

Research

Implementation and Evaluation of a Greek, manualised, CBT parenting intervention for children aged 3-8 with Attention Deficit and/or Disruptive Behaviour Disorders. A single group outcome study.

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Objective: To evaluate the effectiveness of a Greek parenting program, based on social learning theory, as a therapeutic intervention for children aged 3-8 with behaviour disorders.

Design: Single group pre-post outcome study.

Setting: Department of Child Psychiatry of the University Medical School, «Aghia Sophia» Children's Hospital, Athens, Greece.

Participants: Sixty-five parents with children aged 3-8 meeting DSM-IV criteria for Attention Deficit and/or Disruptive Behaviour Disorders were evaluated in the current study.

Intervention: Positive Parents Happy Kids. A manualised parenting program, of 12 weekly group sessions and two parent-child sessions, based on cognitive behaviour and social learning theory.

Outcome measures: Parents completed measures of child emotional and behavioural difficulties (SDQ) and parental stress (PSI short form), pre and two-week post intervention, as well as a client satisfaction questionnaire.

Results: The SDQ showed that post treatment, a statistically significant proportion of children moved from the borderline-clinical range to non clinical range regarding: a) the Total Difficulties Score (24.6%), b) the hyperactivity subscale (26.2%), c) the conduct subscale (40%) and d) the peer relationship problems (20%). The impact of the problems was also significantly reduced. According to PSI, there was also a statistically significant improvement in all categories (Total Parental Stress, Parental Distress, Parent-Child Interaction and Difficult Child). The acceptance of the program was very satisfactory as shown by the high attendance rate and the completion of satisfaction questionnaire.

Conclusion: The study provides evidence that therapeutic improvement can be achieved by a manually based, parent Cognitive Behavioural Program designed for a Greek population. The question whether, in countries like Greece it is preferable to import well researched, but expensive foreign programs or design new culturally-sensitive programs, based on the common characteristics of the previous ones is discussed.

Keywords: Parenting program, conduct problems, ADHD, children, outcome

Introduction

Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) can affect up to 12.6% and 6.8% of children respectively¹, whereas the prevalence of ADHD in school-aged children is estimated to 5.2%². These conditions are the most common child psychiatric disorders and the most common reason for referral to a child psychiatry service³. Although, these statistics come primarily from research conducted in US and UK, there is good evidence to suggest that (at least within the Western World Countries and thus in Greece) the above prevalence estimates should be about the same⁴.

The comorbidity of CD (or ODD) and ADHD is high⁵ and are put together, under the same category of DSM-IV as: Attention Deficit and Disruptive Behaviour Disorders⁶. The long-term psychiatric consequences of conduct disorder have been well documented in many studies and associated with depression⁷, drug abuse and suicidality⁸, delinquency and antisocial personality disorder⁹.

Without a timely, early and effective intervention, CD may result in significant financial burden both for the family and the society, whereas the long-term financial cost of a child with CD is about 10 times higher, than a child without behavioural problems^{10,11}. In addition, CD is a significant contributor to global YLDs (Years Lived with Disability), ranking as the 30th leading cause of nonfatal burden worldwide, despite its prevalence ceasing at the onset of adulthood as per diagnostic criteria¹².

Although behaviour problems have a multifactorial aetiology, parenting is a key determiner of child behaviour¹³, and conduct problems are unwittingly developed and sustained in the home by maladaptive parent-child interaction such as reinforcement of ineffective use of commands, harsh punishment, failure to attend to appropriate behaviour and coercive parent-child exchanges¹⁴. Parenting of ADHD or Conduct Disorder kids share similar ineffective characteristics¹⁵. When ineffective parenting is the problem, cognitive behaviourally based parenting programs, with principles derived from social learning theory can provide an effective solution and they are more effective with younger children¹⁶.

Parent training programs based on the above theoretical principles, such as the Incredible Years¹⁷, Triple P Positive Parenting Program¹⁸, the Parent-Child Interaction Therapy (PCIT)¹⁹, the Parent Management Training²⁰ have been widely studied and consist significantly effective psychotherapeutic

interventions for the prevention of CD²¹. Research findings indicate that some of the above programs reduce ADHD symptoms and can be applicable in ADHD diagnosis or in case of comorbidity^{15,22,23}.

Many governments and international bodies (e.g. World Health Organization) in order to prevent violence, promote the transportation and rollout of evidence-based existing parenting programs or they suggest that if new programs are to be designed, they should incorporate the common characteristics that they will be more likely to be effective²⁴.

A meta-analysis by Kaminski et al²⁵ showed that: a) helping parents how to develop emotional communication skills, b) how to interact positively with their child, c) how to respond consistently to their children, d) how to use correctly the time out, e) asking parents to practice new skills during sessions and in their own home, f) requiring parents to practice with their child "in vivo" during sessions, are the necessary common characteristics of a parenting program, in order to produce significant and meaningful changes.

In Greece, manualised parenting interventions for CD barely exist and if so there are not adopted by public or private child psychiatric services. Most parenting interventions are called «parenting work» or «parenting schools», they are not manualised, do not have a sound theoretical or empirical background nor a specific targeted clinical population.

Therefore, based on scientific, theoretical and empirical evidence of the existing literature it was decided to create, implement and evaluate a Greek CBT parenting program, aimed to help families with children aged 3-8, with Disruptive Behaviour Disorders, at the Department of Child Psychiatry, of the Athens University Medical School. Given the high co morbidity of CD and ADHD in real world setting, ADHD diagnosis was also included. This paper reports on the outcome of the pilot implementation of the above program, named "Positive Parents - Happy Kids".

METHOD

The intervention

The intervention consists of 12 weekly 2-hour parent group sessions and 2 parent-child sessions. The intervention aims to reduce child behavioural problems and to improve the parent-child relationship, based on the principles of

positive parenting. Each group was attended by parents of 8-10 children and run by two facilitators.

The whole intervention is manually based²⁶ and consisted of four parts: a) increasing desirable behaviour, b) developing social communication and emotional skills, c) preventing unwanted behaviour and d) applying positive discipline. The topics that are discussed, throughout the program are the following: child centered game, effective praise and rewards, positive communication, recognition and expression of emotions, building of social skills, household rules, selective ignoring, consequences and time out. The strategies that are used in the program include: therapist brief introduction on the topic, guided group discussion, therapists' role-play, parents' role-play and in vivo exercises. The parents are given the program's book for parents to read²⁷, and weekly homework to do, which is reviewed during the following session.

The two parent-child sessions were delivered after the completion of the 6th and 12th weekly group session respectively. The first session consisted of child-centered game, presentation of a reward system and a free topic discussion. The second session consisted of child-centered game, parent commands, presentation of a discipline system and a free topic discussion. The therapists sit behind a one-way mirror and by using an ear bug device give live feedback, reinforcing parental skills and appraising the parents' behaviours.

Intervention fidelity

The groups were monitored for implementation fidelity. There was a detailed manual for the 14-session program and therapists completed weekly checklists of the content covered. Group sessions were video-recorded and weekly meetings here held with all therapists in order to monitor treatment integrity, treatment delivery and parents responsiveness. Parents satisfaction and engagement was measured by using the purpose constructed Weekly Satisfaction Questionnaire.

Therapists

Four therapists (one child psychiatrist, one clinical psychologist and two psychologists with a master degree in mental health) administered six parenting groups. The child psychiatrist, who developed the program, trained the psychologists for a period of six months.

Setting

The trial took place at the Department of Child Psychiatry Greece, of the Athens University Medical School, in «Aghia Sophia» Children's Hospital, Athens, Greece between 2012-2014. The relevant ethics committee approved the project. Children were referred either by a mental health service or by an educational setting.

Participants

Eligible parents were those of children aged 3-8 years old, who scored 5 and above on the conduct problems subscale and/or 6 on the hyperactivity subscale, of the Strengths and Difficulties Questionnaire (SDQ-Hel)^{28,29} during an initial telephone intake. They should have been able to speak adequate Greek and attend the group meetings. Exclusion criteria were clinical apparent major parental illness and children with major developmental delay (learning disability or pervasive developmental disorder).

Measures and procedure

A structured clinical interview was held by the child psychiatrist in order to assign DSM IV diagnosis and to confirm eligibility criteria for participation to the study.

The primary outcome instrument was the Strengths and Difficulties Questionnaire, parent rated (SDQ-Hel)^{28,29}. The SDQ is a brief measure questionnaire that asks parents to rate their child behaviours/symptoms and positive attributes. It comprises 25 items, with answers being rated on a 3-point severity scale. The SDQ provides a "global" total difficulties score (TDS), as well as five individual subscale scores: Conduct problems, Emotional symptoms, Hyperactivity, Peer problems and Prosocial behaviours. With the exception of the Prosocial subscale, the sum of the other four subscales generates the TDS. Because of this, the Prosocial scale was not included in the statistical analysis. There are cut-off scores for all subscales and the total difficulties score to indicate a likely clinical disorder^{29,30}. An impact scale in the SDQ indicates the extent of the burden that the child's problem behaviour has on his everyday life. The psychometric properties of the SDQ-Hel (Greek version of SDQ) are good, as have been reported in various studies with Greek samples^{31,32}.

The secondary outcome instrument was the Parenting Stress Index Short- Form³³. It consists of 36 items and is comprised of three subscales, which include the Parental Distress (PD), Parent-Child Dysfunctional Interaction (PCDI) and Difficult Child (DC)

subscales. Child and Parent domains combine to form Total Stress Scale. Reliability and validity of the test supports that parenting stress is a measure that is useful across diverse populations and has proved useful in designing a treatment plan, for setting priorities for intervention or for follow-up evaluation³⁴.

The Parental satisfaction was measured by the Weekly Satisfaction Questionnaire, which was constructed for the purpose of the current study and assessed satisfaction of parents from weekly group sessions. It comprised the following 8 items for the group sessions 2-12, and only the first 6 items for the 1st group session: 1) the content covered during the session, 2) the overall role of the therapists, 3) the therapists' role plays, 4) the exercises during the session, 5) their opportunity to talk about their child, 6) how well the parental homework was explained, 7) the usefulness of the parental material and handouts and 8) the review of parental homework during the session. Understandably, the items 7 and 8 could not be assessed during the first session and therefore were not included. Each item could be scored 0 (not at all), 1 (a little), 2 (just enough), 3 (a lot) and 4 (very much), yielding a maximum score of 32 for the sessions 2-12 and a maximum of 24 for the session 1. The total score of the questionnaire gives the overall satisfaction from the specific session.

The outcome instruments were completed in two times: pre-intervention and two weeks after completion of intervention (returned by paid post).

Statistical Analysis

A series of paired sample t-tests were conducted in order to assess the differences pre- and post-treatment, in child difficulties (externalizing symptoms, emotional symptoms) and child positive social behaviour as well as in parenting stress (parental distress, parent-child dysfunctional interaction and difficult child). The McNemar test was used to assess the proportion of children who post-treatment moved from the borderline-clinical range to non-clinical range in SDQ scale.

RESULTS

Sample demographic characteristics

Seventy-eight parents of children 3-8 years old with behavioural problems attended the intervention. Thirteen parents were excluded from the current study. In particular three parents attended less than six sessions and ten did not complete the pre or post intervention measures. Sixty-five parents (45

mothers, 20 fathers; 18 couples) of 47 children with behavioural problems (mean age 6.1 years, S.D. 1.4, boys=40) participated in the current study. All parents were of Greek Nationality. 77.9% were married, 13.3 % were divorced, 2.2% divorced with a partner, 2.2% separated, 2.2% widowed and 2.2% single.

Child psychiatric diagnoses

According to clinical DSM IV diagnoses, 12 children were diagnosed with ODD (25,5%), 8 children with ADHD (17%), 12 children with ODD & ADHD (25,5%), 3 children with ODD and Depression (6,5%) and 12 children with Disruptive Behaviour NOS (25,5%).

Child behavioural problems pre- and post-treatment

Paired sample t-tests were conducted pre and post treatment. Intervention produced a significant reduction in mean total difficulty score ($t(64)=8.08, p<.001$). In particular, externalizing symptoms were reduced: inattention and hyperactivity ($t(64)=4.41, p<.001$), conduct problems ($t(64)=7.03, p<.001$) and problems with peers ($t(64)=6.46, p=.001$). Additionally, emotional symptoms were ameliorated ($t(64)=5.14, p<.001$). Improvement was reported in child positive social behaviour ($t(64)=-3.44, p=.001$). A statistically significant reduction of the overall impact of the difficulties in the daily life of the child was also found ($t(59)=4.86, p<.001$). Mean scores, standard deviation and effect size are presented in Table 1.

Table 1: Child symptoms pre and post treatment

SDQ (cut-off score)	Pre- treatment assessment Mean (SD)	Post- treatment assessment Mean (SD)
Total difficulties (≥ 15)	17.35 (6.38)	11.89 (5.37) **
Inattention/hyperactivity (≥ 6)	6.57 (2.71)	5.40 (2.53) **
Emotional symptoms (≥ 5)	2.95 (2.11)	1.66 (1.81) **
Conduct problems (≥ 5)	4.66 (2.03)	2.92 (1.48) **
Problems with peers (≥ 4)	3.17 (2.27)	1.91 (2) *
Positive social behaviour (≤ 6)	6.37 (2.17)	7.23 (1.78) *
Overall Impact	4 (3.18)	2.25 (2.86) **

* $p=.001$, ** $p<.001$

Using the cut off scores on Total Difficulties, on individual subscales and on Impact factor, as a boundary between the borderline-clinical and the non-clinical as suggested by Giannakopoulos et al²⁹, there were significant improvements in the proportion of children who post-treatment moved from the borderline-clinical range to non-clinical range. The difference was statistically significant for the Total Difficulties Score, (McNemar’s test < .001), the hyperactivity subscale (McNemar’s test= .001), the conduct subscale (McNemar’s test < .001), the peer relationship problem (McNemar’s test= .002) but not for the prosocial behaviour (McNemar’s test= .078). Table 2 shows the overall frequencies of improvement, deterioration and no change.

Table 2: Percentage of improvement, impairment and not alteration of child difficulties according to SDQ

	Total difficulties N (%)	Inattention/ hyperactivity N (%)	Conduct problems N (%)	Problems with peers
From the borderline/ abnormal to normal range	16 (24.6)***	17 (26.2)**	26 (40.0)***	13 (20.0)*
From normal range to borderline/ abnormal range	0 (0.0)	2 (3.1)	0 (0.0)	1 (1.5)
Maintenance of the clinical level	25 (38.5)	26 (40.0)	10 (15.4)	12 (18.5)
Maintenance of the normal level	24 (36.9)	20 (30.8)	29 (44.6)	39 (60.0)

* McNemar’s test < .01, **McNemar’s test = .001, *** McNemar’s test < .001

Parental Stress

Paired sample t-tests were conducted in order to identify the differences pre and post treatment in PSI short form. Parents at the end of the intervention scored statistically significantly lower in Total Stress Scale ($t(64) = 6.44, p < .001$), in “Parental Distress” ($t(64) = 4.09, p < .001$), in “Parent-Child Dysfunctional Interaction” ($t(64) = 4.39, p < .001$) and in “Difficult Child” ($t(64) = 5.70, p < .001$) (see Table 3). From the scoring levels in the three sub scales, it appears that the most stressful parenting field is related to the Difficult Child.

Table 3: Mean and standard deviations of Parenting Stress Index pre- and post- treatment

Parenting Stress Index	Pre- treatment assessment Mean (SD)	Post- treatment assessment Mean (SD)
Total Stress	86.97 (16.89)	76.29 (17.60) *
Parental Distress	28.43 (6.32)	25.68 (7.00) *
Parent-Child Dysfunctional Interaction	24.22 (6.63)	21.48 (6.35) *
Difficult Child	34.32 (7.87)	29.14 (8.14) *

* $p < .001$

Parental attendance and satisfaction from the program

The mean number of attendance was 10.02 group sessions out of 12 (median 11.00; minimum 6.00, maximum 12). Additionally, all of the 65 parents attended the two individually scheduled, parent-child sessions. Parents reported high levels of satisfaction after each weekly group session. Table 4 shows the levels of satisfaction.

Table 4: Parental satisfaction

Level of satisfaction	Mean	Median	Minimum	Maximum
Session 1	18.15	18.00	11.00	24.00
Session 2	25.03	26.00	13.00	32.00
Session 3	25.27	25.00	18.00	32.00
Session 4	25.62	26.00	16.00	32.00
Session 5	25.78	26.00	17.00	32.00
Session 6	25.96	26.00	20.00	32.00
Session 7	25.80	26.00	16.00	32.00
Session 8	26.46	27.00	18.00	32.00
Session 9	25.98	25.00	18.00	32.00
Session 10	26.54	26.00	21.00	32.00
Session 11	26.23	26.00	15.00	32.00
Session 12	27.71	28.00	19.00	32.00

Discussion

The evaluation results are promising and in line with those reported over the years, by other widely evaluated parent training programs based on cognitive behavioural and social learning theory^{14,16,17,18,19,20,21,22}.

Following completion of the program, the child symptomatology improved on all four domains of SDQ, which were the primary targets of our intervention (conduct, hyperactivity, peer relationship and total difficulties). Very

encouraging finding was that this improvement seems to have a qualitative and not just a quantitative effect, given that it was associated with a change in diagnostic category to back to normal in a significant number of children for all the above 4 domains. In addition, the significant reduction on the impact score of SDQ reflects the improvement in the everyday functioning of the child and his family, which is always a substantial and key goal in any kind of therapeutic intervention.

The above findings from the primary outcome measure (SDQ) are supported by the findings from the secondary measure (PSI). After the end of the intervention, parents perceived their child as less difficult, they reported improvement in their in-between relationship and felt less stressed in their parental role. This finding is also supported by previous findings that reduction in parental stress is associated with improvement of child behaviour in this age range³⁵ and especially among clinical populations³⁶.

It is noteworthy that the parental attendance rate was high reaching a mean of 10 and a median of 11 group sessions (out of 12). It should be mentioned that an attendance rate of 60-70% for the 80% of the sessions has been reported as a usual, average one in similar studies³⁸. Regarding the dropout rate for parenting programs, Webster-Stratton and Reid³⁷ suggest that this can be as high as 50% to 80% in this type of clinical population. In our study the dropout rate was 4% given that only three out of the initial 78 parents attended 5 sessions or less. The parental satisfaction for each session ranged between "a lot" to "very much" as shown by the completion of weekly questionnaires. It should be said that we did not have the means to offer facilities to parents such as child minding during sessions or transportation expenses. The above findings allow us to suggest that the program was well accepted and perceived as a helpful and worth doing intervention by the participants.

Why did the intervention work?

Our program, although it was not tested in a RCT, seems to produce positive results. In our view this was achieved by the way that the whole program was designed and delivered. More precisely, it was based on a solid program theory, proved to be effective, according to widely accepted scientific standards and recommendations, it had a clearly defined target population, was relevant and acceptable to the participants, promoted positive relationships, had the

right dosage, was timely delivered, assured treatment fidelity and training of staff and was culturally sensitive^{39,40,41}.

Comparison with other studies

To the best of our knowledge, by the time funding and implementation of our program were assured, there were not other studies of parent training interventions in a Greek clinical population. Ever since, there has been a publication of a pilot study by Giannopoulou et al³², reporting on the effectiveness of a CBT parenting group intervention of young children with behavioural problems. Their findings are in accordance with ours and suggest that the implementation of a culturally sensitive program, sharing the effective characteristics of an intervention, based on social learning theory, can be positively accepted and implemented in Greek population, for the prevention and treatment of conduct problems.

Limitations

The study does not use an instrument to measure changes of parenting practices and to which extent these changes are associated with the changes observed in the young person behaviour. The study solely relies on the parental perspective for measuring their child's mental health symptoms. Measures from multiple perspectives, particularly from teachers would have been useful. Since this was a single group design outcome study, there was no control group for comparison with the group that received treatment. We therefore cannot say with high degree of confidence that the improvement in children and parents occurred because of the intervention. More studies are needed, preferably using randomized clinical trial methodology, which could also help to determine whether the intervention would benefit a wider population. Parents involved in the program were only followed up once, shortly after the end of the group parent-training program. This is insufficient to help us understand whether or not the program achieves longer lasting changes. A follow-up at 6 and 12 months would provide this information.

Implications for clinical practice

International bodies urge local governments to make such programs available to their population²⁴. However there is an ongoing debate whether it is preferable to design new

programs, specific to each country or to import evidence-based programs, which have been developed and researched in high-income western countries. The financial and the cultural context challenges are the main ones.

According to United Nations Office on Drugs and Crime⁴² importing programs may be less expensive than developing and evaluating new programs for many different groups, but we cannot assume that evidence-based programs developed in one context will continue to be effective in other contexts⁴³. In addition, affordability is another consideration, when importing programs into low and middle-income countries. Many of these programs are expensive, there are costs associated with materials, training and support and many potential purchasers, such as governments and non-profit organisations, are unable to pay the high prices charged for these programs⁴⁴. In Greece, there is an ongoing economic crisis, with rapidly and drastically decreasing public health expenditure affecting seriously mental health services, as well as the scarcity of funding⁴⁵.

Even if the purchase of the material of an existing evidence-based PT program, and examination of its feasibility and effectiveness within a Greek population was considered, its dissemination, ongoing acceptability and purchase ability by mental health agencies, throughout the country was thought to be a non viable and unsustainable option, in the current socio-economic situation. At the moment of writing, the cost of the training and acquisition of the material of our program is in the area of 500 euros (600 USD) and still its affordability has been questioned and it has to be offered for free in the majority of our National Health System services, in order to be implemented.

The second challenge has to do with the specific socio-cultural issues. The relevance of prevention programs to the participants appears to be of primary concern and includes a variety of dimensions, such as local community norms, cultural beliefs and practices⁴⁶. Culturally tailoring prevention programs goes beyond surface structure language translation to deep structure modifications sensitive to cultural factors that influence development and receptiveness to the intervention⁴⁷. Giannopoulou et al.³² reported on special cultural issues that came up about the meaning of child play, reward system, household rules, acceptance of different forms

of discipline or punishment, in their Greek sample, which was also our shared experience from our parenting groups.

Our findings, although they come from a single study group, do suggest that a culturally (and financially) adjusted program, which is based on characteristics that are common to effective prevention programs, is likely to be effective and accepted in a country like Greece.

Questions and future research

It will be important to establish whether the program works well in a RCT and in 6 and 12 months follow up. A cost effectiveness evaluation study of the program will also be equally important if it is to be used to influence the government or nonprofit organisations to fund parenting programs.

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Contributors:

Apostolos Vourdas, MRCPsych, Ph.D., Consultant in Child and Adolescent Psychiatry, had the idea of the study, was the developer of the program, provided therapy sessions, trained and supervised the rest of the therapists and contributed to the writing of the paper.

Kalliopi Triantafyllou, Ph.D., Clinical Psychologist, served on the screening of the groups, collected outcome measures, conducted statistical analysis and contributed to the writing of the paper.

Gerasimos Kolaitis, Associate Professor in Child and Adolescent Psychiatry, Head of the Department (at the period of the study), applied for the grant, oversaw the implementation of the study, provided supervision, contributed in the research design and reviewed the manuscript.

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