Effectiveness of a mental health promotion program to improve coping skills in young children: Zippy’s Friends

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Abstract

We present the results of an evaluation of the implementation and short-term effects of Zippy’s Friends, a school-based 24-week mental health promotion program to teach children coping skills. The evaluation was conducted in Denmark (322 children in 17 first grade classes) and Lithuania (314 children in 16 kindergartens classes) with control groups in Lithuania (104 in 6 classes) and Denmark (110 in 6 classes). The program was successfully implemented with minimal support. Participants used significantly more positive coping strategies and showed significantly improvement in Social Skills compared to the control groups. In Lithuania, where control group scores on these variables were available, the problem behaviors of Externalizing and Hyperactivity decreased.

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Zippy’s Friends is a 24-week school-based program to help young children better cope with everyday adversities. The program has taken over 7 years to develop and perfect and is now distributed by the non-profit organization Partnership for Children. Over 30,000 children in Brazil, Canada, Denmark, England, Iceland, Honk Kong, Lithuania, Norway and Poland have participated in Zippy’s Friends to date. This article presents the results of an evaluation of the implementation and the effects of the latest revised version of the program conducted with kindergarten children in Lithuania and first grade children in Denmark.

Early experiences and relationships in the family, kindergarten and school set the stage for how a child develops social and emotional skills, such as the ability to manage emotions, form and maintain positive friendships and cope with difficulties (Humphrey, 1988; Miars, 1995; Sterling, Cowen, Weissberg, Lotyczewski, & Boke, 1985). Learning social and emotional skills is considered to be similar to learning academic skills in that the effects of initial learning are enhanced over time to address the increasingly complex situations that children face (Greenberg et al., 2003).

Based on this knowledge, several socio-emotional curriculum programs targeting young children have been developed during the past 20 years. These programs vary in their target groups, program goals, content and intervention strategies. Some programs works with disadvantaged at-risk groups of young children (Denham & Burton, 1996; Miller-Heyl, MacPhee, & Fritz, 1998), children identified as aggressive (Vaughn, Ridley, & Bullock, 1984) or children exhibiting early onset conduct problems (Webster-Stratton & Hammond, 1997). Others were developed as universal classroom curricula (Forness, Serna, Kavale, & Nielsen, 1998; Geller, 1999) or as both special-risk group and universal classroom interventions (Kusché & Greenberg, 1994). Usually the universal programs have the ultimate goal of preventing a
specific behavior problem, such as drug and alcohol abuse (Geller, 1999), conduct disorders (Spivack, Platt, & Shure, 1976) or violence (Grossman et al., 1997).

The present program, **Zippy’s Friends**, is a universal program for preschool and first grade children, which has its main focus on training children to cope with everyday adversities and negative life events. Research on coping over the past 20 years, based upon the conceptual framework of Lazarus and Folkman (1984), has demonstrated that the negative effects of stressful life events and problem situations in youth and adults can be moderated by the use of appropriate coping skills (Bockaerts, 1996; Sandler, Braver, & Gensheimer, 2000). The underlying hypothesis in developing **Zippy’s Friends** is that if children learn at a young age to expand their repertoire of coping abilities, they will be less likely to develop serious problems in childhood, adolescence and even adult life when they are confronted with the inevitable occurrence of stressful situations.

Segal (1983) cautions that effective public education to improve children’s coping responses should not be based on the hypothesis that there are certain ways of coping which are intrinsically better or worse for all children in all situations. This caution concurs with Lazarus and Folkman’s (1984) view that different ways of coping may be more appropriate for different situations and different children. Therefore, **Zippy’s Friends** aims to provide effective training in coping skills by expanding children’s repertoire of coping skills and their abilities to adapt their coping patterns to different situations.

Preventive models based on training single skills have been found to be less effective than multi-modal programs that integrate problem solving, social skills and emotional understanding (Weissberg & Elias, 1993). Thus, **Zippy’s Friends** also teaches social and emotional skills such as recognising and expressing feelings, exercising self-control, self-assertiveness and dealing with conflict situations. Such skills are considered important abilities that facilitate adaptive coping behavior. Furthermore, in accordance with recommendations for effective preventive strategies, transfer of training to real life situations is also a main component of the program.

Most evaluations of primary prevention programs have been conducted with older children. Meta-analyses on programs teaching affective, cognitive and behavioral skills with youths under the age of 18 have shown moderate effect sizes and there are no instances of programs having negative impacts (Durlak & Wells, 1997; Schneider, 1992). A recent review by Joseph and Strain (2003) identified 10 studies in the kindergarten, preschool and early grades that assess the effects of socio-emotional training in young children. Some of these programs were for children who had been identified as at risk (Denham & Burton, 1996; Vaughn et al., 1984; Walker et al., 1998). Five of the programs they identified were universal, curriculum based and developed for preschool or first grades. The universal classroom self-determination curriculum developed by Forness et al., which focuses upon a number of critical adaptive skills, showed decreases in problem behaviors and increases in adaptive skills (Forness et al., 1998). Several limitations, including small sample size and lack of data on the implementation, warrant cautious interpretations of the results.

Another classroom program, focusing on substance abuse and violence prevention, showed improved resiliency-related skills (Dubas, Lynch, Gallano, Geller, & Hunt, 1998). However, these results may be biased because the teachers in the intervention group were more experienced than the teachers in the control group. Also, teachers’ and children’s behaviors were measured only by the teachers who administered the intervention.

The evaluation of the universal classroom curriculum to prevent conduct problems, The Second Step, found significant decreases in physical aggression and a friendlier classroom atmosphere in the intervention groups compared to the controls, as measured by observations (Grossman et al., 1997). However, there were no differences between experimental and control groups on the parent and teacher ratings. An extensive evaluation of the widely used ICPS (Interpersonal Cognitive Problem Solving Program) developed by Spivack et al. (1976) demonstrated improvement in interpersonal problem solving. They documented that children can generate alternative solutions to interpersonal problems, resulting in better behavior ratings by teachers (Share & Spivack, 1980, 1982). However, their problem solving training and rating scales utilize hypothetical situations, and transfer to real life situation remains to be documented (Joseph & Strain, 2003).

The effects of the PATHS: Promoting Alternative Thinking Strategies curriculum (Kush & Greenberg, 1994) has been studied in three different randomized control trials: one with normally developing students, one with children who were deaf and one with children who are in special education. In the general education classes the students showed reduced aggression and hyperactive-disruptive behavior. The evaluation of the PATHS program, using the school class as the unit of analysis, showed significant effects on classroom aggression and classroom atmosphere in grade 1 classes (Conduct Problem Prevention Research Group, 1999). Another program, Dinosaur School Program, was designed for small groups of children exhibiting conduct problems, and has shown positive results (Webster-Stratton...
The program is currently being implemented as a universal intervention program in kindergarten and first grade in the U.S. The preliminary results, that are not yet published, are cited as promising (Joseph & Strain, 2003).

We conclude that there is a growing consensus that promoting social-emotional competencies is an effective way to reduce aggressive and disruptive behavior problems as well as to enhance the social adjustment of children. More studies with different preventive aims, larger samples, diverse cultural settings and pre-post experimental designs with control groups are still needed. Moreover, we concur with Durlak and Wells’ (1997) recommendations that future research should, in addition to assessing effects, specify program goals and intervention procedures and include an evaluation of the program implementation.

The present study to assess the effects of Zippy’s Friends takes into accounts several shortcomings in the evaluation of previous programs. This evaluation includes a fairly large sample from several schools and kindergartens in two different cultures, and involves a wide variety of outcome measures. These measures were based on both teacher observations and interviews with children conducted by trained interviewers who were ‘blind’ to the program’s aim and content. Furthermore, the implementation process was carefully monitored and assessed.

1. The development and description of Zippy’s Friends

Zippy’s Friends was initially developed by Befrienders International, a non-profit organization involved primarily in suicide prevention, as a mental health promotion program to help children avoid developing adjustment problems later in life. A team of international consultants examined contemporary research and proposed a program beginning at as young an age as possible and focusing on the learning of better coping skills. Based upon their guidelines Befrienders International, contracted writers, illustrators, psychology and education specialists to make specific components of the program.

2. Pilot testing of the first version of the program

The revised program Zippy’s Friends is based upon the initial program that was tested in Denmark in 1998–1999 and was the object of an evaluation comparing 214 participants in the program with a control group of 109 children who did not participate (Mishara & Ystgaard, 2000). Basically, the evaluation found that the program could be successfully implemented. That is, children eagerly participated in the activities, they enjoyed the activities and the program was appreciated by the teachers and volunteers who conducted the activities. Compared to the Control group, there were significant improvements in several social skills. However, there were no significant changes in coping behaviors based upon individual assessments of children as well as teachers’ observations.

On the basis of these evaluation results, a revised program was developed with more emphasis on coping and incorporating the characteristics of the sessions that were shown to be most effective with children. This revised program was pilot tested on children in Montreal (Quebec), Canada to verify that children could easily participate in the activities, teachers could conduct the sessions and both teachers and children enjoyed the program. However, more extensive testing was needed to verify if the program could be implemented as planned and attained its goals of improving children’s coping abilities in addition to improving social skills.

3. Description of the revised program

The revised Zippy’s Friends consists of 24 sessions, conducted each week by a teacher. The program is built around a set of six illustrated stories that concern a group of young children and a pet insect called Zippy. The sessions are divided into six modules, each focusing on a particular theme (see Table 1). Each session has specific goals and includes 2–3 participatory activities.

Zippy’s Friends does not tell children what to do, nor does it indicate what is right or wrong. Instead, it encourages children to explore and think for themselves. Furthermore, rather than focusing on helping children to cope individually with their own problems, the program emphasizes the importance of talking to others, listening, as well as giving and receiving help. Repetition is used to reinforce learning of key elements. Each session begins with a review of what the children learned the previous week and the key messages are reinforced throughout the program.
Table 1

<table>
<thead>
<tr>
<th>Module 1: Feelings</th>
<th>Goal</th>
<th>To improve children’s abilities to recognize negative feelings and to identify coping strategies to deal with these feelings</th>
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<tbody>
<tr>
<td>SESSION 1: FEELING SAD–FEELING HAPPY</td>
<td>Improve children’s abilities to recognize feeling sad and to identify ways to cope with feeling sad</td>
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<tr>
<td>SESSION 2: FEELING ANGRY OR ANNOYED</td>
<td>Improve children’s abilities to recognize feelings of anger and annoyance and to identify ways to cope with these feelings</td>
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<tr>
<td>SESSION 3: FEELING JEALOUS</td>
<td>Improve children’s abilities to identify feelings of jealousy and to learn ways to cope with this feeling</td>
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<tr>
<td>SESSION 4: FEELING NERVOUS</td>
<td>Improve children’s abilities to recognize feeling nervous and to identify ways to cope with this feeling</td>
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<tr>
<th>Module 2: Communication</th>
<th>Goal</th>
<th>To improve children’s abilities to communicate their feelings</th>
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<tbody>
<tr>
<td>SESSION 1: IMPROVING COMMUNICATIONS</td>
<td>Improve children’s abilities to recognize characteristics of effective and ineffective communications</td>
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<tr>
<td>SESSION 2: LISTENING</td>
<td>Improve children’s abilities to listen</td>
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<tr>
<td>SESSION 3: WHO CAN HELP US?</td>
<td>Improve children’s abilities to ask for help</td>
<td></td>
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<tr>
<td>SESSION 4: SAYING WHAT YOU WANT TO SAY</td>
<td>Improve children’s abilities to say what they want to say</td>
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<tr>
<th>Module 3: Making and breaking relationships</th>
<th>Goal</th>
<th>To improve children’s abilities to make friends and to cope with rejection and loneliness</th>
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<tbody>
<tr>
<td>SESSION 1: HOW TO KEEP A FRIEND</td>
<td>Improve children’s abilities to recognize how to keep their friends</td>
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<tr>
<td>SESSION 2: DEALING WITH LONELINESS AND REJECTION</td>
<td>Improve children’s abilities to cope with loneliness and rejection</td>
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<tr>
<td>SESSION 3: HOW TO RESOLVE CONFLICTS WITH FRIENDS</td>
<td>Improve children’s abilities to resolve conflicts with friends</td>
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<tr>
<td>SESSION 4: HOW TO MAKE FRIENDS</td>
<td>Improve children’s abilities to make friends</td>
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<tr>
<th>Module 4: Conflict resolution</th>
<th>Goal</th>
<th>To improve children’s abilities to resolve conflicts</th>
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<tbody>
<tr>
<td>SESSION 1: HOW TO RECOGNISE GOOD SOLUTIONS</td>
<td>Increase children’s abilities to recognize characteristics of a good solution</td>
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<tr>
<td>SESSION 2: BULLYING</td>
<td>Improve children’s abilities to deal with situations involving bullying</td>
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<tr>
<td>SESSION 3: SOLVING PROBLEMS</td>
<td>Improve children’s abilities to resolve conflicts</td>
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<tr>
<td>SESSION 4: HELPING OTHERS RESOLVE CONFLICTS</td>
<td>Improve children’s abilities to help others resolve conflicts</td>
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<tr>
<th>Module 5: Dealing with change and loss</th>
<th>Goal</th>
<th>To improve children’s abilities to cope with change and loss</th>
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<tbody>
<tr>
<td>SESSION 1: CHANGE AND LOSS ARE PART OF LIFE</td>
<td>Increase the children’s understanding that change and loss are part of normal everyday experiences</td>
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<tr>
<td>SESSION 2: COPING WITH DEATH</td>
<td>Increase the children’s understanding that death is a normal part of life; and to improve children’s abilities to cope with situations involving grief and loss</td>
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<tr>
<td>SESSION 3: VISIT TO A GRAVEYARD</td>
<td>Improve children’s abilities to talk about death and loss</td>
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<tr>
<td>SESSION 4: BENEFITS OF CHANGE AND LOSS</td>
<td>Improve children’s understanding that change and loss often have positive effects</td>
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<tr>
<th>Module 6: We cope</th>
<th>Goal</th>
<th>To use a variety of coping strategies in different situations</th>
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<tbody>
<tr>
<td>SESSION 1: DIFFERENT WAYS TO COPE</td>
<td>Improve children’s abilities to use different coping strategies</td>
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<tr>
<td>SESSION 2: HOW TO HELP OTHERS</td>
<td>Improve children’s abilities to help others cope with different situations</td>
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</tr>
<tr>
<td>SESSION 3: ADAPTING TO NEW SITUATIONS</td>
<td>Improve children’s abilities to generalize their coping skills to new situations</td>
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<tr>
<td>SESSION 4: CELEBRATING TOGETHER</td>
<td>Review what we have learned during this program and to celebrate together</td>
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4. Facilitator training and the implementation process

The teachers who were the facilitators in the program each participated in a 2-day training workshop before it began. This workshop explained the goals of the program, the theory behind it, why it was organized as it is, and the importance of each of the components. The workshop also reviewed each of the program activities, so that the teachers would be better prepared to conduct the program as planned. In each country a coordinator was in charge of the implementation process and met regularly with the teachers and provided support and consultation for them throughout the program. However, in both Denmark and Lithuania, the persons involved in collecting data for evaluation purposes were completely independent of those persons who were involved in supervising and implementing the program.

5. Evaluation goals

The evaluation of the revised program had two complementary goals: (1) to determine if the program was successfully implemented as planned, and (2) to determine if the program had significant short-term effects on the children who
participated in it, when compared with children in a control group who did not. Obviously, one would not want to try
to determine if the program was effective until one has determined whether it was implemented as planned. It was
hypothesized that, after participation, children would use more coping strategies, and specifically more positive coping
mechanisms, and that they would also have improvements in social skills and decreases in some problem behaviors.

6. Methods

6.1. Participants

The Experimental Group in Lithuania consisted of 314 children (171 boys, 143 girls) from 16 kindergarten classes
in 11 schools in Vilnius. Although Zippy’s Friends was designed primarily for first grade children, the first pilot test
results indicated that it could be used as well in kindergarten and second grade. The decision to use kindergarten
children in Lithuania was based upon the availability of easy access to the children in terms of both implementing
the program for the full 24 weeks and having teachers available to participate in the evaluation by completing the
evaluation questionnaires and observation forms. Six classes in other Vilnius kindergartens constituted the control
group in Lithuania of 104 children (52 boys, 52 girls). The Control Group classes were chosen in other schools with
socio-economic conditions comparable to the Experimental Group and the school directors were informed that the
program would be offered to them the year after the evaluation was completed. In Lithuania, the average age of
experimental group children was 74.0 months (S.D. = 4.58) and 72.7 months (S.D. = 4.90) in the control group, or
about 6 years old, at the beginning of the academic year just before the Zippy’s Friends program began. It is interesting
to note that this age is equivalent to the age of first grade children in North America.

The Experimental Group in Denmark consisted of 322 children (160 boys, 162 girls) from 17 first grade classes
in 12 schools in the county of Fyn. Six classes in other schools in Fyn, comparable in socio-economic conditions,
constituted the control group of 110 children (53 boys, 57 girls). Since we had no reason to believe that developmental
changes in behaviors we measured would be different 1 year later, and in the face of severe budget constraints, we
chose to use the control sample from the previous year rather using the limited research funds to assess a new control
group and thus have to reduce the data collection on the rest of the sample. However, we felt it was important to include
a separate control group in Lithuania because of the cultural differences and the fact that the interview instruments
were in another language and different interviewers were being used. The average age of the Experimental Group in
Denmark was 89.1 months (S.D. = 6.75) and in the Control Group it was 88.4 months (S.D. = 6.49) (about 7.5 years
old) just before the program began.

6.2. Procedure and measures

6.2.1. Evaluation of the implementation

The implementation of the program was evaluated based upon information provided by the teachers who were the
facilitators for the program, and outside observers. In Denmark, the facilitators were the first grade teachers for each
class. In Lithuania, where the program was conducted in kindergartens, there are two teachers for each class. Therefore,
we obtained two independent reports from each of the classes. The two methods used to assess the implementation
were Session Reports and interviews with the teachers after the program was completed.

The Session Reports consisted of forms that the teachers completed after each of the 24 sessions. Teachers indicated
the number of children present and the number who participated in the activities on that day; described whether or
not the session was conducted as planned; assessed how much the children enjoyed the session; gave their opinion as
to whether the session was useful for the children; described any unusual and/or unexpected reactions to any of the
activities during the session; indicated whether the notes to the teachers were clear and sufficient for the session; and
described any changes to the activities which the teacher had made. The data on enjoyment of the sessions and the
assessment of usefulness for the children and the clarity of the facilitator notes were rated on an ordinal 5-point scale
(from 1 = not at all to 5 = extremely). The qualitative data in Lithuania were translated into English and the qualitative
data from Denmark were analysed and translated by one of the authors (M.Y.).

After the end of the program, each of the teachers was interviewed individually by the evaluation coordinators and
asked to report on their experiences with and impressions of the program using a standardized interview. The teachers
were asked to rate on a 5-point scale (from 1 = very negative to 5 = very positive) their expectations of the program
before it started; their overall impressions of the program afterwards; whether or not they felt the program was effective in reaching the main objective of helping children cope with everyday problems; the adequacy of the facilitator training they received; and the adequacy of the support they received during the program. In addition, each of the teachers was asked what major changes they would suggest in order to improve the program; what were the main hindrances to carrying out the program as planned; what changes they observed in the children; what they had learned from the program; and any other comments to help improve the program and its implementation.

6.2.2. Evaluation of the effects
The evaluation of the effects of the program was conducted using a quasi-experimental design with standard questionnaires and observation methods, including the same evaluation tools that were used to evaluate the first pilot testing of the original program in Denmark. Teachers in the Experimental groups rated the children before and after participation and the Control group children were evaluated by their teachers before and after an equivalent time period. In addition, a trained interviewer interviewed each child before and after implementation of the program or an equivalent time period in the control group.

6.2.2.1. Observations by teachers. The teachers used the Social Skills Questionnaire, Teacher Form, Elementary level (SSQTF) (Gresham & Elliot, 1990), translated with permission from the American Guidance Service, Inc., to observe children’s behaviors. This questionnaire involves rating of the frequency of different observed behaviors. Sub-scale scores on social skills were calculated for Cooperation, Assertion and Self-Control. Examples of Cooperation behaviors include: “Attends to your instructions” and “Easily makes transition from one classroom activity to another.” Examples of Assertion are: “Joins ongoing activity or group without being told to do so” and “Invites others to join in activities.” Self-Control behavior examples are: “Controls temper in conflict situations with peers” and “Receives criticism well.” In addition to these scales which were used in the first pilot testing, the teachers were also asked to observe and report on the frequency of occurrence of problem behaviors. These problem behaviors are classified into three sub-scales: Externalizing, Internalizing and Hyperactivity. Examples of Externalizing include: “Fights with others” and “Has temper tantrums.” The Internalizing scale includes items such as: “Is easily embarrassed” and “Acts sad or depressed.” Examples of Hyperactivity are: “Interrupts conversations with others” and “Acts impulsively.”

In order to gather more information about the actual coping experiences of children, an observation form was developed by the researchers, inspired by the Schoolagers Coping Strategies Inventory (Ryan-Wenger, 1990). Both before and after the program, each of the teachers was asked to describe the most important conflict or problem that the child had recently experienced. They were further asked to describe how the child behaved in that situation and to indicate which of the 26 items in our version of the Schoolagers Coping Strategies Inventory the child used in that situation. The contents of the situations were categorized and the frequencies of the individual coping skills were examined individually and together.

6.2.2.2. Interviews with the children. Each of the children who participated in the experimental and control groups was interviewed at the beginning of the school year, using the student form of the Social Skills Questionnaire, Student Form, Elementary level (SSQSF) and the Schoolagers Coping Strategies Inventory. The interviews were conducted in Denmark by 25 different interviewers, who participated in a 3-h workshop that included instruction in conducting the interviews and discussions of core issues in the use of the instruments. In addition, the interviewers had individual training in using the instruments. The interviewers, who were all college students studying Education with prior experience of working with young children, were trained and supervised by the same person who also trained the interviewers for the evaluation of the first pilot program in Denmark. In Denmark, it was not possible to keep the interviewers unaware of which classes were participating in the program and which were not. However, they were not informed of the nature of the program that was being evaluated, nor its specific goals.

In Lithuania, the interviews were conducted by 10 different interviewers who received 14 h of training over 3 days, as well as practice interviews with five children and a day of discussion of the interviews and the instruments with the authors (B.M. and M.Y.). The interviewers included four psychologists, three speech therapists, two social work students and one special education teacher. All of the interviewers had prior experience of working with young children.

An educational psychologist supervised the data collection and conducted the interviewer training in consultation with the authors. As part of their training, the interviewers were told that they should know as little as possible about the nature of the program which was being evaluated and that they should not seek any information about the program.
until the evaluation was completed. They were not informed which children were in the Experimental or Control groups.

The Social Skills Questionnaire, Student Form, Elementary Level (SSQSF) (Gresham & Elliot, 1990) has questions concerning the same three dimensions of social skills that are assessed on the basis of teachers’ observations in the SSQTF: Assertion, Self-Control and Cooperation. However, the Student Form includes an additional scale of Empathy, which concerns behaviors that show concern and respect for other people’s feelings and viewpoints.

The Schoolagers Coping Strategies Inventory was developed by Ryan-Wenger (1990) and includes 26 questions concerning coping mechanisms. The child is asked on a scale of 0–3 how often he/she does each of these things when he/she feels stressed, nervous or worried. One of the questions, question #20 “Talk to someone,” was replaced in our version of the questionnaire with four more specific questions: (a) talk to a friend; (b) talk to a parent; (c) talk to a teacher; and (d) talk to someone else.

Since this inventory includes both positive coping mechanisms and mechanisms which may be less helpful (for example, “hit someone” or “get mad”), children are also asked to rate on a 4 point scale how much this way of coping helps. For the purpose of our analyses, we used a score in which the amount the coping mechanism is perceived as being helpful is multiplied by the score of how often the mechanism is used.

6.2.3. Reliability of the data

The SSQTF as well as the SSQSF are widely used to assess social skills and problem behaviors in children in North America. The questionnaires were developed to include valid and reliable ratings of the frequency of different observed behaviors. The Schoolagers Coping Strategies Inventory was developed specifically for use with very young children and has been the object of several studies of its validity and reliability.

Calculations of the internal consistency of the SSQTF, based upon the inter-item correlations as indicated by the Cronbach Alpha, were acceptably high in Denmark (Cooperation .90, Assertion .81, Self-Control .91) and in Lithuania (Cooperation .80, Assertion .78, Self-Control .77). The Cronbach Alphas for the SSQSF were low in Denmark (Cooperation .51, Assertion .36, Self-Control .35, Empathy .62), but they were acceptably high in Lithuania (Cooperation .81, Assertion .71, Self-Control .70, Empathy .74)

In the context of this evaluation, we had the opportunity to assess inter-rater reliability of the teacher observations, since two teachers in Lithuania conducted each of the observations for each child. Overall, there were significant correlations (p < .001, two-tailed tests, df = 20) between the ratings of the two teachers on every one of the subscales of the SSQTF in the pre-test (Cooperation r = .51, Assertion r = .55, Self-Control r = .40, Externalizing r = .66, Internalizing r = .42, Hyperactivity r = .61) and the post-test (Cooperation r = .60, Assertions r = .52, Self-Control r = .59, Externalizing r = .68, Internalizing r = .40, Hyperactivity r = .72). In all analyses in Lithuania, we used the average of both interviewers’ ratings in all data analyses.

7. Results

7.1. Implementation and teachers’ impressions of the program

On the basis of session reports as well as interviews with each of the teachers after the end of the program, it is evident that both in Lithuania and in Denmark all 24 sessions were generally completed as planned. The responses to the questions where the teachers were asked to indicate how much they agreed with a statement, were calculated individually for each of the 24 sessions and overall. Overall, children had an average enjoyment of the sessions on a 5-point scale that approximated the answer “very much” (see Table 2). The lowest rating for any session was halfway between ‘moderately’ and ‘very much’ and the very last session was rated as the most enjoyable. A score was calculated which indicated the percentage of children present during the session who participated in the activities. The average percentage of participation in Lithuania ranged from a minimum of 50% in session 5 to a maximum of almost 80% in session 19, and from a minimum of 70% in Denmark for session 5 to almost a 100% participation in three of the other sessions. There was however significantly more participation in Denmark. It is important to note that although all children did not actively participate in each session, for example by engaging in the role plays, all of the children did participate actively in many different sessions throughout the course of the program.

Generally, teachers felt that the sessions were useful to the children. The notes to the facilitator were rated as sufficiently clear and complete for each session in all cases and often approached the highest rating of “very clear
and complete.” The sessions were generally conducted as planned. Most changes were related to dealing with time problems in order to ensure that more children had an opportunity to participate in activities. Some teachers divided the sessions into two shorter ones; some prolonged some sessions in order to complete all the exercises. Some teachers also made minor adaptations due to the children’s lack of reading abilities. Also, some problems were identified with some of the activities (and these minor changes were made in subsequent versions of the program). Teachers often used creativity to add material, such as Zippy poems, Zippy gymnastics, making a play about bullying or making the final session into a real feast, inviting guests and having something nice to eat.

Overall, teachers rated the program as effective in reaching its goal. The teachers generally felt that they received enough training in the workshops before the program started. Teachers were generally satisfied with the amount of supervision they received during the program.

7.2. Program effects

Preliminary analyses revealed no significant gender differences, so gender was not included in the analyses presented below.

7.2.1. Social skills

Table 3 shows the means and standard deviations of pre and post-test scores on all measures by country, and group (experimental/control). Due to the low internal consistency reliability of the SSQSF in Denmark, all analyses using this measure for Denmark were omitted. In Lithuania there were no significant differences between the pre-test scores of the Experimental and Control Groups on any scales of the SSQTF. For this reason, we conducted analyses of the SSQTF and SSQSF separately in Denmark and Lithuania. The main analysis consisted of repeated measures MANOVAs with the within subject factors consisting of the three social skills measures in the SSQTF (Cooperation, Assertiveness and Self-Control) and in Lithuania for the four social skills measures in the SSQSF (Cooperation, Assertiveness, Self-Control and Empathy) and the two observations (pre-test and post-test scores). The between-subject factor was Group (Experimental/Control). Since there were a priori directional hypotheses that the Experimental Group would show greater improvement in comparison with the Control Group, one-tail tests were used. The MANOVA results for Lithuania indicated a significant interaction between Pre-Post and Group ($F(3,400) = 16.63, p < .001, \eta^2_p = .110$), with the direction of the effect indicating greater improvement in the Experimental group compared to the Control Group. Within-subject contrasts indicated that there were significant pre-post by group effects for Assertion ($F(1,402) = 31.25, p < .001, \eta^2_p = .072$), Self-Control ($F(1,402) = 27.92, d.f., p < .001, \eta^2_p = .065$) and in Cooperation ($F(1,402) = 2.72, p = .05, \eta^2_p = .002$), with the Experimental Group improving more than the Control Group. MANOVA analysis of the SSQSF in Lithuania indicated a significant interaction between Pre-Post and Group ($F(4,381) = 2.04, p < .05, \eta^2_p = .021$), with univariate contrasts indicating a significant increase in
<table>
<thead>
<tr>
<th>Variables</th>
<th>Denmark</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental group</td>
<td>Control group</td>
</tr>
<tr>
<td></td>
<td>Pre-test</td>
<td>Post-test</td>
</tr>
<tr>
<td>Teacher social skills scales</td>
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<td></td>
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<tr>
<td>Cooperation</td>
<td>1.64 (.60)</td>
<td>1.78 (.65)</td>
</tr>
<tr>
<td>Assertion</td>
<td>1.23 (.54)</td>
<td>1.32 (.57)</td>
</tr>
<tr>
<td>Self-Control</td>
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<td>1.74 (.69)</td>
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<td>Student social skills scales</td>
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<tr>
<td>Cooperation</td>
<td>2.50 (.23)</td>
<td>2.50 (.25)</td>
</tr>
<tr>
<td>Assertion</td>
<td>2.53 (.25)</td>
<td>2.34 (.25)</td>
</tr>
<tr>
<td>Self-Control</td>
<td>2.16 (.26)</td>
<td>2.16 (.28)</td>
</tr>
<tr>
<td>Empathy</td>
<td>2.47 (.28)</td>
<td>2.58 (.25)</td>
</tr>
<tr>
<td>Teacher problem behavior scales</td>
<td></td>
<td></td>
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<tr>
<td>Externalizing</td>
<td>.28 (.38)</td>
<td>.29 (.37)</td>
</tr>
<tr>
<td>Internalizing</td>
<td>.33 (.36)</td>
<td>.37 (.38)</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>.49 (.45)</td>
<td>.52 (.45)</td>
</tr>
<tr>
<td>Teacher coping observations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers of strategies</td>
<td>2.07 (2.2)</td>
<td>2.72 (2.73)</td>
</tr>
<tr>
<td>Schoolagers coping strategies inventory</td>
<td>Number of strategies × helpfulness</td>
<td>70.32 (31.63)</td>
</tr>
</tbody>
</table>

* p < .05, one-tailed.
** p < .01.
*** p < .001.
Self-control in the Experimental Group, compared to the Control Group ($F(1,384)=4.23, p=.02, \eta^2_p = .011$) and a significant increase in empathy ($F(1,384)=3.26, p=.036, \eta^2_p = .003$). MANOVA analysis of the SSQTF indicated a significant Pre-Post by Group interaction ($F(3,368)=10.69, p<.001, \eta^2_p = .080$). However, univariate comparisons indicated a significant improvement of the Experimental Group, compared to the Control group only on the Self-control scale ($F(1,370)=23.50, p<.001, \eta^2_p = .060$). Because of pre-test differences between the Experimental and Control Groups in SSQTF scores in Denmark, MANCOVA with the covariant of initial scores was conducted. MANCOVA results confirmed a significant interaction between Pre-Post and Group ($F(3,365)=14.81, p<.001, \eta^2_p = .108$) and the significant univariate effect only for Self-control ($F(1,367)=19.93, p<.001, \eta^2_p = .052$).

7.2.2. Behavior problems

Behavior problems were only rated in Teacher Observations and these observations were not conducted in the prior pilot testing, thus we have no Control Group on behavior problems from Denmark. A repeated measures (pre-post) MANOVA analysis on the three behavior problems scales (Externalizing, Internalizing and Hyperactivity) with the between subject variables of Group (Experimental/Control) and country indicated a significant Pre-Post by Group interaction ($F=10.40$, d.f. = 3, 691, $p<.001, \eta^2_p = .043$). Within subject linear contrasts indicated significant improvements in Externalizing (Pre-Post by Group interaction $F=26.68$, d.f. = 1,693, $p<.001, \eta^2_p = .037$) and Hyperactivity (Pre-Post by Group interaction $F=22.32$, d.f. = 1,693, $p<.001, \eta^2_p = .031$) but there were no significant effects for Internalizing. When these analyses are repeated with only data from Lithuania included, the findings are the same; there is a significant interaction between Pre-Post and Group ($F(3,400)=11.25, p<.001, \eta^2_p = .078$) and significant univariate effects for Externalizing ($F(1,402)=29.12, p<.001, \eta^2_p = .068$) and Hyperactivity ($F(1,400)=24.68, p<.001, \eta^2_p = .058$).

7.2.3. Coping

The main objective of the program is to improve coping skills in children and the previous version of this program was completely revised because the last evaluation determined that it failed to increase coping behaviors, despite significant improvements in social skills. Due to their importance in validating the achievement of program goals, and indications of coping strategies were also obtained from the children’s interviews using the Schoolagers Coping Strategies Inventory. The score of how often the strategy was used multiplied by how helpful the strategy had been to verify that the pre-test and post-test situations were fairly comparable. In Lithuania, the most common situation was a conflict situation, either with another child (67.2% in Experimental Pre-Test; 68.2% in Experimental Post-Test; 49.5% in Control Pre-Test; 56.1% in Control Post-Test) or with a teacher (6.4% in Experimental Pre-Test; 1.9% in Experimental Post-Test; 49.5% in Control Pre-Test; 56.1% in Control Post-Test) or with a teacher (6.4% in Experimental Pre-Test; 1.9% in Experimental Post-Test; 49.5% in Control Pre-Test; 56.1% in Control Post-Test).

We examined the types of problems observed by the teachers in order to better understand the importance of these findings and to verify that the pre-test and post-test situations were fairly comparable. In Lithuania, the most common situation was a conflict situation, either with another child (67.2% in Experimental Pre-Test; 68.2% in Experimental Post-Test; 49.5% in Control Pre-Test; 56.1% in Control Post-Test) or with a teacher (6.4% in Experimental Pre-Test; 1.9% in Experimental Post-Test; 49.5% in Control Pre-Test; 56.1% in Control Post-Test). There were also a small number of conflicts with parents (2.1% Experimental Pre-Test; 4.2% Experimental Post-Test; 5.1% Control Pre-Test; 3.3% Control Post-Test). Less than 1–2% of problems involved a separation or feeling lonely, and in the remainder of the situations the child was sad, worried or unable to do something he or she wanted. There were no significant differences between Pre-Test and Post-Test situation categories, or between Experimental and Control Groups.
post scores, with between subject factors of Country and Group (Experimental/Control) in the significant interaction between Pre-Post and Group ($F(1,774) = 14.43, p < .01, \eta^2_p = .023$).

7.2.4. Did children in all classes benefit from the program?

One may ask if children in all of the classes benefited from the program or if the program effects were the result of improvements in only some of the classes. In order to answer this question, we examined the direction and extent of changes for the 17 classes in Denmark and the 16 classes in Lithuania. We also performed new multivariate analyses in which we included the variable of classroom, but found no significant classroom effects or interactions between classroom and the other factors. When the performance of each individual class was examined, we found that all the classes but one in Denmark and one in Lithuania showed significant improvements in at least one measure of coping and several other variables. None of the classes had significant decreases in any of the target variables. However, there was some variability in the extent of improvements in different classes. One would expect some variation in results, due to differences in teacher abilities and motivation. However, because of the small number of children in each class the power of the statistical tests is limited.

One cannot jump to conclusions based upon one or two classes because there was great variability between classes. Also, even in the two classes where there was no significant overall increase in coping, some of the children were observed to have greater coping skills at the end. Purely on an exploratory basis, we examined the interview transcriptions for the teachers of the class in Lithuania and the class in Denmark where significant overall improvement in coping was not observed. The Danish teacher said that this was her first teaching experience with young children. She felt that the material was too difficult for the children. She also reported that, since the session was always held at the end of the school day, the children were “too tired” and “could not concentrate.” In the Lithuanian class, the teacher often did the activities in front of the class, rather than having the children do them, because she felt the children would not be able to do the exercises. This suggests that in these two classes the program may not have been implemented as intended.

8. Discussion and conclusions

*Zippy’s Friends* can be easily implemented by teachers with minimal support and both teachers and students have a high level of appreciation of its activities. The results of this evaluation indicate that *Zippy’s Friends* has the significant short-term effects of improving children’s abilities to cope with everyday adversities, increasing some social skills and empathy, and decreasing behavior problems. Following Cohen’s (1988) guidelines for interpreting estimates of effect sizes using Eta squared ($\eta^2$), our results indicate a “medium” overall effect size for Social Skills in Lithuania and Denmark based upon teacher observation data and a “small” effect size based upon data from interviews with the children. Improvements in coping based upon teacher observations indicate a “medium” effect size in Lithuania and a “small” effect size in Denmark and there was a “small” effect size in both countries based upon interview data with children. It may be that the smaller effect size observed in data based upon interviews in which children are asked about how they behaved, when compared to observational ratings of children’s behaviors simply indicates that children’s self-reports are not as reliable as standardized ratings by adults. This may also explain the lack of internal reliability of the social skills rating scales in Denmark.

These findings were obtained in two different grades (kindergarten and first grade) and in two different cultures, in Denmark and Lithuania. Furthermore, the “hard” data are confirmed by teacher reactions to the program: there is a general consensus from qualitative reports that this program has improved how children relate to other children and teachers, as well as how they cope with problems in their daily lives. Moreover, teachers felt that the program has improved the general social climate of the school classes. In some instances, the teachers themselves felt that they had learned how to better cope with their own problems.

The ultimate goal of *Zippy’s friends* is to improve children’s ability to cope with a wide range of everyday adversities. Although this is the first study that documents improvements in coping abilities, other studies have found significant improvements in closely related phenomena, including increases in children’s abilities to generate alternative solutions to hypothetical interpersonal problems (Shure & Spivack, 1980, 1982), effective conflict resolutions skills (Kaschê & Greenberg, 1994) and finding solutions to interpersonal problems (Vaughn et al., 1984).

Improved social skills are also documented in several previous studies. Studies have shown improvement in various aspect of social skills, including improved peer skills (Denham & Burton, 1996), adaptive skills (Walker et al., 1998),
resiliency related skills (Dubas et al., 1998) and better self-control, understanding and recognition of emotions and effective conflict resolution strategies (Kusché & Greenberg, 1994).

An interesting positive side effect for the children participating in the Zippy’s friends programme was the decrease in behavior problems (hyperactivity and externalisation). Many programmes, with varying target groups, content and intervention strategies show similar results (Denham & Burton, 1996; Dubas et al., 1998; Forness et al., 1998; Grossman et al., 1997; Kusché & Greenberg, 1994; Shure & Spivack, 1980; Walker et al., 1998; Webster-Stratton et al., 2001).

Although standardized instruments were used to assess the effects of the program, the research design may be criticized for using teachers who were involved in the program to undertake observations. Unfortunately, budget constraints precluded hiring totally unbiased outside observers to watch children and report on their behaviors, since such observers would have to spend a considerable amount of time in each classroom in order to observe problematic situations when they arise and then assess coping responses by each of the children. Also, it is important to note that changes were observed in target variables that are related to the program objectives and not in one of the other variables that should not have been affected by the program, Internalizing. Moreover, several of the teacher observations were confirmed by data obtained from independent interviewers who were not informed of the goals of the study and in Lithuania were unaware of the children’s participation a program. In addition, the stories the teachers reported in their narrative reports about changes in how children handled problem situations support the quantitative data.

It is a limitation of the study that the students were not assigned randomly to the control and experimental classes. This was not possible for practical reasons. However, we were able to generally match the control and experimental classes on central variables such as age, gender and social class. There was no difference in the amount of teaching experience between the teachers in the control groups and the intervention groups. In retrospect, we conclude that it was not a wise decision to use a previous control group in Denmark rather than to recruit and assess a new control group as part of this study. There were significant differences in Denmark between the experimental and control groups in the social skills measures at the pre-test. It is unfortunate that financial limitations made the researchers have to choose between having a larger experimental group and cutting the sample in half and including a new control group. Since one of the major goals was to evaluate the implementation of this new program, we decided to invest the available funds in having as large an experimental group as we could afford. Since children in the same classroom are not independent, it would be of interest in future research to use classroom rather than child as the unit of analyses. This was not feasible here due to the relatively small number of classrooms, which would reduce the power of the analyses.

A strength of this study is its detailed evaluation of the programme implementation in combination with effects assessment, based upon both teachers’ reports and individual interviews with each of the children conducted by outside interviewers. Several new hypotheses for future investigations were suggested by the qualitative data. Does this program improve the social climate in classrooms? Does it improve teaching skills and way teachers relate to young children? Is there an effect on academic performance of the children?

The findings in this report are promising. However, there is a need to replicate the findings with randomized control trials and using measures based upon independent observations of behavior by “blind” observers, rather than teachers, who may be biased due to their familiarity with the students and their participation in the program being evaluated. This is an extremely costly procedure, but important in determining the effectiveness of school interventions. It is also important to bear in mind that the goal of the program is to not only influence children’s behavior in the short term, but also throughout their lives. It is hoped that the abilities to cope and the improvements in social skills that are fostered by this program will continue, and that this program will result in longer-term improvements. Therefore, it is important to assess whether or not children who acquire better coping and social skills maintain those acquisitions over time, in comparison to children who did not participate in the program. Long-term follow-up may determine whether improved coping skills are maintained and whether or not children who use these skills actually do avoid more serious problems later in life.

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References


