

Postprint Version	1.0
Journal website	http://www.sciencedirect.com/science/article/pii/S2212657016300277
Pubmed link	
DOI	10.1016/j.mhp.2017.03.003

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FRIENDS for Life: Implementation of an indicated prevention program targeting childhood anxiety and depression in a naturalistic setting ☆

MIA P. KÖSTERS^A, , MAI J.M. CHINAPAW^B, , MARIEKE ZWAANSWIJK^C, I, , MARCEL F. VAN DER WAL^A, , ELISABETH M.W.J. UTENS^{D, E}, , HANS M. KOOT^{F, G},

^a Department of Epidemiology, Health Promotion & Care Innovation, Public Health Service of Amsterdam, P.O. Box 2200, 1000 CE, Amsterdam, the Netherlands

^b EMGO Institute for Health and Care Research, Department of Public and Occupational Health, VU University Medical Centre, Van der Boechorststraat 7, 1081 BT, Amsterdam, the Netherlands

^c NIVEL, Netherlands Institute for Health Services Research, P.O. Box 1568, 3500 BN Utrecht, the Netherlands

^d Department of Child and Adolescent Psychiatry/Psychology, Erasmus Medical Centre-Sophia Children's Hospital, P.O. Box 2060 (Kp-2), 3000 CB, Rotterdam, the Netherlands

^e Research Institute of Child Development and Education, University of Amsterdam, P.O. Box 15780, 1001 NG Amsterdam, the Netherlands / De Bascule

^f Department of Developmental Psychology, Faculty of Psychology and Education, VU University, Van der Boechorststraat 1, 1081 BT Amsterdam, the Netherlands

^g EMGO Institute for Health and Care Research, VU University Medical Centre, Van der Boechorststraat 7, 1081 BT Amsterdam, the Netherlands

ABSTRACT

We assessed the implementation characteristics and children's appraisal of FRIENDS for Life, a school-based prevention program targeting childhood anxiety and depression, and its relation to program outcomes. Prevention workers delivered the program using specific therapeutic skills, but did not adhere completely to the protocol. However, this appeared not to negatively affect program outcomes. We found few other significant associations between program integrity and outcomes. Children's participation was good and they appraised the program positively. Children rated the program more positively when protocol adherence was lower. In conclusion, a highly protocolled intervention can be successfully transferred to daily school practice.

1. INTRODUCTION

Anxiety and depression are common mental health problems in children (Beesdo, Knappe, & Pine, 2009). Symptoms of anxiety and depression in children and adolescents are associated with poor school performance, substance use and abuse, and suicidal behavior (Birmaher et al., 2002 ; Woodward and Fergusson, 2001). Moreover, children with untreated anxiety and depressive symptoms are at elevated

risk for anxiety disorders and recurrent and more severe depressive episodes in later life (Beesdo et al., 2007; Birmaher et al., 2002 ; Fergusson and Woodward, 2002). Consequently, prevention of childhood anxiety and depression is important. FRIENDS for Life is a program aimed at preventing anxiety and depression in children (Barrett, 2004a ; Barrett, 2004b). Although the majority of FRIENDS for Life studies reported positive effects on anxiety or depression symptoms (Essau et al., 2012; Barrett and Turner, 2001 ; Bernstein et al., 2005), much less is known about the implementation of FRIENDS for Life and the possible impact of implementation quality (program integrity) on the program's effectiveness. The way in which a program is implemented may influence its effectiveness in positive or negative ways (Dane and Schneider, 1998 ; Durlak and DuPre, 2008). Although the protocols of interventions – including FRIENDS for Life – generally thoroughly describe how the program should be implemented, deviations from protocols regularly occur when a program is executed outside the research setting. It is therefore important to evaluate the extent to which program outcomes may be affected by program integrity.

Several studies investigating FRIENDS for Life as a prevention program addressed program integrity. Most studies assessed adherence to protocol, and no study reported poor program integrity (e.g., Barrett, Lock, & Farrell, 2005; Essau et al., 2012; Rodgers & Dunsmuir, 2013). However, no study investigated the association between program integrity and effectiveness of FRIENDS for Life in an existing preventive setting. Furthermore, previous studies have several limitations that make it difficult to draw firm conclusions on program integrity and its influence on program outcomes.

First, some studies used implementer-reported data about adherence to protocol (e.g., Barrett, 2001; Barrett et al., 2005; Essau et al., 2012). This kind of report may be prone to socially desirable answers (Dane & Schneider, 1998). Second, not all studies quantified their results, but reported for instance that program integrity was high, or that no deviations from the protocol were noted (Dadds et al., 1997; Barrett et al., 2000 ; Lowry-Webster et al., 2003). However, quantification is needed to test the association between program integrity and program outcomes. Third, the majority of studies of FRIENDS for Life reported only one or two aspects of program integrity, mainly adherence to protocol (Miller et al., 2011 ; Barrett and Turner, 2001). In literature, it is recommended to investigate multiple aspects of program integrity (Durlak and DuPre, 2008 ; Dane and Schneider, 1998). For example, a program may be implemented completely according to protocol, but if participants were absent during numerous sessions, program integrity is still not optimal. Fourth, up till now, the implementation of FRIENDS for Life has been studied only in research-controlled settings, i.e., with extra training and evaluation for implementers (e.g., Barrett et al., 2005; Essau et al., 2012; Miller et al., 2011). Findings from these studies are not generalizable to implementation in naturalistic settings.

An additional aspect that may affect the implementation and effectiveness of a prevention program is participants' appraisal of the program, also referred to as social validity. Even if an effective program is implemented with high program integrity, participants are likely to withdraw from the intervention if they do not like it. In the longer term, this may hamper the sustainability and dissemination of the program. Previous studies showed that children and parents positively evaluated

FRIENDS for Life (Barrett et al., 2001; Cooley et al., 2004 ; Lowry-Webster et al., 2003). However, previous findings regarding the association between social validity and a reduction of symptoms of anxiety or depression are not univocal (Barrett et al., 2000; Essau et al., 2004 ; Gallegos-Guajardo et al., 2013).

The present study aims to address the above-mentioned gaps in the literature with a comprehensive process evaluation of FRIENDS for Life as an indicated preventive school-based intervention for children with elevated levels of anxiety or depression symptoms but not a clinical disorder. FRIENDS for Life has been implemented in Amsterdam, the Netherlands, as part of an existing prevention strategy since 2007. We included all FRIENDS for Life groups in two consecutive school years in a quasi-experimental trial, and asked the prevention workers to implement the program as they were used to doing it (Kösters, Chinapaw, Zwaanswijk, Van der Wal, Utens, & Koot, 2012). Prevention workers received no specific or additional training or supervision during the trial. In this way, we were able to study implementation and outcomes under naturalistic conditions. Results of the concurrent trial show that children who participated in FRIENDS for Life self-reported a strong reduction in anxiety and depression symptoms in comparison to controls, towards levels comparable to children from the general population at 12 months post-intervention (Kösters, Chinapaw, Zwaanswijk, Van der Wal, & Koot, 2015).

In the present study, we examined four aspects of program integrity using live observations: (a) adherence to protocol; (b) quality of delivery; (c) participant responsiveness (children's participation in the sessions); and (d) exposure to the program (Dane and Schneider, 1998 ; Dusenbury et al., 2003). In addition, children's appraisal of the program was assessed, as well as the association of each of these aspects with program outcomes. We aimed to address the following questions:

1. Was FRIENDS for Life, a highly protocolled prevention program, delivered with program integrity when implemented in a naturalistic setting*
2. Were there any differences between specific subgroups (regarding sex, age, ethnicity, and severity of initial symptoms) of children regarding program integrity and appraisal*
3. How did participating children appraise FRIENDS for Life when implemented in a naturalistic setting*
4. Are implementation characteristics and children's appraisal of the program in a naturalistic setting associated with program outcomes*

2. METHODS

2.1. Procedures and participants

This process evaluation is part of a larger quasi-experimental trial evaluating the effects of FRIENDS for Life, in which the intervention group received the FRIENDS for Life program, while the control group received no intervention (Kösters, Chinapaw, Zwaanswijk, Van der Wal, Utens, & Koot, 2012). In the present study, only data from the intervention groups were used. FRIENDS for Life was implemented in grades 6, 7 and 8 of elementary schools (comparable with grades 4, 5 and 6 in US schools) in Amsterdam, the Netherlands. During the school years 2010–2011 and 2011–2012, 35 FRIENDS for Life intervention groups were initiated at 23 elementary schools in Amsterdam. Per school, up to 11 children with the highest anxiety and depression scores (as measured by the Revised Child Anxiety and Depression Scale (RCADS), see Measures) and/or those indicated by the school

teacher (e.g., for being shy or withdrawn, (socially) anxious, inhibited, or being bullied) were eligible for participation. The school and the prevention workers composed a group that was balanced regarding age and sex. Finally, the school, prevention workers, parents and each child together decided on participation (Kösters, Chinapaw, Zwaanswijk, Van der Wal, Utens, & Koot, 2012). Children and parents received information about the study and gave written permission if they wished to participate in the study. The (VU University) Medical Ethics Committee, the Netherlands, approved the study protocol.

The intervention group consisted of 339 children, six of whom did not start the program (main reason: second thoughts about participation) and five were excluded from FRIENDS by the prevention workers because of disruptive behavior.

Participating children were 8–13 years old ($M=10.6$, $SD=0.9$), and 62% were girls. Children were of Dutch (20%), Turkish (12%), Moroccan (22%), Surinamese/Antillean (16%), other Western (8%), other non-Western (20%), and unknown (3%) descent.

2.2. Intervention

FRIENDS for Life is based on cognitive behavior therapy (CBT) (Barrett, 2004a ; Barrett, 2004b). Children learn how to cope with anxiety and depression by learning several skills and strategies. The program consists of 10 sessions, two booster sessions (one and three months after finishing the program), and two parent sessions.

In Amsterdam, the Netherlands, the Dutch translation of FRIENDS for Life was implemented (Utens and Ferdinand, 2006aa ; Utens and Ferdinand, 2006bb). Each group was led by two prevention workers (out of a pool of 21) from a local mental health organization. The 10 child sessions lasted 1.5 h each and were conducted once a week during the school day. The implementation of booster and parent sessions deviated from the original protocol: as prevention workers noticed time constraints of schools and low attendance of parents, the implementation of only one booster session (one month after the program) and one parent session (halfway through the program) has become common practice in Amsterdam over the years. The program started two times a year, after the summer break and after the Christmas break.

2.3. Measures

At the screening assessment (T1), children filled out a questionnaire on anxiety and depression symptoms and on socio-demographic information. At the end of the last (10th) FRIENDS for Life session (T2), children again filled out the anxiety and depression questionnaire and were asked to appraise the program.

2.3.1. Program integrity

Adherence to protocol, quality of delivery, and participant responsiveness were assessed by live observations. The first author, two trained Master's level students and a trained research assistant conducted the observations. The first two to three sessions were observed by two observers (the first author and a student or assistant) to ensure that observations and scoring were done in a similar way. Differences were discussed and pilot observations were conducted until agreement was reached. These pilot observations were excluded from the present analyses. During the study period, a number of randomly selected sessions were again observed by two observers, to prevent coder drifting and to ensure that scoring continued in a similar way. The

observations were not announced to the prevention workers. In total, 74 sessions (19% of the total number) were observed in 26 different FRIENDS for Life groups (2–5 observations per group), of which 14 sessions were observed by two persons. Protocol adherence, quality of delivery, and participant responsiveness data were available for 247 children, as we observed from the start of 2011 due to logistic reasons. Exposure data were available for nearly all groups.

2.3.1.1. Protocol adherence

Protocol adherence was assessed by the Program Integrity Checklist, which was specifically designed for FRIENDS for Life (Barrett, 1999). During the session, we scored to what extent every component of the FRIENDS for Life manual was executed on a 4-point Likert scale (extremely well (3); moderately well (2); not very well (1); not at all (0)). Every session's checklist consisted of four to seven items, corresponding with the items in the program's manual and children's workbook. The manual describes the goal of each item extensively (for example: Session 5, item 4: Challenging unhelpful thoughts. The goal of this exercise is to show the children how to recognize a negative thought and how to replace it with a helpful thought). The inter-rater ICC's agreement for adherence to protocol were excellent (ranging from 0.81 to 0.90).² We calculated a mean protocol adherence score per observed FRIENDS for Life group.

2.3.1.2. Quality of delivery

Quality of delivery was assessed by scoring therapeutic skills with the Group Leader Integrity Checklist, also designed specifically for FRIENDS for Life, on a 4-point Likert scale (extremely well (3) - not at all (0)) (Barrett, 1999). The therapeutic skills included in the checklist were: positive reinforcement, specific feedback, self-disclosure, empathy, paraphrasing, summarization, and reflection. The scores of the two prevention workers were combined in one mean score per skill per session. The inter-rater ICCs for quality of delivery were good to excellent (ranging from 0.65 to 0.91). We calculated a mean quality of delivery score per observed FRIENDS for Life group.

2.3.1.3. Participant responsiveness

To assess participant responsiveness, we added the following item to the observation checklist: *Does the child pay attention to the prevention workers and other children, and does he/she actively participate in the program** The item was scored on a 4-point Likert scale (extremely well (3) - not at all (0)). The inter-rater ICCs for participant responsiveness were good (ranging from 0.61 to 0.68). We calculated a mean participant responsiveness score per observed child.

2.3.1.4. Exposure

Exposure to the program was registered by the prevention workers. They logged the attendance of the children during program sessions and of parents during the parent sessions. In addition, they registered whether participating children had done their homework assignments. Unfortunately, it turned out that attendance at the booster sessions, parents' attendance and homework were not well registered and could therefore not be analyzed. Exposure was calculated as the number of regular sessions at which the child was present.

2.3.2. Children's appraisal of the program

Three items were presented to the children at T2. They rated on a 5-point Likert scale how useful (very little=0 to very much=4) and enjoyable (very boring=0 to a lot of fun=4) they considered the program. In addition, children were asked whether they would recommend the program to other children (yes/no). Answers were available for 229 of the 339 children since these questions were added during the study. These 229 children did not differ from the total sample regarding gender, ethnicity, and T1 and T2 scores, but were slightly older ($M=10.7$ versus $M=10.5$, t -test $p=0.04$).

2.3.3. Program outcomes

Children completed the self-report Revised Child Anxiety and Depression Scale (RCADS; Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000) at T1 and T2. This questionnaire consists of an anxiety scale (37 items) and a major depression scale (10 items). Children indicate how often each item applies to them on a 4-point Likert scale (never (0); sometimes (1); often (2); always (3)). In the present trial, Cronbach's alphas were 0.95 at T1 and T2 for anxiety, and 0.78 at T1 and 0.83 at T2 for depression.

2.3.4. Socio-demographic information

Children were asked to fill in their date of birth, and their own and their parents' country of birth. Ethnicity was based on the parents' country of birth (Statistics Netherlands, 2000).

2.4. Data analyses

ICCs, t -tests, and descriptive statistics were calculated using SPSS (IBM, version 21) and multilevel procedures were employed using MLwiN (Centre for Multilevel Modelling, University of Bristol, United Kingdom, version 2.27).

Program integrity measures and child appraisal were analyzed as continuous variables (except for the question whether the child would recommend the program to others), as this has more statistical power and no standard cut-off values exist for low or high implementation (Durlak and DuPre, 2008 ; Dane and Schneider, 1998). For the RCADS anxiety and depression scale, one missing item per scale was allowed, and was replaced with the item median of the total sample. No imputation procedures were conducted for all other variables, as multilevel linear regression procedures perform better without imputation (Twisk, 2003). There were no missing hierarchical variables (class and school). MLwiN uses a maximum likelihood estimation procedure. Analyses were conducted according to the intention-to-treat principle.

Firstly, associations between child characteristics and participant responsiveness, exposure and children's appraisal of the program were examined using multilevel linear or logistic regression procedures with a 3-level structure: (a) individual; (b) class; and (c) school, as children were nested within classes and classes were nested within schools.

Secondly, to investigate differences between specific subgroups of children and outcomes, characteristics were dichotomized: sex (boy=0, girl=1), age (8–10 year-olds versus 11–13 year-olds), ethnicity (Dutch versus non-Dutch), and severity of symptoms was dichotomized into (quartiles 1–3 versus 4) of the RCADS anxiety and depression scales. The quartiles of severity of initial symptoms were based on the

RCADS scores of children included in the intervention and control group ($n=496$) (Kösters, Chinapaw, Zwaanswijk, Van der Wal, & Koot, 2015).

Thirdly, associations between program integrity and program outcomes, and associations between children's appraisal and RCADS change scores (T2-T1) were examined, using multilevel linear or logistic regression procedures (3-level structure).

Fourthly, associations between program integrity and children's appraisal of the program were examined using multilevel linear regression procedures (3-level structure), adding adherence to protocol, quality of delivery, participant responsiveness, and exposure as independent variables to the model one by one.

3. RESULTS

3.1. Program integrity

Table 1 reports means and standard deviations of adherence to protocol, quality of delivery, participant responsiveness, and exposure. Prevention workers adhered mainly but not completely to the protocol, and their quality of delivery varied considerably per skill (e.g., positive reinforcement $M=2.87$, $SD=0.25$ and summarization $M=0.38$, $SD=0.69$). Children showed a high degree of responsiveness to the program and were present during most sessions.

[TABLE 1]

3.1.1. Subgroups

Girls, $B=0.16$, 95% CI [0.06, 0.25], and children with higher initial levels of anxiety symptoms, $B=0.13$, 95% CI [0.02, 0.25] showed a higher degree of responsiveness in the sessions. Age and ethnicity were not related with participant responsiveness. No child characteristics were associated with children's exposure to the program.

3.2. Children's appraisal of FRIENDS for Life

Table 1 reports children's appraisal of the program. Children found the program useful and enjoyable, and 91% of the children would recommend the program to other children. Specific subgroups of children evaluated the usefulness of FRIENDS for Life differently. Boys found the program more useful than girls, $B=0.29$, 95% CI [0.07, 0.51], older children found it more useful than younger ones, $B=0.22$, 95% CI [0.01, 0.43], and non-Dutch children found it more useful than their Dutch peers $B=0.40$, 95% CI [0.15, 0.65]. For enjoyableness and the willingness to recommend the program to other children, we found no differences between specific subgroups of children.

3.3. Program integrity and children's appraisal in relation to program outcomes

Data to investigate the association between implementation characteristics and program outcomes were available for 223–303 children (Table 2). We found few significant associations between program integrity and self-reported anxiety and depressive symptoms (Table 2). Only higher levels of prevention workers' specific feedback were associated with a decrease in self-reported depression. Children who evaluated the program as more useful reported a stronger decrease in anxiety symptoms. No other significant associations were found between children's appraisal and self-reported symptoms.

[TABLE 2]

3.4. Program integrity in relation to children's appraisal

Lastly, we investigated whether program integrity was associated with children's appraisal of the program. Data were available for 228 (usefulness and recommendation) or 229 (enjoyableness) children. Adherence to protocol was negatively related to children's appraisal. The lower the overall adherence to protocol, the more positively children appraised program usefulness, $B=-0.40$, 95% CI $[-0.65, -0.15]$ and enjoyableness, $B=-0.36$, 95% CI $[-0.64, -0.07]$, and the more children were inclined to recommend the program to other children, $B=0.15$, 95% CI $[0.02, 0.91]$. Quality of delivery, participant responsiveness and exposure were not significantly associated with children's appraisal of FRIENDS for Life.

4. DISCUSSION AND CONCLUSION

4.1. Discussion

The present study investigated whether FRIENDS for Life, an indicated prevention program for childhood anxiety and depression, was delivered with program integrity when implemented in a naturalistic setting. Subsequently, we investigated whether program integrity differed for specific subgroups of children (regarding sex, age, ethnicity, and severity of initial symptoms). In addition, we investigated children's appraisal of the program. Lastly, we investigated whether implementation characteristics and children's appraisal were associated with program outcomes. We found that the prevention workers adhered to the protocol but did not execute the program exactly as prescribed. Compared to the majority of previous results on adherence of the FRIENDS for Life protocol (e.g., Barrett, Sonderegger, & Xenos, 2003; Rodgers & Dunsmuir, 2013; Barrett et al., 2001), it seems that we found lower adherence to protocol. This may be explained by the fact that in the present study FRIENDS for Life had been implemented for several years and was not investigated as part of a carefully controlled study (in contrast to e.g., Barrett et al., 2005; Essau et al., 2012; Miller et al., 2011), but as part of an existing prevention strategy. Before and during our study, we asked prevention workers to implement the program as they had been doing for years. Our study therefore reflects a realistic degree of adherence in daily school practice, where – most likely – no extra time or money is available for training before the program and evaluation during it.

When it came to quality of delivery, prevention workers seemed to focus on a positive group atmosphere. They delivered the program with positive reinforcement, specific feedback and empathy. The quality of other skills was considerably lower. We observed a high level of participant responsiveness. The selection procedure may have contributed to this, as children's motivation was checked before inclusion in the program (Kösters, Chinapaw, Zwaanswijk, Van der Wal, Utens, & Koot, 2012). Positively, children with higher initial levels of anxiety – and who were therefore most in need of the intervention – showed a higher degree of responsiveness. The exposure of the program to children was good, as they attended most of the sessions. This is most likely a positive consequence of the implementation during school time: attendance was not hampered by extracurricular activities and it did not demand time and effort on the part of parents to bring the children to the sessions. Unfortunately, this did not apply to the parent sessions. Parental attendance was not

well registered, but prevention workers indicated that their attendance was poor, a problem often reported in prevention research (Neil & Christensen, 2009).

Children appraised FRIENDS for Life very positively: they found it useful and enjoyable, and almost all children indicated that they would recommend the program to other children, which is comparable with other FRIENDS for Life studies (Barrett et al., 2001; Gallegos-Guajardo et al., 2013 ; Stallard et al., 2005).

In contrast to reviews reporting that higher program integrity is related to more favorable outcomes (Dane and Schneider, 1998 ; Durlak and DuPre, 2008), we hardly found any significant relations between program integrity and program outcomes at post-intervention. Only one aspect of quality of delivery was significantly associated with outcomes at post-intervention: specific feedback was associated with a decrease in self-reported depression symptoms. However, this result should be interpreted with caution, as some skills were performed at such a low rate that it was more likely that we measured the frequency rather than the quality of these skills. Although the checklist used to assess quality of delivery was designed specifically for FRIENDS for Life (Barrett, 1999), some skills seem to be more appropriate in treatment sessions for individual children rather than preventive group sessions; for example the less frequently observed skills, paraphrasing, summarization, and reflection, are interviewing and counseling skills (Ivey & Ivey, 1994).

A possible explanation for not finding other significant relations could be that adherence to protocol, participant responsiveness, and exposure scores did not vary much across sessions and children. We did not observe any prevention workers who abandoned the manual completely, most children participated very well, and hardly any children missed more than one session. Low variability in integrity measures makes it difficult to find significant relations between implementation and outcomes, which is a common problem in child anxiety program research (Chu et al., 2004 ; Liber et al., 2010).

The relation between the exposure to homework and outcomes could not be investigated as the registration of homework was incomplete. Homework is an important part of FRIENDS for Life. Checking the previous session's homework was a standard exercise in the prevention workers' manual and the children's workbook contained a homework reward card. We observed that prevention workers were very strict regarding homework, which was one of the few things some children did not like about them (Zwaanswijk & Kösters, 2015). The prominent role of homework in FRIENDS for Life is interesting, as, up till now, homework has been found to be one of the few program characteristics that is associated with better outcomes in depression prevention (Sandler et al., 2014). Although we may assume that the children must have been exposed to homework, we do not know to what extent, nor could we test the potential association with program outcomes.

Even though we found that prevention workers did not adhere completely to the protocol in the present study, this does not seem to affect program outcomes negatively: in the current trial, intervention group children with elevated anxiety and depression scores reported scores comparable to the general population's levels at 12 months post-intervention and reported significantly lower scores than the no-intervention control group (Kösters, Chinapaw, Zwaanswijk, Van der Wal, & Koot, 2015). Presumably, the prevention workers chose to attune the program messages to the groups' needs. Because of prevention workers' experience in this particular

setting, they may have delivered the program message without adhering completely. This seemed to have a positive effect on children's appraisal, as children appraised the program more positively when the adherence to protocol was lower. This corresponds with what we noticed during the observations. For example, changing a reading exercise into a role play was very much welcomed by the children. However, changing an exercise did not necessarily mean that the goal of the exercise could not be met completely. The adherence score in the present study must then imply that some exercises may not have been implemented completely. We did not register the reasons for incomplete adherence during the observations. It may have varied from running out of time to finding exercises redundant. Especially the latter reason, spending less time on a redundant exercise to prevent children getting bored, may have contributed to a higher appraisal. This is in line with one of the few negative comments of children about the program in the current study, which was that some topics were repeated too often (Zwaanswijk & Kösters, 2015). It is interesting that although higher adherence to protocol is associated with better program outcomes in earlier studies (Dane and Schneider, 1998 ; Durlak and DuPre, 2008), positive effects of adaptation have been reported as well (Durlak & DuPre, 2008). The ideal balance between adherence and adaptation has yet to be established (Durlak & DuPre, 2008). Therefore, it would be interesting to investigate potential differences in appraisal and outcomes between a condition in which the manual is literally followed and one in which prevention workers adjust the program at some points, as they did in the present setting.

In the present study, we not only came across adaptations such as changing a reading exercise into a role play, but the prevention workers also implemented less booster and parent sessions than the protocol prescribed. In practice, more booster and parent sessions were not feasible for schools and parents. The effectiveness of booster and parent sessions is, however, still unclear (Neil and Christensen, 2009 ; Sandler et al., 2014). Considering previous findings, and given the strong reduction in anxiety and depression symptoms in the current trial with less or no booster and parent sessions (Kösters, Chinapaw, Zwaanswijk, Van der Wal, & Koot, 2015), this may suggest that these sessions are not the most important components of anxiety and depression prevention programs. As the registration of booster and parent sessions was incomplete, we were not able to investigate whether these components had added value to the effectiveness of the program in the present study.

The present study has several strengths. First, we examined the implementation of FRIENDS for Life in a naturalistic setting. This is important, as once a prevention program is disseminated on a larger scale, the implementation will be less controlled than in a research setting. Second, our study is, to our knowledge, the first to assess the relation between program integrity and program outcomes of FRIENDS for Life as a preventive intervention. Contrary to previous studies, we measured four aspects of program integrity simultaneously instead of one or two (Essau et al., 2012; Barrett and Turner, 2001 ; Miller et al., 2011). Third, our study is the first that studied program integrity and children's appraisal extensively for FRIENDS for Life as an indicated prevention program. Fourth, independent observers assessed program integrity, minimizing socially desirable reports (Dane & Schneider, 1998).

The present study also has some limitations. Although live observations provided a rich experience of the sessions, it was not possible to replay the sessions until every detail had been given full attention, as would have been possible if we had recorded

the sessions. During the live observations, up to 11 children and two prevention workers had to be observed simultaneously. Therefore, details may have escaped our attention. In addition, we cannot rule out that our presence during the observations influenced the behavior of the prevention workers or children. Further, we missed observational data and children's appraisal from the groups that started in 2010, and the registration on homework and parent sessions was incomplete. Although we collected a rich dataset from the majority of the groups, we collected less data than we aimed for.

4.2. Conclusion

In the present study, we investigated the implementation of FRIENDS for Life, a protocolled indicated preventive intervention, when executed in a naturalistic setting. We found that trainers applied positive skills, and that children's responsiveness and attendance were good. Although the program was largely but not completely executed according to the protocol, this seemed not to affect program outcomes negatively. Adaptation even seemed to have a positive influence, as children appraised the program more positively when trainers adhered less to the protocol. Future research should address the effects of adaptation on program outcomes. As the potential effects of booster and parent sessions remain unclear, future research could also address the impact of booster and parent sessions further. If these have added value, more effort should be made to implement these sessions, otherwise it may be more cost-effective to execute the program without these sessions.

4.3. Implications for practice

A highly protocolled intervention can be successfully transferred into daily school practice by mental health professionals. Slight adaptation of a protocol by experienced mental health professionals does not necessarily have negative implications for program outcomes.

FUNDING

This study was funded by ZonMw, the Netherlands Organisation for Health Research and Development (number 50-50405-98-142).

ACKNOWLEDGEMENTS

The authors would like to thank Frouke Karel, Lisette Kamps, and Sanne Grolleman, for their contribution to the data collection and Anton Janssen for the data management.

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- ☆ Trial registration number: the Netherlands Trial Register (NTR2397).

TABLES AND FIGURE

Table 1. Means and Standard Deviations of Adherence to Protocol, Quality of Delivery, Participant Responsiveness, and Exposure.

Variable (range)	n	M	SD
Adherence to protocol (0–3)	74 ^a	1.94	0.58
Quality of delivery (0–3)	74 ^a		
- Positive reinforcement		2.87	0.25
- Specific feedback		2.48	0.54
- Self-disclosure		1.40	0.97
- Empathy		2.70	0.40
- Paraphrasing		1.44	0.80
- Summarization		0.38	0.69
- Reflection		1.06	1.00
Participant responsiveness (0–3)	247	2.51	0.43
Exposure (1–10 sessions)	318	9.1	1.3
Appraisal	229		
- Usefulness (0–4)		3.11	0.83
- Enjoyableness (0–4)		3.44	0.70
- Recommend (yes)		91%	
RCADS anxiety T1 (0–111)	332	38.9	23.0
RCADS anxiety T2	323	26.9	20.1
RCADS depression T1 (0–30)	336	8.7	5.2
RCADS depression T2	323	6.3	5.0

Note. M=mean, SD=standard deviation. RCADS=Revised Child Anxiety and Depression Scale. a=number of sessions.

Table 2. Relations Between Program Integrity and Program Outcomes: Results From Multilevel Linear Regression Analyses.

Outcome	Integrity indicator	n	B	95% CI	p
RCADS Anxiety	Adherence to protocol	234	-2.6	[-12.2, 7.0]	0.59
	Quality of delivery				
	– Positive reinforcement	234	6.1	[-19.7, 31.9]	0.64
	– Specific feedback	234	-8.3	[-20.4, 3.8]	0.18
	– Self-disclosure	234	-2.4	[-8.6, 3.7]	0.44
	– Empathy	234	6.5	[-7.5, 20.4]	0.36
	– Paraphrasing	234	-2.6	[-11.8, 6.6]	0.58
	– Summarization	234	-0.3	[-10.0, 9.4]	0.95
	– Reflection	234	0.2	[-4.8, 5.2]	0.94
	Participant responsiveness	234	-1.8	[-9.7, 6.0]	0.64
Exposure	298	-1.6	[-4.8, 1.7]	0.35	
RCADS Depression	Adherence to protocol	239	-1.0	[-2.7, 0.6]	0.22
	Quality of delivery				
	– Positive reinforcement	239	-2.0	[-6.6, 2.5]	0.38
	– Specific feedback	239	-2.5	[-4.5, -0.4]	0.02
	– Self-disclosure	239	-0.0	[-1.1, 1.0]	0.93
	– Empathy	239	-0.4	[-2.8, 2.1]	0.78
	– Paraphrasing	239	-1.3	[-2.9, 0.3]	0.11
	– Summarization	239	-0.4	[-2.0, 1.1]	0.59
	– Reflection	239	-0.2	[-1.1, 0.6]	0.60
	Participant responsiveness	239	-0.4	[-2.0, 1.2]	0.61
Exposure	303	-0.3	[-1.0, 0.3]	0.34	
RCADS Anxiety	Usefulness	221	-4.3	[-8.3, -0.3]	0.04
	Enjoyableness	222	2.7	[-2.4, 7.7]	0.30
	Recommend to other children	221	-3.7	[-15.7, 8.2]	0.54
RCADS Depression	Usefulness	224	-0.2	[-1.0, 0.7]	0.69
	Enjoyableness	225	0.4	[-0.7, 1.4]	0.47
	Recommend to other children	224	-0.8	[-3.2, 1.7]	0.54

Note. RCADS=Revised Child Anxiety and Depression Scale. RCADS anxiety and depression were calculated as change scores (T1-T2).