KiVa anti-bullying programme in Estonia – the results from a two year cluster-randomised pilot trial

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Summary

Introduction

Bullying is defined as repeated and intentional aggressive behaviour against a victim who cannot readily defend him/herself (Olweus 1993, 2013). Bullying and victimisation in schools is a widespread and universal problem seriously threatening students' mental and social health (Arseneault *et al*., 2010; Hawker & Boulton, 2000), impairing their academic achievements and increasing the risk of school drop-out (Nakamoto & Schwartz, 2010). Several negative long-term effects for victims as well as bullies have been determined (Olweus, 2013). Bullying can also negatively affect bystanders' mental health by merely observing the victimisation of their peers (Rivers *et al*., 2009).

Schools have an obligation (Põhikooli..., 2010) and the need to reduce bullying. The most effective ways to combat bullying are the evidence based whole school programmes (Evans *et al*., 2014; Farrington & Ttofi, 2009; Ttofi & Farrington, 2011). There are still numerous initiatives and programmes available with varying and questionable effectiveness (Salmivalli & Poskiparta, 2012a). When compared with other European countries, Estonia's bullying and victimisation rates are remarkably high, with more than 20% of students suffering from chronic victimisation (Chester *et al*., 2015; Craig *et al*., 2009; Currie *et al*., 2012). Although much has been done in the field of bullying research (see Kõiv, 2009 for overview), there has been no evidence-based whole-school anti-bullying programmes in Estonia.

KiVa anti-bullying programme has been developed in Turku University, Finland and its effects and effectiveness has been evaluated with large scale randomised controlled trials and a national roll-out trial (Kärnä *et al*., 2011a, 2011b; Salmivalli & Poskiparta, 2012a). The KiVa programme relies on *participant roles approach* to bullying (Salmivalli, 2014; Salmivalli *et al*.,

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1996) and includes a variety of practices for the prevention of bullying, tackling bullying cases that arise and require attention, and minimising the negative effects of bullying and victimisation (see more Salmivalli & Poskiparta, 2012b; KiVa International, s.a.). In 2012, the Foundation Against Bullying was formed in Estonia, and the adaptation of KiVa anti-bullying programme was started (see Kiusamisvaba Kool, s.a.). In parallel with the adaptation processes a preliminary evaluation was conducted.

The aim of this paper was to introduce the adaptation and the results of the first cluster-randomised controlled trial (henceforth *cluster-RCT*) of the KiVa anti-bullying programme in Estonian schools from 2013–2015. In line with the positive results from Finland (see Salmivalli & Poskiparta, 2012a) and Wales (Hutchings & Clarkson, 2015) a reduction in school-level self-reported prevalence of victims and bullies was expected. At the same time researchers were conscious of not getting any significant effects since the programme components were adapted in parallel to the trial, and it was likely that implementation fidelity might have been compromised because of that (Ferrer-Wreder *et al*., 2012). Furthermore, the larger adaptation project limited the number of schools in the intervention group and dictated the timetable of cluster-RCT design phases. Still, the trial was an important indicator in understanding what further adaptations and modifications were required to the programme.

Method

All schools where studies were carried out in Estonian and which had students at least from Grade 1 to Grade 6 (11-year old, 473 schools) were sent an information letter with an invitation to apply for the pilot trial. All 84 volunteering schools were stratified by school size into 4 groups and from each group 5 schools were blindly drawn by a research assistant into program-group and wait-list control-group. One control-school dropped out before the baseline assessment, resulting in a sample of 20 KiVa and 19 control schools from all over Estonia. The prevalence of bullies and victims were assessed with two global self-reporting items from the Olweus Bully-Victim Questionnaire (OBVQ, Kärnä *et al*., 2011a; Olweus, 2013; Solberg & Olweus, 2003). The trial included three computer based data collections: a baseline assessment in autumn 2013 (5090 students from Grades 2 to 6), with a first follow-up assessment in spring 2014 (5162 students from Grades 2 to 6, plus 652 from Grade 1), and a second follow-up in spring 2015 (3537 students from Grades 2 to 6, plus 456 from Grade 1). Students completed the anonymous questionnaires via computer during normal school hours.

All students could participate unless a clear parental refusal was received by an informed consent letter. An opt-out consent procedure was chosen for keeping the sample as representative as possible. Differently from recommendations to high quality RCT-s (Campbell *et al*., 2012), the randomisation was implemented before informed consent procedure and baseline assessment. Since the longitudinal data was anonymous and individual changes in bullying and victimisation could not be observed, the school level analyses were conducted by assessing group differences and changes in prevalence. To assess program effects the group level OR-s were calculated.

Results

Prevalence of bullies and victims determined by student self-reported bullying and victimisation frequencies with criterion of frequencies "2–3 times" or more recommended by Solberg & Olweus (2003), were included into analysis. In line with previous research (e.g. Chester *et al*., 2015; Currie *et al*., 2012) the average baseline prevalence of victims was 22% and bullies 9%. This differs from Currie *et al*. (2012) where no clear age-related trends in reduction of bullying and victimisation rates were visible. Previously the age-related trends have been shown in older samples of Estonian students (e.g. Currie *et al*., 2012), there is no available data regarding primary school students. Baseline data for KiVa- and control-schools were similar.

The results from follow-up assessments showed significant reductions in victimisation after the first 8 months of the programme's implementation when compared to baseline and to the control group as well. The average prevalence of victims in KiVa-schools dropped from 21.5% to 17,8% resulting in an average 17% reduction. The odds ratio (OR) of being victimised after the first program year compared to the previous situation was 1.27, $p<.001$. This is similar to the OR demonstrated by Kärnä *et al*., 2011b in the Finnish national rollout trial. The second year follow-up results did not differ significantly from the first follow-up levels. When compared to control-schools, the risk of being victimised after the first trial year was significantly higher in control-group (OR=1.25, $p<.01$). No significant difference in bullying emerged. Results of the second follow-up showed a significant drop in bullying and victimisation which was visible also in control-group. This may be due to programme dissemination (*spillover effect*) to control-schools since they were in wait-list condition, very motivated to confront bullying, and their preparation for implementing KiVa had already started in spring 2015, before the second follow-up assessment.

Limitations

Besides the possible spillover effects (dissemination of program practises into control-group) several other issues need attention. Limitations arise when deviations are made to current study design from standard quality recommendations of RCTs (Campbell *et al*., 2012). Namely the randomisation before the informed consent collection procedure and baseline assessment may cause recruitment bias (Higgins & Green, 2011). In longitudinal design the selective attrition of participants is a risk to validity (e.g. Chalamandaris & Piette, 2015), in this study one control school withdrew from participation after randomisation and before baseline assessment, therefore no information about it's bullying data is available. In the present trial three schools which dropped out from KiVa group showed no difference from others, the reasons for leaving were related to school reforms; for five leaving schools from control group motivational issues may be relevant. Some methodological challenges are related to the validity of Olweus Bully-Victim Questionnaire global items for younger students. Relevant analysis in Estonia is needed, but OBVQ has been frequently used with older students, and in Finnish studies the good construct validity also for younger students has been demonstrated (Kärnä *et al*., 2011a, 2011b). Also a thorough explanation of bullying was presented before items as recommended by Evans and colleagues (2014). In data analysis the clustering was considered and unit-of-analysis error avoided by conducting cluster-level analyses.

The results presented here are from the pilot cluster-RCT. This cluster-RCT is one of the first RCT-s in the Estonian educational field contributing significantly to practical decisions about anti-bullying interventions, and helping to raise the competence of conducting RCT-s in educational settings. For more robust assessment of KiVa program effectiveness in Estonia new RCT is needed in accordance with RCT guidelines, with larger samples, a full programme adapted and special attention to the implementation fidelity (Ferrer-Wreder *et al*., 2012). The system of providing KiVa and supporting it's implementation fidelity in schools is still under development. Every year new schools adapt KiVa and the research continues.

Keywords: school bullying, bully, victim, evidence based anti-bullying programme, randomised controlled trial