

Changes in social competence in young children treated because of conduct problems as viewed by multiple informants

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Running head: Social competence and multi-informants

Abstract

In the present study changes in social competence were examined in a clinic sample of 127 children aged 4-8. The children were recruited to a controlled treatment study because of conduct problems at home and were randomized to the Incredible Years parent training, combined parent training and child therapy or a waiting-list control-group. Assessments were conducted pre and posttreatment and at a one-year follow-up by multiple informants (mother, father, teacher and child). Parent training combined with child treatment showed most improvement in child social competence based on mother, father and child reports, however, father reports showed positive results for children treated with parent training only. Treated mothers and fathers showed a decrease in correlations in their reports of social competence in the child after treatment as compared to parents in the waiting-list condition. No generalisation effects to peer-relationships in day-care/school were found, neither on teacher or child reports. A broad perspective using multiple informants from different settings is needed when effects of treatment of young children with conduct problems are evaluated and should include various aspects of social competence.

Keywords: Social competence, conduct problems, parent training, multiple informants.

Introduction

Children who exhibit conduct problems are often rejected by their peers and are at particular risk for developing a wide range of conduct problems throughout childhood and adolescence (11). For children with conduct problems, peer-rejection during the first years of school exacerbates antisocial development, while acceptance by peers buffers the effects of aggressive behaviours (12) (26). Webster-Stratton and Lindsey (41) defined social competence as the ability to form and maintain positive friendship with peers. They further described child social competence as having prosocial styles of interacting and responding to peers and its ability to read social situations and to interpret them accurately. Aggressive children lacking prosocial strategies are often disliked by their peers and they tend to relate to friends in contexts, where there are high levels of aggression in the peer-group, which in turn may increase levels of child of aggression and other conduct problems (15). Interventions that lead to peer acceptance and enhanced social competence in the child with early conduct problems may disrupt the behavioural trajectories leading to lasting psychosocial problems (30).

Parenting practices and child social competence have been found to be key risk factors for the development of conduct problems (7). Therefore, parent training methods with or without combined child treatment focusing on social skills are most frequently used in the treatment of young children with conduct problems. Parent training approaches have shown well documented positive effects on parenting skills and reduction of child behaviour problems at home (10) (17) (27) (28) (34) (36) (39) (42). Although changes in child social competence are rarely measured in studies of treatment effects of parent training approaches, Scott (34), Webster-Stratton & Hammond (39) and Webster-Stratton, Reid & Hammond (42) reported no significant change in child social competence after treatment with parent training alone. When child treatment with a focus on social skills training has been added to parent training,

positive long-term effects on child social competence have also been reported (7) (9) (18) (21) (39) (42), indicating that child treatment is needed to enhance social competence in young children with conduct problems.

In the assessment of young children's social competence, information from parents and teachers has been most often used, however, also child reports have shown to be valid measures, if they are gathered with structured and developmentally appropriate instruments (4). When using information from multiple sources to assess various aspects of the child's psychosocial functioning, a more comprehensive picture has been obtained, in particular when the reports are not highly correlated (2) (19) (23) (37). In a meta-analytic study of assessment of child social competence, Renk and Phares (32) found a moderate correspondence between different adult informants and low correspondence between child and other informants, indicating that children display different social behaviours in different settings and that each informant has a unique view of various aspects of social competence in the child.

The present study included children aged 4-8 participating in a randomized controlled treatment study because of conduct problems at home. The children received either the Incredible Years (40) parent training alone or combined with child therapy. Positive outcomes of parent training alone as well as combined with child therapy has been found for about two thirds of treated children in the present sample in parental ratings of child conduct problems at home (27), a finding in line with outcomes of previous studies (34) (36) (39) (42). Results from a previous study showed that many children in the present sample also exhibited social problems, in particular in their relationships with peers before treatment (14). We therefore wanted to evaluate changes in social problem-solving skills and friendship skills in peer-interactions, among children treated because of conduct problems, as reported by different informants. In specific, the following questions were addressed:

- 1) Does child social competence change after parent training only according to parent, teacher and child reports, and does child therapy add to the effects of parent training?
- 2) Is improvement in social competence maintained one year after treatment?
- 3) Are changes between pretreatment and one-year follow up evaluations predicted by sex, age-group (day-care/school age) and comorbid ADHD-diagnosis?
- 4) Do correlations between different informants in their assessment of change in child social competence vary in treated and untreated children?

Based on previous studies, we hypothesized that child therapy (CT) added to parent training (PT) would produce more profound changes in social competence than parent training alone (18) (21) (42). We further hypothesized that informants from different settings would have different evaluations of child social competence (32), and that the use of multiple informant sources would give a more nuanced picture of treatment effects in various areas of child social competence.

Methods

Participants

The sample consisted of 127 children 4-8 years old referred for treatment to two child psychiatric outpatient clinics because of oppositional or conduct problems as experienced by their parents. The study was conducted in two university cities in Norway, Trondheim and Tromsø. Exclusion criteria were children with gross physical impairment, sensory deprivation, intellectual deficit or autism. Two families (1.6 %) dropped out early during treatment and were removed from the analyses. All but one family in the study were native Norwegians. Child and family characteristics for the total sample are presented in table 1.

Insert table 1 about here

Procedures

Information about the study was given to referral agencies or professionals such as teachers, physicians, health nurses, and child welfare workers throughout the project period. All clinically referred children were first screened by means of the Eyberg Child Behavior Inventory (ECBI) (6) (33) using the 90th percentile as a cut-off score according to Norwegian norms (31). Children who attained such a cut-off score or higher as rated by one of the parents were subsequently interviewed by one of three trained interviewers using the KIDDIE-SADS (see description below), and those who received a possible or definitive diagnosis of oppositional defiant disorder (ODD) and/or conduct disorder (CD) were offered to participate in the study. The term “possible diagnosis” refers to those children who scored one criterion less than the 4 required for a formal DSM-IV ODD diagnosis or the 3 items required for a formal DSM-IV CD diagnosis, and had diminished psychosocial functioning, a procedure suggested by Angold and Castello (3).

Data were collected from mothers, fathers and teachers before treatment, posttreatment and one year later. Parents were paid 250 Norwegian crowns (corresponding to about 31 euro) and teachers were paid 150 Norwegian crowns (corresponding to about 19 euro) at each time-point of assessment. The same teachers rated the children in day-care and school at pre- and posttreatment, however, at the one-year follow-up, some children had moved from day-care to school and other children had new teachers in school.

Treatment

Parent training (PT). Ten to twelve parents met in groups with 2 therapists at the clinic during a 12-14 week period for a weekly 2-hour session and participated in the Basic Incredible Years Parenting Program (40). The program teaches parents the use of positive discipline strategies, effective parenting skills, strategies for coping with stress, and ways to strengthen child social skills.

Child therapy (CT). Six children and 2 therapists met weekly in 2-hour session during 18 weeks in the Incredible Years Dinosaur School Program administered at the clinic (40). The treatment program addresses interpersonal difficulties in young children with ODD with the aims to increase child social skills, conflict resolution skills, playing and cooperation with peers.

For further descriptions of the two treatment approaches, see Webster-Stratton and Hammond (1998). Fortyseven children were randomized to PT treatment and 52 children to combined PT+CT treatment.

Strategies to involve teachers. All parents in the study were asked to inform the classroom or day-care teacher about how they worked with promoting positive behaviours in the child in the PT program. The teachers were offered to participate in one meeting together with the parents, and one of the therapists to receive information about the treatment program. About 60% of the teachers participated in such a meeting. Therapists in the CT group sent six letters informing the teachers about tasks dealt with in these groups and had 1-2 telephone calls about current issues addressed in child therapy sessions.

Waiting-list group (WLG). Twenty-eight families were assigned to a waiting-list group condition and had no contact with the clinic or researchers between pre- and post assessments in the treatment groups. For ethical reasons, the families in the waiting-list control group were offered treatment after 6 months and were excluded in the one-year follow-up assessment.

In the present sample, only 5 children with ADHD were on drug treatment when entering the study, and were required to have been medicated for at least 6 months to be eligible for the study.

Assessment measures

Eyberg Child Behavior Inventory (ECBI). The ECBI is a 36-item inventory for parents to assess conduct problem behaviours among children aged 2-16 years on a 1-7 scale (6) (33). In this study, total intensity scores were used (range from 36 to 252) to indicate frequency of behaviour problems. Internal consistency was in the present study found to be .82, and test-retest has been reported to be .86 (38).

Child Behavior Checklist (CBCL). The CBCL addresses social competence, emotional and behavioural problems in children as rated by their parents (1). CBCL consists of syndrome, problem and competence scales. In this study, the social competence subscale was used, consisting of 6 items (e.g. mean of participation in organizations, frequency of contact with friends, behavior with others, behavior alone) rated on a 0-2 scale. Internal consistency for social competence was found to be .55. Test-retest reliability has been found to be high and inter-parent agreement to range from .65 to .75 for the three competence subscales (1).

KIDDIE-SADS. This semi-structured diagnostic interview is designed to assess

psychopathology in children and adolescents according to DSM-IV criteria (16). Here, only the diagnoses most relevant for the 4-8 age-group were included being based on parents' reports of current psychopathology among children. Three trained persons conducted the diagnostic interviews. All interviews were recorded and random checks showed high reliability in that all Kappa scores were above .90.

Social Competence and Behavior Evaluation (SCBE). The SCBE includes 80 items designed for kindergarten or school teachers to assess patterns of social competence, affective expression, and adjustments difficulties in children (22). In this study, only the subscale for isolated – integrated aspects in peer-interactions consisting of 10 items (e.g. isolated from the group, children seek him/her out to play with them, does not respond to other children's invitation to play, initiates or proposes games to other children) was used. Scores range from 0 to 5 and an average score is computed. Alpha coefficient for internal consistency in the present study was .67.

The Child Loneliness and Social Dissatisfaction Questionnaire (LSC). The LSC is a 24-item verbal questionnaire, where an interviewer asks the child to respond to questions on a 3-point scale ("Yes", "Sometimes" or "No") (5). Sixteen items assess children's feelings of loneliness, appraisal of their current peer relationships, perceptions of the degree to which important relationship needs are met, and perceptions of their own social competence. A sum score ranging from 16 to 48 was computed and internal consistency was .77.

The Wally Child Social Problem-Solving Detective Game (WALLY). This measure is designed to assess both qualitative and quantitative dimensions of the child's problem-solving ability (41). The child is presented with 12 illustrations of hypothetical social problem

situations and then asked to resolve the problems in the picture. She/he is encouraged to give as many answers as he/she can for each situation scored on the basis of 16 prosocial or 17 negative solutions. Here, only number of prosocial solutions was used. Inter-rater reliability for coding responses was checked for 20% of the Wally-tests and agreement was above .80.

Statistics

Analyses of differences between group means between pre and posttreatment were conducted by means of ANCOVAs using pretreatment scores as covariate and treatment-group including the three treatment conditions as a between-group factor, followed by Bonferroni post hoc test when overall effects were significant. For analyses of follow-up data, repeated measures of ANOVA were used to examine interaction effects from posttreatment to the one-year follow-up (WLC group excluded). Due to the drop out of 2 families in the PT group, between-group analyses were only carried out for per protocol subjects (treatment completers). Student t-test was used to investigate differences between the two treated groups for changes between pretreatment and the one-year follow-up in regard to sex, age-group and comorbid ADHD diagnosis.

Effect sizes (eta square) were estimated using Cohen's criteria (8) for small (1% to 5.9%), medium (5.9% to 13.8 %) and large (13.8 % and more) effects. Bivariate correlations were analysed by means of Pearsons product-moment coefficients. Correlations between .30 and .50 were regarded as moderate and sizes higher than .50 as high (20). Differences between correlations in independent samples were tested with Fisher's z. An alpha level of $p < .05$ indicated statistical significance.

Results

Change in child social competence as reported by different informants

The results of ANCOVA revealed a significant main effect for treatment condition in father reports of child social competence on the CBCL using pretreatment scores as covariate, $F(2,62) = 5.60, p < .01, ES = 15.3\%$. Subsequent Bonferroni post hoc analyses showed that both the combined PT+CT and the PT treatments significantly enhanced social competence in the child as compared to those in the WLC ($p < .01$ and $p < .05$, respectively) (Means and SDs are presented in table 2). Further, analyses of follow-up data by means of repeated measures of ANOVA revealed no significant difference over time or by treatment group (PT vs PT+CT), indicating that the results from posttreatment were well maintained across the one-year follow-up period.

The results of ANCOVA of mother ratings of child social competence on the CBCL revealed a significant main effect of treatment condition posttreatment, $F(2,100) = 3.0, p = .05, ES = 5.7\%$. Subsequent post hoc analyses approached borderline significance ($p = .06$) in regard to difference between the PT+CT and WLC groups, indicating that the combined treatment produced more positive changes in the child as compared to those in the WLC group. Analyses of follow-up data revealed nonsignificant results indicating that the results after treatment remained stable one year later.

The results of ANCOVA for child report of number of prosocial strategies used in the WALLY test, showed a significant main effect of treatment condition after treatment, $F(2,101) = 5.25, p < .01, ES = 9.4\%$. Subsequent post hoc analyses showed that children in the combined PT+CT group significantly ($p < .001$) enhanced their number of solutions as compared to those in the PT group (showing a decrease in number of solutions from pre to posttreatment), however, no difference was found in comparison with the WLC group. The results of repeated measure of ANOVA revealed no significant change by treatment condition (PT vs PT+CT) from posttreatment to the one-year follow-up, indicating that the positive results obtained for children in the combined PT+CT group remained stable during this time

period. Although children in the PT group showed an increase in the number of prosocial solutions between posttreatment and the one-year follow-up, this change was nonsignificant.

Insert table 2 about here

Neither was any significant main effect found on child or teacher ratings of peer-interactions (on the LSC and the SCBE, respectively) in day-care/school settings.

Changes of child social competence in regard to sex, age-group and comorbid ADHD diagnosis

For change scores in child social competence from pretreatment to the one-year follow-up, only father reports on the CBCL showed a significant difference, $t = -2.87$, $p < .01$, $ES = 18.2$, in that children with comorbid ADHD diagnosis vs. no diagnosis showed the greatest change in child social competence scores. No difference was found regarding sex or age-group for any of the other informants.

Correlations between different informants before and after treatment

Correlations between reports from mothers (CBCL), fathers (CBCL), teachers (SCBE) and children (LSC and WALLY) regarding social competence in the child were examined before and after treatment for each of the three treatment groups.

Stable significant correlations throughout the treatment period were found only for mother and father reports (see table 3). In both treatment groups, correlations between mother and father reports were reduced from pre to posttreatment, while correlations remained stable and high in the WLC group. Fisher's z -test revealed significantly ($p < .05$) higher correlations in the WLC as compared to those for the PT and the PT+CT groups after treatment. Before

treatment there was no significant difference between the three groups in regard to parental evaluations, neither was any difference found at the one-year follow-up for the PT and the PT+CT groups.

Insert table 3 about here

No stable pattern within the different treatment groups across time was found in correlations between mother (CBCL) and child reports (LSC and WALLY) (see table 3). All other correlations were low and nonsignificant.

Discussion

In the present study, we investigated the effects on various aspects of child social competence after participating in treatment with the Incredible Years parent training program (PT) alone and parent training combined with child treatment (PT+CT) (40) as rated by multiple informants, i.e. mothers, fathers, teachers and young children aged 4-8 years. The use of multiple informants highlights the complexity of the social competence construct and how social competence in the child is displayed in different settings. Overall, the main findings of the study showed inconsistent evaluations among the different informants, especially among those rating the child in different settings, i.e. parents and teachers.

After treatment about 60 % of the children scored within the normal variation on the ECBI, and at the one-year follow-up, 67 % of the children no longer met diagnostic criteria for ODD (27), indicating a positive development in regard to child conduct problems after treatment.

Fathers in both the PT and the combined PT+CT groups reported a significant increase in child social competence scores, a finding further underlined by high effect size. Mothers

reported a tendency of treatment improvement ($p=.06$) for children in the combined PT+CT group, while child report showed a significant increase, with a medium effect size, in the number of prosocial solutions only after being treated with CT added to PT. An important finding was that all positive changes in child social competence reported after treatment were well maintained one year after.

A finding adding to present knowledge about treatment effects on child social competence however, contradicting findings in other studies (34) (39) (42) was that fathers in the PT condition reported significant positive treatment effects lasting one year after treatment. Although similar tendencies in results were noted posttreatment for mother, child and teacher reports for children in the PT group, these changes were nonsignificant. This result suggests that PT only may lead to enhanced social competence in the child, and that other strategies for involving teachers and children in this treatment condition may further enhance the effects.

In a previous study, we found that teachers did not report positive changes in their assessment of a broader social competence construct (13), a finding supporting the present finding of no changes in the child's peer-interactions in day-care/school settings after PT and PT+CT treatment. This outcome is in line with other studies showing few cross-setting generalisation effects after parent training (35), but is inconsistent with earlier findings of added effects on quality of peer-interactions of combined parent and child training (7) (9) (18) (21) (39) (42). However, inconsistency in findings between studies may depend on the use of different measures and informants and that different aspects of child social competence have been evaluated in different settings.

In the present study, correlations between reports of treated parents showed a decrease after treatment, while ratings of untreated parents remained stable and very high across the waiting-list period. Although no significant difference in correlations was found between parents in PT, PT+CT or WLC condition before treatment, correlations between parents in the

WLC group were significantly higher after the waiting period of four months than for those in both the PT and the PT+CT conditions. In spite of the fact that treated parents were supported by their therapists to cooperate and discuss their child's behaviour and functioning throughout the treatment period, the size of inter-parent correlations decreased after treatment. For treated parents the shared variance in their evaluations of child social competence scores decreased from about 50% to 25%, indicating that they throughout treatment developed more different pictures of social competence in the child. In contrast, parents in the waiting-list group kept a very similar view on child social competence and the same time period. In a qualitative study of the parents in the present study, they reported positive changes in their understanding of the child during treatment (24). The results of our study showed that fathers of treated children changed their view of child social competence more than mothers did. This underlines the importance of using both mothers and fathers as informants when effects of treatment of children are systematically evaluated.

As expected, informants from different settings showed low levels of associations before and after treatment. Low to moderate levels of association were also found between the child and the adult informants. These findings are in line with previous studies using multiple informants in ratings of social competence in the child (32), and support the unique contribution of each informant in the assessment of child social competence.

However, changes in child social competence levels did not differ in regard to sex or age for any of the informants and changes in child social competence in regard to comorbid ADHD-diagnosis differed only for father ratings. Father reports of higher levels of positive change in social competence for children with comorbid ADHD-diagnosis are of particular interest in that children with combined conduct and ADHD problems face a worse prognosis for lasting psychosocial problems and have also been found to be more difficult to treat (29). However, because no other informant reported higher levels of social competence change for

children with ADHD, this finding may be less valid and needs to be replicated in future studies.

The present study included a highly selected clinic sample of children with defined oppositional or conduct disorders recruited to a controlled treatment study. Our findings may therefore differ from those in other school-based or clinic samples of young children with conduct problems. However, our selected sample included children often hard to treat, and the positive outcomes of the present study should therefore be quite robust. The small number of children in the study limits the statistical power in our analyses, and the likelihood of obtaining significant differences between groups. A strength of the study was that a reduction of severe noncompliant and aggression problems in the same children has been documented at home (27), a necessary condition when examining generalisation effects to other kinds of behaviours and settings (25).

One important clinical implication of the study is that changes in child social competence levels need to be specifically addressed in evaluation of treatment effects in young children with conduct problems as viewed by multiple informants. In spite of reduced levels of aggression problems at home and enhanced social competence as reported by parents, most of the children still struggled with peer-relationships in day-care/school settings as reported both by teachers and the child itself. To further increase levels of social competence and peer-relationships, interventions need to target specific problems in these different settings. Another clinical implication is the use of multiple informants to broaden the information about changes of social competence in the child across treatment also evident in different settings.

Future intervention studies directed towards children with conduct problems should use broad assessment tools to assess child social competence. The various contributions of

different informants viewing the child in different settings need to be further investigated when social competence is addressed in intervention studies.

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Table 1. Child and family characteristics. Percentages and number of subjects within parenthesis.

	% (n)	
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Child		
Gender		
Boys	80 %	(101)
Girls	20%	(26)
Age ^a	6,6	(1,3)
Setting		
In day care	31 %	(39)
In school	69 %	(87)
Family		
Living situation		
Both parents ^b	47 %	(60)
Mother and stepfather	21 %	(26)
Single mothers	32 %	(41)
Mother education		
College or university	14 %	(16)
High school or partial college	78 %	(90)
Partial high school or less	8 %	(9)
Father education		
College or university	19 %	(18)
High school or partial college	72 %	(69)
Partial high school or less	9 %	(9)
Child psychiatric diagnoses		
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ODD, possible diagnoses	13 %	(16)
ODD, confirmed diagnoses	87 %	(111)
CD, possible diagnoses	11 %	(14)
CD, confirmed diagnoses	8 %	(10)
ADHD ^c	35 %	(45)
Anxiety/depression	10 %	(13)
Enuresis	14 %	(18)
Encopresis	7 %	(9)
Tourette/tics	4 %	(5)

Note. ^aMean and SD.

^bIncluding 8 adoptive and foster parents and 4 parents with shared custody.

^cIn the present study, only 5 children with ADHD were on medication when entering the study.

Social competence and multi-informants

Table 2. Means and SDs for child social competence as rated by mothers, fathers, child and teachers before and after treatment and at the one-year follow-up, by treatment condition.

	PT		PT+CT						WLC							
	Pre		Post		FU		Pre		Post		FU		Pre		Post	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Mother reports (CBCL)	3.6	2.1	4.6	1.9	5.0	1.9	3.3	1.9	4.5	2.2	4.7	1.9	3.5	2.1	3.5	2.0
Father reports (CBCL)	3.8	1.8	5.1	1.7	5.0	1.8	3.6	1.9	5.1	1.9	5.3	1.5	4.0	2.0	3.6	2.1
Child reports (WALLY)	21.2	12.4	23.3	13.7	25.6	13.2	22.1	11.4	30.0	13.2	29.5	10.4	23.2	12.6	26.9	14.6
Child reports (LSC)	23.6	5.9	22.9	5.7	23.9	7.3	24.4	6.5	23.0	6.0	23.2	6.4	23.1	3.8	23.1	6.9

Social competence and multi-informants

Teacher																	
reports	3.1	0.9	3.1	0.7	3.2	0.7	3.1	0.8	3.3	0.7	3.2	0.7	3.0	1.0	3.0	0.7	
(SCBE)																	

Note.

CBCL= The Child Behavior Checklist.

WALLY= The Wally Child Social Problem-Solving Detective Game.

LSC= The Child Loneliness and Social Dissatisfaction Questionnaire.

SCBE= Social Competence and Behavior Evaluation.

Table 3. Significant correlations between different informants before and after treatment, and at the one-year follow-up by treatment condition on various social competence measures.

	PT	PT+CT	WLG
Mother and father before treatment (CBCL)	.72**	.75**	.88**
Mother and father after treatment (CBCL)	.51**	.59**	.90**
Mother and father at the one-year follow- up (CBCL)	.75**	.48*	
Mother (CBCL) and child (LSC) before treatment	-.35*		
Mother (CBCL) and child (LSC) after treatment		.32*	
Mother (CBCL) and child (WALLY) before treatment	.31*		

Note. * $p < .05$, ** $p < .01$.

CBCL= Child Behavior Check List.

WALLY= The Wally Child Social Problem-Solving Detective Game.

LSC= The Child Loneliness and Social Dissatisfaction Questionnaire.