INTRODUCTION
Anxiety and depression are among the most prevalent psychiatric disorders in children today. The median prevalence of any anxiety disorder in 5- to 17-year-olds is about 8% (ranging from 2% to 33%), and about 5% (ranging from 0% to 13%) for major depressive disorder (Costello, Egger, & Angold, 2005). Moreover, anxiety and depression are globally among the leading causes of illness and disability in youth between 10 and 19 years old (World Health Organization, 2014a; 2014c). Anxiety and depression are closely related disorders, with comorbidity rates up to 73% (Mineka, Watson, & Clark, 1998).

Anxiety and depression not only affect children’s current wellbeing, both are also a risk factor for adverse life outcomes and adult psychopathology. Childhood anxiety and depression increase the risk of poor academic and professional achievement, substance abuse, other mental disorders, more severe recurrent depressive episodes, and suicidal behavior (Beesdo, Knapp, & Pine, 2009; Birmaher, Arbelaez, & Brent, 2002; Fergusson & Woodward, 2002). As the prevalence of both anxiety and depression rises quickly in adolescence, particularly in girls (Beesdo et al., 2009; Birmaher et al., 1996), preventive interventions for pre-adolescents are an important public health priority. Prevention programs provide children the necessary support before problems escalate and require more intensive and expensive specialist services.

Despite the clear rationale for preventive interventions for children with anxiety or depression symptoms, many children in need do not use mental health services (Verhulst & van der Ende, 1997; Zwaanswijk, van der Ende, Verhaak, Bensing, & Verhulst, 2005). One of the problems with anxiety and depression is that parents and teachers have difficulty identifying symptoms of these disorders (Mesman & Koot, 2000). Unfortunately, children are unlikely to receive help without adult involvement. Proactive screening for anxiety and depression symptoms, preferably including children’s own reports, is therefore important. The school setting is ideal for screening by self-report questionnaires. Schools provide the opportunity of reaching large groups of children, and screening questionnaires can be administered quickly to all children in classes.

Screening in itself does not guarantee that identified children receive the necessary help. In addition to screening, preventive intervention should be offered. Again, schools can be an ideal setting. In contrast to many mental health services, schools have no long waiting-lists for participation, and children are not dependent on parents’ time or availability for transport (Barrett & Pahl, 2006). Furthermore, the familiar location may reduce the stigma that is often associated with mental health organizations, which is likely to enhance participation.

The most promising interventions aiming at childhood anxiety and depression are based on cognitive behavioral therapy (CBT) (Calear & Christensen, 2010; Neil & Christensen, 2009). CBT addresses the recognition of anxious or sad feelings and somatic expression of these feelings, it focuses on identifying negative thoughts, learning coping skills, outcome evaluation, graduated exposure, and relaxation exercises (James, James, Cowdrey, Soler, & Choke, 2013). Teaching children to use CBT techniques in daily life may have long-lasting benefits. This is especially important for children who are more vulnerable for anxiety and depression by genetic or biological disposition, or
certain temperament and personality traits (Beesdo et al., 2009; Birmaher et al., 1996), and who will therefore be at risk for these disorders throughout their lives.

FRIENDS for Life is a group-based CBT prevention program addressing childhood anxiety and depression (Barrett, 2004a; Barrett, 2004b). The World Health Organization (World Health Organization, 2014b) recognizes FRIENDS for Life as a promising intervention for anxiety disorders, and results from research are predominantly positive (Briesch, Hagermoser Sanetti, & Briesch, 2010). The program can be administered as universal prevention (for all children regardless of the presence of anxiety or depressive symptoms), as selective prevention (for specific groups of children at risk for anxiety and depression), as indicated prevention (for children with symptoms of anxiety or depression), and as treatment for children with a diagnosed anxiety or depression disorder.

In 2005, the City of Amsterdam, the Netherlands, formulated a prevention policy, prioritizing the prevention of emotional problems among elementary school children (City Council of Amsterdam, 2005). The City of Amsterdam chose a range of universal and indicated prevention programs to be implemented at elementary schools. As evidence-based practice became the priority of the City and the Public Health Service, only evidence-based programs, or programs with promising research results, were selected. Until then, the focus had primarily been on the prevention of behavior problems. This is not surprising, as children with behavior problems are a burden for their social environment, whereas children with emotional problems are usually compliant and do not draw attention to themselves. In terms of the burden for the children themselves, however, the impact of emotional problems on the quality of life is at least as large as the impact of behavioral problems (Bastiaansen, Koot, Ferdinand, & Verhulst, 2004). Therefore, the City of Amsterdam decided to implement an indicated prevention program targeting anxiety and depression, in addition to programs targeting behavior problems among children. Based on the positive scientific results thus far, FRIENDS for Life was chosen for this purpose.

Since 2007, the Dutch version of FRIENDS for Life (Utens & Ferdinand, 2006a; Utens & Ferdinand, 2006b) has been implemented in Amsterdam. In order to select children with symptoms, all children in participating classes were screened for anxiety and depression symptoms using the Revised Child Anxiety and Depression Scale (RCADS, Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000), a self-report questionnaire. FRIENDS for Life was implemented by the Public Health Service of Amsterdam, and executed by prevention workers of PuntP, a local mental health organization.

The large-scale implementation in Amsterdam provided the opportunity to investigate FRIENDS for Life as an indicated prevention program for anxiety and depression. To date, no other FRIENDS for Life study has examined the program after it had been implemented for several years. The five previous studies that investigated FRIENDS for Life as an indicated prevention program (i.e. for children with anxiety and depression symptoms) started the study and the implementation at the same time and included training and continuous supervision for implementers (Bernstein, Layne, Egan, & Tennison, 2005; Cooley-Strickland, Griffin, Darney, Otte, & Ko, 2011; Dadds, Spence, Holland, Barrett, & Laurens, 1997; Hunt, Andrews, Crino, Erskine, & Sakashita, 2009;
However, when implemented in daily school practice for several years, many potential threats for the implementation according to protocol (program integrity) may occur. For example, school activities may interfere with program sessions, leading to sessions being cancelled or lower attendance of children. Implementers may drift away from the protocol, as they do not receive ongoing training or supervision by researchers. Another issue that has not received much attention is the effects of FRIENDS for Life on depression symptoms when implemented as an indicated intervention. Only one previous study investigated depression symptoms, and found no differences between the intervention and control group two and four years post-intervention (Hunt et al., 2009). No short-term outcomes between intervention and control group were examined.

In this thesis, our main aim was to assess the effectiveness of FRIENDS for Life on anxiety and depression symptoms under naturalistic conditions, and to investigate whether the effects achieved under these conditions were maintained over a 12-month period. In addition, we compared the symptom levels of the intervention group with general population levels to put the relevance of our findings into context. We investigated the program in daily school practice and prevention workers did not receive additional training before or during the implementation. Prevention workers were explicitly asked to implement the program as they were used to doing. This practice-based research is important, as the ultimate goal of evidence-based interventions is large-scale dissemination, without the presence of researchers to guide the implementation.

Our second aim was to investigate the implementation of FRIENDS for Life under these conditions. Therefore, we conducted an extensive process evaluation, carefully examining the program integrity, and participants’ and parents’ appraisal. Lower program integrity and appraisal of the program may affect program effects (Dane & Schneider, 1998; Durlak & DuPre, 2008).

Lastly, since Amsterdam is a multicultural city, inhabited by people of many different ethnic backgrounds, we also had the opportunity to investigate potential ethnic differences in anxiety and depression symptoms. This is important because non-native background is associated with more emotional problems in children (Belhadj Kouider, Koglin, & Petermann, 2014). However, to our knowledge, no Dutch study investigated symptoms of five DSM-IV-classified anxiety disorders and depression in school-aged children using a self-report questionnaire in a large multi-ethnic sample. Further, we were able to examine measurement properties of the RCADS which had not been investigated in a Dutch multicultural population before.

AIM AND OUTLINE OF THIS THESIS

This thesis describes the results of a practice-based study of FRIENDS for Life when implemented as an indicated prevention program. The study was designed as a quasi-
experimental cluster-controlled trial. Chapter 2 provides an overview of our research objectives, study protocol, and the FRIENDS for Life intervention.

Chapter 3 reports on the structure, reliability, and validity of the RCADS, which was our primary outcome measure. Chapter 4 describes ethnic differences in anxiety and depression symptoms among elementary school children in the Netherlands. We also investigated whether potential ethnic differences were associated with socioeconomic status and peer rejection.

Chapter 5 reports on the effects of FRIENDS for Life as an indicated preventive intervention as part of an existing prevention strategy. Symptoms of anxiety and depression in children who participated in FRIENDS for Life were compared to symptoms of children who did not receive this intervention. In addition, we explored the moderating effects of gender, age, ethnicity, severity of initial symptoms, comorbid externalizing problems, and peer rejection. Chapter 6 is an extension of the effect study, in which we investigated the long-term effects of FRIENDS for Life on symptoms of anxiety and depression at 6 and 12 months post-intervention.

Chapter 7 reports on the program integrity of FRIENDS for Life and children’s appraisal of the program. We investigated program integrity with live observations and collected quantitative data on children’s appraisal. In addition, we investigated whether program integrity and appraisal were associated with program outcomes. Chapter 8 reports on the results of our qualitative study of children’s and parents’ appraisal of the program. Children who participated in FRIENDS for Life were invited to join an online focus group (OFG). In addition, parents of participants were invited for a telephone interview. Where the quantitative data in Chapter 7 provided a general overview, the OFGs and interviews were used to retrieve in-depth information on children’s and parents’ appraisal of the program.

Chapter 9 discusses the main findings of the study and considers its strengths and limitations. Further, we address implications of our findings for the prevention of anxiety and depression in general, followed by a discussion on policy and practice, and indicated prevention. Finally, we discuss implications for FRIENDS for Life in practice and directions for future research.
INTRODUCTION


**City Council of Amsterdam. (2005).** [Children First. Spring Memorandum 2005]. Amsterdam, the Netherlands: City Council of Amsterdam.


