A matter of skills: a mixed-method study on the evaluation and implementation of an SEL program tailored to the skills adolescents need in educational settings and at home

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Chapter 3

Effects of the Dutch Skills for Life program on the health behavior, bullying, and suicidal ideation of secondary school students

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ABSTRACT

The purpose of this paper is to evaluate the effects of the Dutch "Skills for Life" programme on students' health behaviours, bullying behaviour and suicidal ideation.

The effectiveness of the "Skills for Life" programme on health behaviour outcomes was evaluated at three points in time in using a cluster randomized controlled study design with a follow-up of 20 months. In total, 27 schools and 1,394 students were included.

The programme was judged to be well implemented in just under half of cases. The outcome results for the experimental group (EG) compared with controls present a complex picture at the three different time points used for evaluation. There was a clearly positive effect on levels of alcohol consumption and a clearly negative effect on smoking across time. There was a mixed picture over time for suicide ideation and for bullying including sexual bullying (although the prevalence rates for bullying were low and thus results should be treated with caution).

There were generally more positive impacts on students with lower educational levels including less suicidal ideation and less bullying. Limitations were the dropping out of several schools during the study and the low level of fidelity of the curriculum. Social emotional learning (SEL) programs can be part of a health promoting school framework but should be more tailored to disadvantaged school populations.

The findings indicate that students with a less optimal starting position, when it comes to health related behaviours, benefit most from a SEL programme. This indicates that schools with disadvantaged school populations could benefit most from a Health Promoting School approach.

INTRODUCTION

Estimates indicate that each year 20 percent of adolescents in the world suffer from mental health problems, such as aggression, depression and anxiety (WHO, 2012).

Mental health and well-being in adolescence have implications for self-esteem, school attendance, academic achievement, social cohesion and future health and life chances and vice versa (Zins et al., 2006; WHO, 2012). Support from, and feelings of connectedness with, social contexts at home, at school and in the community are important in this age group for the development of healthy behaviours (WHO, 2003a; Atkins et al., 2010; Weist et al., 2010; Trickett and Rowe, 2012; Busch et al., 2013). Schools should therefore not only aim their efforts at improving academic achievement of students, but also pay attention to the social-emotional and moral development by teaching students appropriate skills that they can use during the course of their life (Onderwijsraad, 2013a; Eccless and Roeser, 2011; Stewart and Wang, 2012; Langford et al., 2014).

Several social emotional learning (SEL) programs have been developed to address this issue. Meta-analyses and systematic reviews with regard to universal school based SEL programmes delivered by regular classroom teachers, show significant positive effects on social-emotional skills and attitudes about self, others and schools (Durlak et al., 2011; Sklad et al., 2012; Weare and Nind, 2011). These interventions also contribute to behavioural adjustment, pro-social behaviours and academic achievement and help decrease externalising and internalising problems (Gravesteijn et al., 2011). SEL programmes realise these effects by aiming at the integrated promotion of important life skills. The following life skills have been defined by the World Health Organization (WHO) and others (Collaborative for Academic, Social, and Emotional Learning, 2005; WHO, 2003b; Zins et al., 2004), and include: self-awareness, social awareness, self-control and social relationships, decision-making skills and stress management.

A Health Promoting School is one that constantly strengthens its capacity as a healthy setting for living, learning and working. In order to achieve this goal, activities can be focussed on the curriculum, school environment and health services and community partners of the school. When schools embrace a Health Promoting School approach they can include a SEL programme in order to strengthen their effort to improve the social, emotional, li and health behaviour problems of school students. In the Netherlands, a "Skills for Life" programme called "Levensvaardigheden", is available for 13-17 years

old secondary school students (Diekstra, 2008; Gravesteijn and Diekstra, 2013). When schools introduce this programme, their teachers are extensively trained to convey the principles and ideas of the "Skills for Life" curriculum. This programme is aimed at the development of social, emotional, and moral skills among adolescents through a school curriculum with weekly lessons. The programme addresses general skills such as self-awareness, handling of thoughts, feelings and behaviour of self and others. In addition, the lessons focus on themes from adolescents' daily life such as substance use, norms, values and friendships, bullying, sexuality and teen pregnancy, conflicts with teachers and peers, and depression. Studies have indicated that these themes address health issues and problems that can play an important role in the life of adolescents.

Both alcohol and tobacco use rise substantially during adolescent years, and bullying is found to be a widespread problem among school children in many countries (Craig et al., 2009). Furthermore, studies indicate that in The Netherlands a substantial number of teenagers report suicidal thoughts (11.2 per cent) or suicide attempts (6.6 per cent) (Ten Have et al., 2006).

The intention is also that the "Skills for Life" programme contributes to a positive school climate. In this light the "Skills for Life" curriculum can be seen as a strong part of a Health Promoting School approach. It is presumed that stimulating the positive development of social, emotional and moral skills will influence health behaviour related to substance use, sexual behaviour and bullying. Therefore, it will be interesting to investigate what effects the "Skills for Life" curriculum has on several of these health issues that the programme aims at. In this study we aimed to investigate the effects of the "Skills for Life" programme in a real-life setting. Schools that participated in the research project received the same type of support as regular part of their curriculum during the study as non-participating schools. Therefore, a realistic setting for implementation of the programme was created and the study can be considered an effectiveness study.

The main goal and research question of the current study was to explore: what is the effect of "Skills for Life" on health behaviours, such as alcohol and tobacco use, sexual harassment, suicidal ideation and bullying behaviour?

METHODS

The "Skills for Life" programme

"Skills for Life" is a Dutch universal school based prevention programme aimed at reducing behavioural and health problems in adolescents between 13-16 years of age

and enhancing pro-social behaviour, self-awareness, social awareness, self-control, interpersonal skills and ethical decision making. The programme was developed by Diekstra and Gravesteijn (Diekstra, 1996; Gravesteijn and Diekstra, 2013) at the Rotterdam Municipal Health Centre between 1996 and 2010 and evaluated in several studies regarding its effects (Gravesteijn et al., 2004, 2010).

Teachers deliver the programme after following two periods of three-day training, each followed by two follow-up booster sessions. "Skills for Life" is based on the Social Learning Theory and Rational Emotive Behavior Therapy (REBT) and focuses on enhancing social, emotional and moral skills. The application of REBT-principles in educational interventions, increases cognitive self-control, rationality and leads to increased adaptive behaviour in problem situations. Students learn from each other in the classroom setting through social modelling and vicarious learning techniques. They learn problem specific skills such as resisting peer pressure and moral decision making.

The programme consists of 25 lessons given during the course of two school years. The first four lessons are aimed at the awareness and handling of thoughts, feelings and address general skills such as interpersonal problem solving skills, emotion regulation skills and critical thinking. The remaining twelve additional lessons during the first year, and nine during the second year focus on skills for specific situations, such as giving and seeking help, dealing with bullying, setting and respecting boundaries, substance use, norms, values and friendships, sexuality, suicidal thoughts and conflicts with teachers and peers. These lessons are also built on the principles of the first four basic lessons. The programme uses different teaching methods including active enactment, modelling with the use of DVD extracts, role play, discussion, feedback and making commitments to engage in healthy behaviour.

Study design

The effectiveness of the "Skills for Life" programme on health behaviour outcomes was evaluated using a cluster randomized controlled study design with a follow-up of 20 months. School locations were allocated to the experimental and the control condition. The teachers in the experimental school locations were trained to present the "Skills for Life" curriculum to their school classes. Teachers in the control school locations were allocated to a waiting list control group (CG). The curriculum was presented to the students in two consecutive school years: in the first school year they received the basic lessons and in the second school year the follow-up lessons.

Randomisation and drop-out

A total of 26 schools were randomized, and assigned to either the experimental group (13 schools) (EG) or the CG (13 schools). In addition, there were 11 schools who strongly indicated a preference for the EG, and one school who strongly indicated a choice for the CG. Because the 13 vs 13 schools would not create enough power for analysis to compare main effects, we decided to include those schools that were not randomized. This resulted in a total of 24 experimental schools and 14 control schools. We studied possible differences in background variables between the randomized and non-randomized schools. There were no differences at a student level, such as the baseline measure of the outcome measures. However, non-randomized schools had lower education level classes (χ^2: 31.76; $p < 0.01$), were more often from a urban environment χ^2: 27.35; $p < 0.01$) and included more grade seven classes χ^2: 9.19; $p < 0.01$) than the randomized schools. In the analyses has been accounted for differences in these characteristics.

There were several apparent reasons for drop-out both at an individual level and at class/school level. Reasons for individual students not to participate in follow-up measures were first, not being present at school or at the lesson, at the time of the follow-up measurement, second, having changed classes or schools which was fairly often the case especially for the follow-up measurement of the second study year when a substantial number of students had changed classes or schools. At a school level there was a substantial number of classes and schools that were not able to perform the follow-up measurements because these took place just before summer recess. This is a very busy time for schools, and several schools were not able to schedule an hour where the questionnaires could be filled out.

Programme implementation

To assess the completeness and fidelity of programme implementation, teachers kept a log of the “Skills for Life” lessons given and project assistants carried out observations in the class room. Students from grades 7-9 (age 13-16 years) participated by filling out paper and pencil questionnaires at three points in time. This was supervised by the schoolteacher who gave the lessons. Students filled out questionnaires at the start of the first year (T0), a (short-term) follow-up measurement at the end of the first year (T1), and a (long-term) follow-up measurement at the end of the second year (T2).

Outcome measures

Self-report questionnaires were used, aimed to measure health behaviours among the students, such as alcohol use, tobacco use, sexual harassment behaviour, suicidal ideation and bullying behaviour. The questionnaires included standard measures derived from questionnaires used in previous studies. The outcome measures were standard questions on health behaviour from the Dutch local and national health monitor (National Institute for Public Health and the Environment, 2011). The following questions were included.

Alcohol use: did you ever drink alcohol, even if it was only a few sips? Answer options: No, never (0) – yes (1). Tobacco use: did you smoke a cigarette the last month, even if it was only one puff? Answer options: No (0) – yes (1).

Cannabis use: have you ever been offered cannabis (hashies or weed)? Answer options: No, never (0), yes at school (1), yes, at home or at friends' home (2), yes, on the street, in a park or at a hangout (3), yes, in a café or disco, at a party or concert (4), somewhere else (5).

Sexual harassment behaviour: being forced: the last six months, did someone force you to do sexual things or to allow you to do sexual things that you did not want to? Sexual things are kissing, stroking or sexual intercourse. Forcing others: the last six months, did you force someone to do sexual things, or did you force someone to allow you to do sexual things that he or she did not want to? Answer options: no (0), yes, a few times (1), yes, repeatedly (2), yes, often (3).

Bullying: how often have you been bullied at school the last three months? How often have you been bullied on the internet or via SMS the last three months? How often have you been involved in bullying other students at school the last three months? Answer options: never (0), less than twice a month (1), two or three times per month (2), about once a week (3), more times per week (4).

Suicidal ideation: have you thought to make an end to your life the last 12 months? Answer options: never (0), once in a while (1), occasionally (2), often (3), very often (4). Have you attempted to make an end to your life the last 12 months? Answer options: no (0), yes (1). All items were asked at the three time points of measurements, except for suicidal ideation, which was asked at T0 and T2. The duration of the self-reported behaviours differed in the questionnaire and was dependent on their prevalence. For instance, suicidal ideation is known to be less prevalent and was therefore measured

over the last year, while tobacco use is more prevalent and was therefore asked over the last month.

The student questionnaire was pre-tested among students of lower education levels. A Dutch review board assessed that the study was in accordance with the Dutch act on medical research involving human subjects. Medical ethical approval was not required. Students were guaranteed anonymity when filling out questionnaires. Therefore, individual care was not offered when students gave specific answers in the questionnaire. Teachers and a project assistant were available when the questionnaires were filled out, to assist the students and in case they indicated that they needed care.

Statistical analysis

t-Tests were used to investigate the differences in background characteristics between experimental (EG) and control group (CG). Outcome measures were dichotomized. Intra class correlation varied from 0.01 for the variable "being bullied" to 0.04 for "alcohol use". Therefore, multilevel logistic regression analysis was used to calculate the effects of the "Skills for Life" programme on the health outcome variables, whereby the individual level and the school class level were included. Because we measured the outcomes at the individual level, these are also the results that are reported. Baseline levels of the outcome variable were included in the analysis as independent factors to correct for possible initial differences between the EG and CG. Also, differences in background characteristics were controlled for in the analyses. Stratified analyses were carried out in subgroups of students with low and high educational levels. All analyses carried out in SPSS 17.0 (Chicago, IL: SPSS Inc.).

RESULTS

Participating schools and students

A total of 27 (18 experimental and nine control schools) out of 38 (24 experimental and 14 control schools) schools who participated at the start of the evaluation study, were left at the last post-test, resulting in a loss to follow-up of 29 per cent. Some reasons for this loss to follow-up were change of school class teachers, breaking up of school classes in the second school year when the follow-up lessons should be given, and the large workload of the evaluation study for teachers due to many measurement rounds.

In all there were 1,394 students (EG: 913, CG: 481) participated at the start of the study at T0. See Figure 1 for the flowchart. At T1 995 of them remained (EG: 663, CG: 332) and

at T2 a group of 511 students participated (EG: 283, CG: 229) in the research population. The study groups differed significantly with regard to age and educational level. The mean age was 14.0 (SD = 0.8) for the EG and 14.4 (SD = 0.9) for the CG. The students of the EG were more often of higher educational level schools than the CG (Table 1) (EG: 48 percent higher educational level school vs CG 32 percent; χ^2 35.0, df = 1, $p < 0.01$).In the statistical analyses has been accounted for these differences in background characteristics.

Programme implementation

On average, 11.5 of the 16 basic lessons of the first school year (range 4-17) were given. Five out of 28 teachers had given all 16 lessons and ten teachers conducted less than ten lessons. The first seven basic lessons were given by 85 percent of the teachers, while the last five basic lessons were given by 50 percent of the teachers. Project assistants who observed lessons in the school class rated the teachers' performance related to assignments given in the school class as "good" for 85 percent of the assignments. The lessons were evaluated similarly in the teachers' log. On a scale from 1 to 3, the teachers rated the conduct of the lessons to a mean of 1.5 (SD = 0.2), from 1.2 (SD = 0.3), evaluated the goal achievement of the lessons to a mean score of 2.4 (SD = 0.2) on a scale from 1 to 5. The project assistants counted 48 percent of the 25 goals of the observed lessons as "well achieved", four percent as "more or less achieved" and 48 per cent as "not achieved". No results can be given with regard to the implementation of the follow-up lessons in the second school year, due to the low number of teachers that filled out the logs.

Effects on health behaviour

Results on differences between the EG and CG are presented in Table 2. With regard to alcohol use there was a positive effect of the programme at the end of the second year (T2). Fewer students from the EG reported use of alcohol comparing T0 and T2, than students form the CG. From T0 to T2 more students in the CGs reported that they ever used alcohol, while in the EG there was no increase in alcohol use.

This difference was statistically significant after control for the pre-test score and background characteristics (T0 vs T2: OR = 0.25, CI= 0.07 - 0.84). Negative effects were found on tobacco use. Students in the EG reported more often that they had smoked compared to students in the CG (T0 vs T2: OR = 3.42, CI = 1.26 - 9.30).

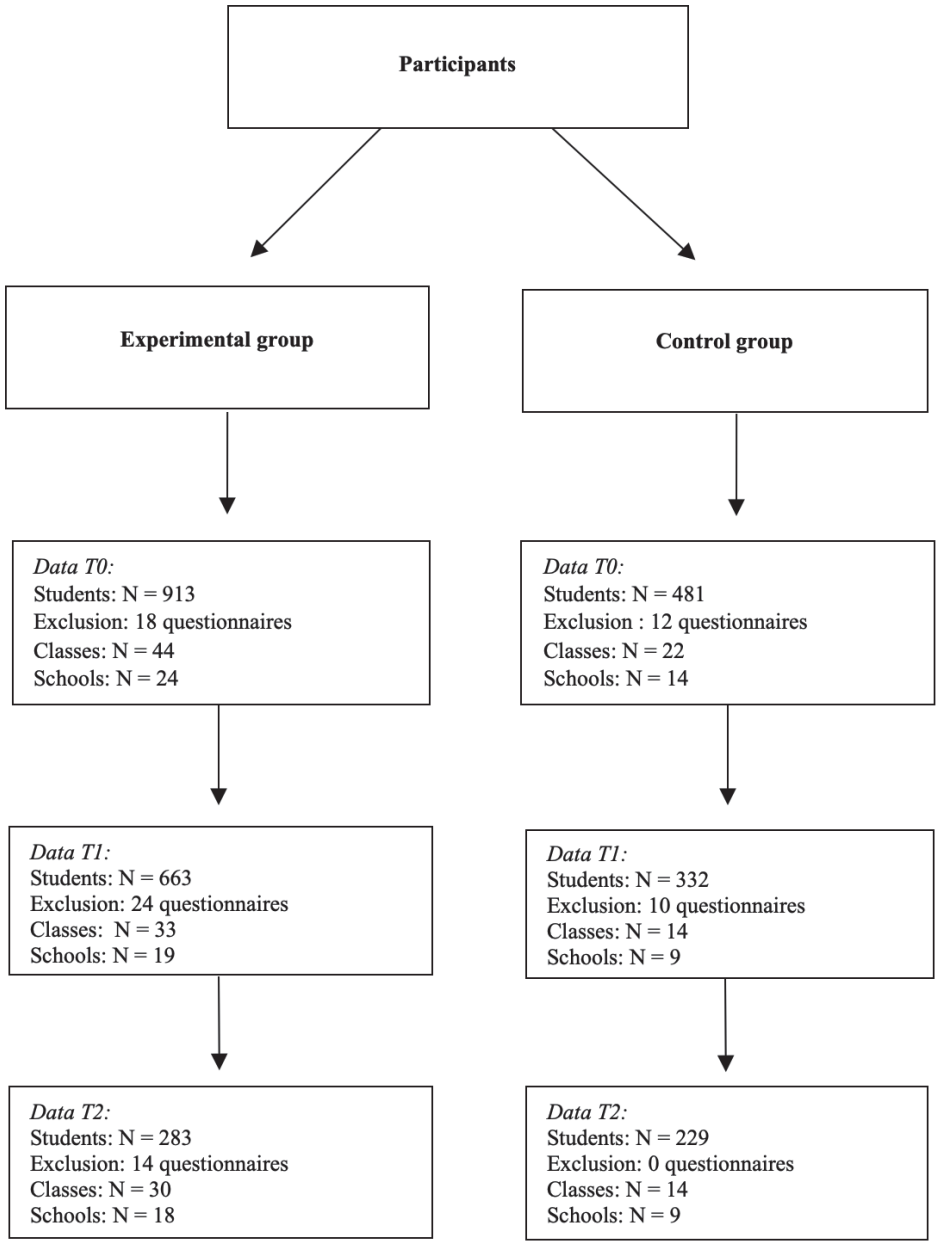

Figure 1 Flow chart of participating schools and students

Table 1: Background characteristics of students in experimental and control group.

	Variable	Control group (N = 481) %	Experimental group (N =1107) %	Chi-square	*p*
Mean age in years (SD)		14.4 (0.9)	14.0 (0.8)	10.08	**<.000**
Gender	Boy	51	53	0.64	0.44
	Girl	49	47		
Educational level	Lower level	68	52	35.00	**<.000**
	Higher level	32	48		
Urbanisation school area,	<100.000 inhabitants	63	65	0.56	0.46
	>100.000 inhabitants	37	35		
Country of birth	Netherlands	95.0	93.6	3.01	0.69
	Surinam	0.2	0.1		
	Dutch Antilles	0.4	0.6		
	Turkey	0.4	0.6		
	Maroc	1.0	0.7		
	Other country	2.9	4.5		

With regard to general bullying behaviour a significant difference between the EG and CG was found at T1 (T0 vs T1: OR = 0.30, CI = 0.10 - 0.92). In the multilevel model students who had followed the "Skills for Life" programme, reported less often being bullied at the end of the first year (T1), compared to those in the control schools. At the end of the second year (T2) fewer students in the EG reported that they bullied other students compared to the CG (T0 vs T2: OR = 0.08, CI = 0.02 - 0.30). However, at T1 more students in the EG reported being digitally bullied compared to the CG (OR = 20.19, CI = 1.20 - 338.92). Students in the EG were more likely to report that they forced other people to do sexual things than were students in the CG (OR = 24.31, CI = 1.84 - 320.23).

However, it should be noted that for both outcome variables (being digitally bullied and sexual harassment) the prevalence rates were at some time measurements very low and therefore caused statistically a wide range of the confidence interval. Therefore, these results should be interpreted with caution. No main effects between the EG and CG were found on use of cannabis and suicidal ideation.

Lower educational level vs higher educational level students

Stratified analyses in subgroups of educational level indicated that there were several effects for students in the lower educational levels of our study sample that were not present among the higher educational levels. Fewer students in lower educational levels

in the EG reported suicidal thoughts compared to the CG at the end of the second year. (T0 vs T2: OR = 0.43, CI = 0.19-0.95). Lower educational level students in the EG also indicated that they were less likely to bully other students compared to the CG at the end of the second year (T0 vs T2: OR = 0.05, CI = 0.01-0.25).

Tabel 2 Experimental versus control group – percentage (%) at T0, T1, T2, and effects at T1 and T2 (odds ratio's) for the main outcome measures [1]

Outcome	Group	Percentage (%)			Effects at T1			Effects at T2		
0 = no 1 = yes		**T0 %**	**T1 %**	**T2 %**	**Adj. Odds Ratio**	**95% CI**	***p***	**Adj. Odds Ratio**	**95% CI**	***p***
Alcohol										
Ever used	CG	77	72	87	0.78	0.32-1.91	.59	.25	.07-0.84	**.03**
	EG	69	63	70						
Tobacco use										
Smokes now	CG	27	26	33	1.50	0.65-3.47	.34	3.42	1.26-9.30	**.02**
	EG	17	19	24						
Cannabis use										
Ever proposed	CG	34	31	38	0.78	0.31-1.63	.50	1.09	.46-2.59	.84
	EG	30	25	30						
Sexual harassment										
Ever forced by another	CG	7	5	10	1.03	0.20-5.39	.97	1.22	.21-7.08	.83
	EG	6	6	7						
Ever forced another	CG	4	1	6	10.28	0.48-218.42**	.14	24.31	1.84-320.23**	**.02**
	EG	2	2	4						
Bullying										
Being bullied	CG	9	10	12	0.30	0.10-0.92	**.03**	.34	.06-1.75	.20
	EG	10	12	6						
Being digitally bullied	CG	4	1	7	20.19	1.20-338.92**	**.03**	4.73	.62-35.97	.13
	EG	2	4	5						
Bullying others	CG	8	9	13	1.08	0.35-3.30	.90	.08	.02-0.30	**<.01**
	EG	10	11	7						
Suicide										
Suicidal thoughts	CG	26	-	26	-	-		.90	.47-1.72	.70
	EG	21	-	19	-	-				
Suicide attempt	CG	7	-	10	-	-		.64	.09-4.46	.92
	EG	3	-	4	-	-				

** Due to low percentage, the upper level of the CI is very high.
[1] In the analyses was controlled for the following background variables: age, gender, educational level, urbanisation

DISCUSSION

The main goal of the current study was to evaluate the effects of the Dutch "Skills for Life" programme on health behaviours. The "Skills for Life" programme aims to improve students' social and emotional skills and the teachers' ability to transfer these skills.

The results of our randomised controlled trial were mixed.

Students from schools who followed the "Skills for Life" programme used less often alcohol after two years. The number of students who ever used alcohol had risen in the control schools but had not risen in the intervention schools. Students in the intervention schools were less often bullied at the end of the first year and students bullied others less often at the end of the second year.

However, students in the EG reported over time that they more often forced others to do sexual things and that they were digitally bullied. We found a negative effect on smoking, with students in the EG used more often tobacco compared to the CG (the effect on tobacco use could be explained by the lower levels of use in the EG at the beginning of the study. These initial low levels gave more room for an increase in tobacco use).

There was evidence for a greater impact on a specific subgroup of students, those from lower educational levels. These students in the EG reported that they bullied other students less often. We also found that these students experienced less often suicidal thoughts. Other studies among disadvantaged schools have also found positive effects of SEL programs on interpersonal antisocial behaviour such as bullying (Lewis et al., 2013b) and a positive impact on physical activity, BMI, psychosocial outcomes and grade performance in high school adolescents (Melnyk et al., 2013). With regard to the effects on suicidal ideation, it is promising that a general SEL programme such as the "Skills for Life" programme can lower these strong negative feelings among disadvantaged adolescents. Other more specific depression prevention programs have also shown to be able to lower negative feelings (Calear and Christensen, 2010).

These results indicate that the "Skills for Life" programme has the ability to have a beneficial impact on different health outcomes, particularly for disadvantaged students. This is in line with several reviews that conclude that many SEL programs can have positive effects on a wide variety of social and emotional skills and other health outcomes (Durlak et al., 2011; Payton et al., 2008).

Strengths and limitations

Strengths of our current study are the randomisation of most of the schools, the large number of participating students and broad variety of outcome measures. Limitations are the drop-out of several schools during the study and the low level of implementation of the curriculum. Some of the results on health behaviour have to be interpreted carefully because of the low prevalence of risk behaviours among secondary school students which leads to broad confidence intervals and some unstable odds ratios.

Implications for practice

The Dutch "Skills for Life" curriculum is a promising programme that could be integrated in a Health Promoting School approach. By extending the programme with a whole school approach, by for example including parents and school facilities, the programme can become part of the school culture. Involvement of all teachers at a school in teaching the "Skills for Life" lessons contributes to opportunities for true support of the "Skills for Life" aims and ideas. In such a culture many teachers are trained to support SEL. As students receive lessons on different subjects from various teachers, they will come across the "Skills for Life" ideas in various manners during their school day. Integration of "Skills for Life" in the school culture can contribute to a SEL approach of students, teachers, parents and even the larger community around a school, such as social health workers.

A Health Promoting School approach offers an excellent framework for involving every member of the school staff, every student and even every parent or other member of the school community to behave in a health promoting way. Since there are very few comparable programs available for Dutch high school students, the "Skills for Life" programme is a promising option to be included in the Health Promoting School framework that is currently under development in the Netherlands.

In The Netherlands the high schools are divided into different levels, based on the cognitive abilities of the students. Our results show that the "Skills for Life" curriculum enhances children's health promoting skills whereby the strongest effects are found among the children in the lower educational levels. This sheds an interesting light on the implementation of such a programme within a Health Promoting School context. Many studies have shown that a lower social economic status is related to less health promoting behaviour and more health problems (Pampel et al., 2010). Children from these households are more often educated at a lower educational level, such as vocational

training schools, in The Netherlands. These children have a less optimal starting position when it comes to health-related behaviours. This was also shown in our study sample. On many of the health outcome variables, these students indicated more health problems at the baseline measurement compared to students from higher educational levels. This means that there is more room for improvement for these lower educational level students, and as our results show, they are the ones who benefit most from the "Skills for Life" programme. Interestingly, this group of students also indicates that they experience the programme as sometimes being "too difficult". This indicates that there is room for improving the programme and tailoring the programme specifically to students from the lower educational levels. In response to these results, the Dutch government has recently granted funding to adjust the Dutch "Skills for Life" programme and make the programme more suitable for those students at lower educational levels.

Implications for research

Our current study indicated that lower-level education students, who start with a less optimal position on several health outcomes, benefit most from a programme such as "Skills for Life". It will be interesting to find out if there are other subgroups of students that benefit more from a SEL programme. Future research should be aimed at studying subgroups that benefit most from a Health Promoting School approach.

Furthermore, our results show that programme fidelity can be improved. Many teachers did not complete the full programme. It is possible that the level of implementation can be related to teacher qualities. The execution of a SEL programme includes many skills to teach. It may be that not all teachers are capable of teaching all these skills. Future research could focus on the relation between teacher qualities and the level of implementation of SEL programs. This will give more insight into what teacher qualities are beneficial for a better implementation of SEL programs.

CONCLUSION

Overall, it is concluded that the Dutch universal SEL programme "Skills for Life" has some positive effects on some health outcome measures among students especially for the disadvantaged. Universal SEL programs can be considered a promising option to be included in the Health Promoting School framework. This may benefit especially those students from a more disadvantaged background.