = 1.0$). Figure 3 shows this graphically.

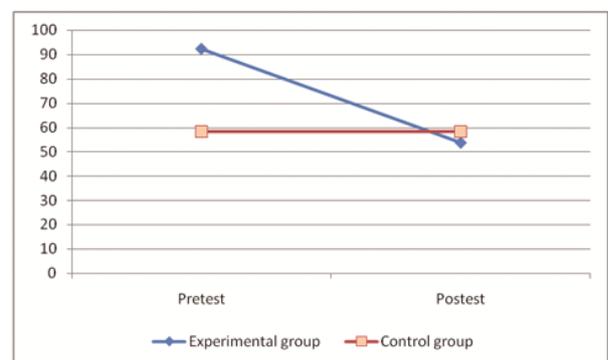


Figure 3. Percentage of participants with symptoms of depression above the cutoff of 15 on the CES-DC.

We also analyzed the percentage of participants above the cutoff of 24, used in other studies (Clarke et al, 2001). As shown in Figure 4 at pretest, in the control group 25% of the participants were above this cutoff and 38.5% in the ex-

perimental group. This difference in proportions between groups according to Fisher's test was not significant ($p = .673$); calculation of the effect size indicated differences in the clinical or practical level of low magnitude ($\phi .14$) according to Cohen (1988).

In the post-test, no significant differences between groups ($p = .645$) were found; calculation of the effect size indicated differences in the clinical or practical level of low magnitude ($\phi .12$) according to Cohen (1988) such that the experimental group had fewer participants above the cutoff at post-test.

In the experimental group 23.1% of participants above the CES-DC cutoff of 24 at pre-test were no longer above 24 at post-test. According to the McNemar test was not statistically significant ($p = .250$). In the control group there was no reduction ($p = 1.0$).

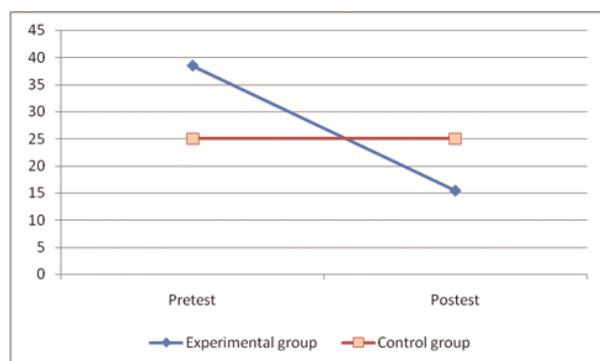


Figure 4. Percentage of participants with symptoms of depression above the cutoff of 24 on the CES-DC.

Discussion

This study examined the effectiveness of a cognitive-behavioral program to prevent depression in children. Analyses showed no differences between the intervention and control groups in depressive symptoms for the total sample. Estimates of the effect sizes, however, indicated an improvement at a practical level in the experimental group of low-medium size (Cohen, 1988), even though the control group also improved.

The lack of statistical significance may be due to a problem of statistical power due to the small sample size, due in large part to the difficulty of recruiting participants in indicated prevention studies. The fact that the intervention was conducted outside of school hours likely caused difficulties for both children and parents.

The magnitude of the effect size of the intervention found here was similar to the averages found in the meta-analytic reviews of programs to prevent depression in children and adolescents, ranging from low (Stice, Shaw, Bohon, Marti & Rohde, 2009) to medium-low (Horowitz & Garber, 2006).

We also tested the effectiveness of the intervention in

the subset of participants with "high depressive symptoms," defined as those with scores above the cutoff of 24 on the CES-DC at pre-test, as has been used in other studies (Clarke et al, 2001). A statistically significant difference was found indicating a reduction in depressive symptoms in the experimental group compared with the control group. The effect size of this difference was high (Cohen, 1988). Thus, there was a strong improvement from pre- to post-test in participants with "high depressive symptoms" in the experimental group as compared to controls.

We also found that the percentage of participants with moderate levels of depressive symptoms (> 15) at pre-test was reduced by 38.5% in the experimental group at post-test (this improvement was marginally significant), whereas in the control group there was no reduction.

We next analyzed change in participants who were above the cut point of 24 at pre-test, which indicates severe depression (Weissman et al., 1980). There was a 23.1% reduction in the percentage of participants who had severe depression in the experimental group (although it did not reach statistical significance); in the control group, however, no reduction occurred.

In this study, participants were randomized to the groups in order that they be homogeneous in the pre-test scores on the CES-DC. However, given the small sample, random assignment did not adequately equalize the groups. Controlling for the pre-test scores when comparing the post-test scores can help deal with these pre-test differences.

Although the differences between the groups at pretest was not statistically significant, there were differences at the practical level that would indicate that the experimental group had more depressive symptoms. In qualitative analysis, marginally significant differences were found indicating that more participants in the experimental group had symptoms of moderate to severe depression than in the control group.

In general, both the quantitative analysis about the effectiveness of intervention in participants with "high depressive symptoms," and the qualitative analysis showing that the preventive intervention was effective in those participants with clinical level scores on depression at pre-test

Several studies have found a greater effect of preventive interventions for participants with high depressive symptoms at baseline (Clarke et al, 2001; Jaycox, Reivich, Gillham, & Seligman, 1994).

Future Directions

A plausible explanation for the lack of differences between groups in the total sample could have been the " sleeper effect" of cognitive-behavioral interventions, which holds that the new skills acquired, such as explanatory style and resolving problems require some time for their effects to become apparent in everyday life situations of children. Previous depression prevention studies (Jaycox et al., 1994;

Gillham et al., 1995; Spence, Sheffield & Donovan, 2005) have shown that preventive interventions with children 11 years old begin to be effective by about age 13 when the rates of depression begin to increase (Hankin et al., 1998).

We also should mention that we ran into problems with the school Schedule and therefore, we had to compress the timetable for implementation to half the time initially planned. This circumstance caused the program to coincide with school assessments generating additional difficulties for participants. Thus, the preferred spacing of the sessions should be studied further. That is, is it more effective to have one session a week, and not two, as proposed by the Seligman team.

It was somewhat surprising that there was not an increase in depressive symptoms in the control group, given that studies have shown that depressive symptoms tend to increase with age (Angold, Costello & Worthman, 1998).

Several longitudinal studies, however, have found decreases in self-reported depressive symptoms in children (Hilsman & Garber, 1995; Nolen-Hoeksema, Girgus & Seligman, 1992). It is possible that this decrease was an effect of the assessment (LaGrange et al., 2008). In a meta-analysis by Twenge and Nolen-Hoeksema (2002) on 310 samples of children, longitudinal studies found a decrease in depressive symptoms with age, whereas in contrast, cross-sectional studies found an increase in depressive symptoms with age.

After examining several factors, Twenge and Nolen-Hoeksema (2002) concluded that habituation to the assessment instruments were the most likely explanation of these longitudinal effects. This repeated assessment phenomenon might mask the effects produced in the experimental group when compared with the control group (Gillham et al., 2007).

The modest relief of depressive symptoms also could have been caused by the fact that in preadolescence, explanatory style is not yet consolidated but rather is directly influenced by events (Turner & Cole, 1994). In addition, longitudinal studies reveal that the interaction of cognitive vulnerability with stressful events on depression emerges around age twelve, so at younger ages explanatory style might not be a vulnerability factor for depression (Cole et al., 2008).

Given the data presented here, it may make sense to implement the preventive intervention program to change explanatory style in the first cycle of compulsory secondary education.

Another factor to consider is the measure of depression used. CES-DC is a less cognitive measure (LaGrange et al., 2008) than others, such as the CDI (Kovacs, 1992). Given that the cognitive behavioral program was based largely on changing explanatory style, it is possible that cognitive changes might not have been captured by the CES-DC. Future studies should use more than one measure of depression and possibly perform diagnostic interviews to analyze the effects of the program, as suggested in some reviews (Horowitz & Garber, 2006).

Interestingly, the gender distribution differed for the overall sample ($n = 172$; 63% girls and 37% boys) as compared to the study participants ($n = 25$; 32% girls and 68% boys). It is possible that parents were more motivated to access the program for children with attention problems or disruptive behavior, which often are boys (Mendez, 2002), rather than internalizing symptoms such as depression, which often are found among girls. Parents have been found to give better information about externalizing as compared to internalizing symptoms (Del Barrio, 1997).

Because the program is designed primarily for the prevention of depression, if the sample includes participants who also have disruptive behaviors, this could reduce the effectiveness of the program. Therefore, future studies should try to control this potential selection bias in the screening phase. Otherwise the sample may not only include youth at risk for depression, but it also might have children with comorbid conditions that could affect the efficacy of the program for preventing depression (Jaycox et al., 1994).

Another fact to note is that although the initial aim was to select the sample based on potential participants having a CES-DC score above the cutoff of 15 on two assessments, it was necessary to modify this strategy. Due to the low participation rate, we changed the criterion to be having scored above the cutoff in any assessment, which thereby may have reduced the level of risk of the sample. Future studies should try to use the stricter eligibility criterion or even use more than one risk criterion for the selection of the sample (Jaycox et al., 1994; Yu & Seligman, 2002).

Strengthening the motivation of the children to engage in the program also might be helpful (Lowry-Webster, Barrett, & Lock, 2003). It may be important to not only get children's passive acceptance, but also to build an active commitment.

As for the effectiveness of PRP, the program from which the intervention was derived, Gillham and colleagues (2007) have reported several studies that found positive results of the program. The latest revisions of the program have found better results when implemented by the members of the research team that created the program or by licensed psychologists with extensive training by the program creators (Gillham, Hamilton, Freres, Patton, & Gallop, 2006). Due to limited resources, however, we were not able to obtain direct training from the developers of PRP.

In their meta-analytic review, Horowitz and Garber (2007) suggested that because depression is such a complex problem, multi-component programs are likely to be the most effective. They further suggested that clinical trials should examine hypothesized mediators, such as checking whether the techniques trained (e.g., social skills, attributional training, problem-solving skills) improved following the implementation of the program, and verifying that these were, in fact, the active ingredients responsible for the improvement in depressive symptoms.

Finally, another note regarding the PRP program is that it focuses on altering explanatory style about negative situa-

tions (ESN). However, the study of explanatory style regarding positive situations (ESP) also should be a focus of future research (Sánchez-Hernández & Méndez, 2014).

In the study comparing a group promoting ESN (ESNG) and another building ESP (ESPG), Cantrell (2007) found that: (a) both were effective in decreasing depression and increasing wellness, (b) participants in ESPG reported greater feelings of happiness and a less negative view than those in ESNG, and (c) In ESPG, participants' feelings of well-being, optimism, and the level of enjoyment of pleasant events increase significantly; but not for participants in ESNG. Thus, promoting ESP may be useful in addition to reducing ESN in depression prevention programs.

Conclusions

The objective of the current investigation was to conduct an experimental study in which a group of at-risk youth completed a cognitive behavioral prevention program inspired by the Penn Resiliency Program (PRP) of Seligman et al. (2005). PRP has been found to increase optimism as compared to a group waiting list. We conclude the following:

Based on our results, we highlight several ideas for future research on the prevention of depression and enhancement of wellness in youth:

- Future studies need larger samples, balanced proportionally by adolescent gender, and longer follow-up periods to see if improvements in the experimental group are maintained.
- Explanatory style prior to adolescence is not fixed, but rather, tends to be directly influenced by events (Turner & Cole, 1994). In addition, longitudinal studies reveal that the interaction of cognitive vulnerability to stressful events emerges from age 12, so at younger ages explanatory style might not be a vulnerability factor for depression (Cole et al., 2008). Therefore, it may make more sense to implement programs to change explanatory

style in the first cycle of compulsory secondary education.

- We recommend using more than one measure of depression and even perform diagnostic interviews to analyze the effects of the program, and to monitor the effects of comorbidity with other disorders.
- We also suggest strengthening youths' motivation for engagement with the program (Lowry et al. 2003). It is important to address the involvement of children in the course, and secure their active, as opposed to only passive, engagement.
- Future studies should examine the role of mediators, i.e. check whether youths learning the CB techniques such as social skills, attributional training, and problem-solving skills are responsible for improvements attributed to the programs.
- Incorporate new modules focusing on promoting optimistic explanatory style to positive situations (Sánchez-Hernández & Méndez, 2014).

In summary, there continues to be a need to invest in interventions for preventing depression in young people in general, and for Spanish youth, in particular (Sánchez-Hernández et al. 2014). Positive effects on personal and social outcomes have been found for some depression prevention programs (Merry et al., 2011). Moreover, some evidence has been found that preventive interventions for depression can be effective strategies for health savings (Mihalopoulos et al., 2011). Thus, investing in depression prevention research and clinical interventions is important for the future the development of our youth, especially in the context of the economic challenges they face.

Notes and / or Acknowledgements.- The authors wish to thank the collaboration of San Buenaventura PP Capuchinos School of Murcia (Spain). The study was funded with a grant-PhD at the University of Murcia.

References

- Angold, A., Costello, E. J. & Worthman, C. M. (1998). Puberty and depression: The roles of age, pubertal status, and pubertal timing. *Psychological Medicine*, 28, 51-61. doi: 10.1017/S003329179700593X
- Brunwasser, S. M., Gillham, J. E. & Kim, E. S. (2009). A meta-analytic review of the Penn Resiliency Program's effect on depressive symptoms. *Journal of Consulting and Clinical Psychology*, 77(6), 1042-1054. doi: 10.1037/a0017671
- Bustamante V. F. & Florenzano U. R. (2013). Programas de prevención del suicidio adolescente en establecimientos escolares: una revisión de la literatura. *Revista chilena de neuro-psiquiatría*, 51(2), 126-136. doi:10.4067/S071792272013000200006
- Cantrell (2007). *An exploratory examination of the effectiveness of explanatory style for positive versus negative events in group cognitive behavioral treatment*. Dissertation Abstracts International: Section B: The Sciences and Engineering, Vol 67(9-B), pp. 5391.
- Clarke, G. N., Hornbrook, M., Lynch, F., Polen, M., Gale, J., Beardslee, W., O'Connor, E. & Seeley, J. (2001). A randomized trial of a group cognitive intervention for preventing depression in adolescent offspring of depressed parents. *Archives of General Psychiatry*, 58, 1127-1134. doi: 10.1001/archpsyc.58.12.1127
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2.^a ed). Hillsdale, Nueva Jersey: Erlbaum.
- Cole, D. A., Ciesla, J. A., Dallaire, D. H., Jacquez, F. M., Pineda, A. Q., Langrange, B., Truss, A. E., Folmer, A. S., Tilghman-Osborne, C. & Felton J. W. (2008). Emergence of attributional style and its relation to depressive symptoms. *Journal of Abnormal Psychology*, 117, 1, 16-31. doi: 10.1037/0021-843X.117.1.16
- Covey, L. S., Glassman, A. H. & Stetner, F. (1998). Cigarette smoking and major depression. *Journal of Addictive Diseases*, 17, 35-46. doi: 10.1300/J069v17n01_04
- Cramer, H. (1946). *Mathematical methods of statistics*. Princeton, NJ: Princeton University Press.
- Del Barrio, V. (1997). *Depresión infantil*. Barcelona. Ariel Practicum.
- Ferreira, E., Granero, R., Noorian, Z., Acosta, K. R. & Domènech-Llaveria, E. (2012). Acontecimientos vitales y sintomatología depresiva en población adolescente. *Revista de psicopatología y psicología clínica*, 17 (2), 123-135. doi: 10.5944/rppc.vol.17.num.2.2012.11209

- Frias, M. D., Pascual, J. & García, J. F. (2000). Tamaño del efecto del tratamiento y significación estadística. *Psicothema*, 12 (2), 236-240.
- Garrison, C. Z., Addy, C. L., Jackson, K. L., McKeown, R. E., & Waller, J. L. (1991). A longitudinal study of suicidal ideation in young adolescents. *Journal of the American Academy of Child Adolescent Psychiatry*, 30, 597-603. doi: 10.1097/00004583-199107000-00011
- Gillham, J.E., Brunwasser, S.M. & Freres, D.R. (2008). *Preventing depression early in adolescence: The Penn Resiliency Program*. In J.R.Z. Abela y B.L. Hankin (Eds.) *Handbook of Depression in children and adolescents* (pp. 309-332). New York: Guilford Press.
- Gillham, J.E., Hamilton, J., Freres, D.R., Patton, K. & Gallop, R. (2006). *Journal Abnorm Child Psychology*, 34(2), 203-219
- Gillham, J. E., Jaycox, L. H., Reivich, K. J., Seligman, M. E. P. & Silver, T. (1990). *The Penn Resiliency Program. (Also known as the Penn Depression Prevention Program and the Penn Optimism Program)*. Unpublished manuscript, University of Pennsylvania.
- Gillham, J. E., Reivich, K. J., Freres, D. R., Chaplin, T. M., Shatte, A. J., Samuels, B., et al. (2007). School-based prevention of depressive symptoms: A randomized controlled study of the effectiveness and specificity of the Penn Resiliency Program. *Journal of Consulting and Clinical Psychology*, 75, 9-19. doi: 10.1037/0022-006X.75.1.9
- Gotlib, I. H., Lewinsohn, P. M. & Seeley, J. R. (1995). Symptoms versus diagnosis of depression: Differences in psychosocial functioning. *Journal of Consulting and Clinical Psychology*, 63, 90-100. doi: 10.1037//0022-006X.63.1.90
- Hankin, B. L., Abramson, L. Y., Moffitt, T. E., Silva, P. A., McGee, R. & Angell, K. E. (1998). Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology*, 107(1), 128-140. doi: 10.1037//0021-843X.107.1.128
- Hilsman, R. & Garber, J. (1995). A test of the cognitive diathesis-stress model of depression in children: Academic stressors, attributional style, perceived competence, and control. *Journal of Personality and Social Psychology*, 69, 370-380. doi: 10.1037//0022-3514.69.2.370
- Horowitz, J. L. & Garber, J. (2006). The prevention of depressive symptoms in children and adolescents: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 74, 401-415. doi: 10.1037/0022-006X.74.3.401
- Horowitz, J. L., Garber, J., Ciesla, J. A., Young, J. & Mufson, L. (2007). Prevention of depressive symptoms in adolescents: A randomized trial of cognitive-behavioral and interpersonal prevention programs. *Journal of Consulting and Clinical Psychology*, 75, 693-706. doi: 10.1037/0022-006X.75.5.693
- Jaycox, L. H., Reivich, K. J., Gillham, J. & Seligman, M. E. P. (1994). Prevention of depressive symptoms in school children. *Behaviour Research and Therapy*, 32, 801-816. doi: 10.1016/0005-7967(94)90160-0
- LaGrange, B., Cole, D. A., Dallaire, D. H., Ciesla, J. A., Pineda, A. Q., Truss, A. E., & Folmer, A. (2008). Developmental Changes in Depressive Cognitions: A Longitudinal Evaluation of the Cognitive Triad Inventory for Children. *Psychological Assessment*, Vol. 20, No. 3, 217-226. doi: 10.1037/1040-3590.20.3.217
- Lantieri, L. (2009). *Inteligencia emocional infantil y juvenil*. Madrid: Aguilar.
- Lowry-Webster, H., Barrett, P., & Lock, S. (2003). *A universal prevention trial of anxiety symptomatology during childhood: Results at one year follow-up*. *Behaviour Change*, 20 (1), 25-43.
- Méndez, F. X. (1999). *Depresión en la infancia y la adolescencia*. Madrid: Klínic.
- Méndez, F. X. (2002). *El niño que no sonríe*. Madrid: Editorial Pirámide.
- Méndez, F. X., Olivares, J. & Ros, C. M. (2001). Características clínicas y tratamiento de la depresión en la infancia y adolescencia. En V. E. Caballo y M. A. Simón (Eds.). *Manual de Psicología Clínica Infantil y del Adolescente* (pp. 139-185). Madrid: Pirámide.
- Merry, S. N., Hetrick, S.E., Cox, G.R., Brudevold-Iversen, T., Bir, J.J. & McDowell, H. (2011). Psychological and educational interventions for preventing depression in children and adolescents. *Cochrane Database of Systematic Reviews*, Issue 12. Art. No.: CD003380. doi: 10.1002/14651858.CD003380.pub3.
- Mihalopoulos C., Vos T., Pirkis J., Smit F. & Carter R. (2011). Do indicated preventive interventions for depression represent good value for money? *Australian and New Zealand Journal of Psychiatry*, 45, 36-44. doi:10.3109/00048674.2010.501024.
- Morris, S.B. (2000). Distribution of the standardized mean change effect size for metaanalysis on repeated measures. *British Journal of Mathematical & Statistical Psychology*, 53, 17-29. doi: 10.1348/000711000159150
- Morris, S.B. & DeShon, R.P. (2002). Combining effect size estimates in meta-analysis with repeated measures and independent-groups designs. *Psychological Methods*, 7, 105-125. doi: 10.1037/1082-989X.7.1.105
- Nolen-Hoeksema, S., Girgus, J.S. & Seligman, M.E.P. (1992). Predictors and consequences of childhood depressive symptoms: a 5-year longitudinal study. *Journal of Abnormal Psychology*, 101, 405-422. doi: 10.1037//0021-843X.101.3.405
- Pearson, K. (1913). On the probable error of a correlation coefficient as found from a fourfold table. *Biometrika*, 9, 22-27. doi: 10.2307/2331798
- Sánchez-Hernández, O. & Méndez, F. X. (2014). *Estilo explicativo positivo vs Estilo explicativo negativo. Diferencias de Género*. Comunicación presentada en el II Congreso Nacional de Psicología Positiva (España).
- Sánchez-Hernández, O., Méndez, F. X. & Garber, J. (2014). Prevención de la depresión en niños y adolescentes: Revisión y reflexión. *Revista de Psicopatología y Psicología Clínica*, 19 (1), 63-76. doi: 10.5944/rppc.vol.19.num.1.2014.12983
- Sánchez-Teruel, D., García-León, A. & Muela-Martínez, J. A. (2014). Prevention, assessment and treatment of suicidal behavior. *Anales de Psicología*, 30(3), 952-963. doi: 10.6018/analesps.30.3.148691
- Seligman, M.E.P., Reivich, K., Jaycox, L. & Gillham, J. (2005). *Niños optimistas*. Barcelona: Random House Mondadori, S.A.
- Spence, S. H., Sheffield, J. K. & Donovan, C. L. (2005). Long-term outcome of a school-based, universal approach to prevention of depression in adolescents. *Journal of Consulting and Clinical Psychology*, 73,160-167. doi: 10.1037/0022-006X.73.1.160
- Stice, E., Shaw, H., Bohon, C., Marti, C.N. & Rohde, P. (2009). A Meta-Analytic Review of Depression Prevention Programs for Children and Adolescents: Factors That Predict Magnitude of Intervention Effects. *Journal of Consulting and Clinical Psychology*, 77 (3), 486-503. doi: 10.1037/a0015168
- Turner, J. E. & Cole, D. A. (1994). Development differences in cognitive diatheses for child depression. *Journal of Abnormal Child Psychology*, 2, 15-32. doi: 10.1007/BF02169254
- Twenge, J. M. & Nolen-Hoeksema, S. (2002). Age, gender, race, socioeconomic status, and birth cohort difference on the Children's Depression Inventory: A meta-analysis. *Journal of Abnormal Psychology*, 111, 578-588. doi: 10.1037//0021-843X.111.4.578
- Vázquez, F. L., Blanco, V., Torres, A., Otero, P. & Hermida, E. (2014). La eficacia de la prevención indicada de la depresión: una revisión. *Anales de Psicología*, 30(1), 9-24. doi: 10.6018/analesps.30.1.138931
- Weissman, M., Orvaschel, H. & Padian, N. (1980). Children's symptom and social functioning: Self-report scales. *Journal of Nervous and Mental Disease*, 168, 736-740.
- Yu, D. L. & Seligman, M. E. P. (2002). Preventing depressive symptoms in Chinese children. *Prevention and Treatment*, 5, (article 9). doi: 10.1037//1522-3736.5.1.59a

(Article received: 01-12-2015; revised: 11-04-2016; accepted: 11-05-2016)